CONNECTICUT CHILDREN'S
DEPARTMENTS OF PEDIATRICS &
PEDIATRIC SURGICAL SUBSPECIALTIES

ANNUAL ACADEMIC REPORT 2021

Connecticut Children's

UCONN HEALTH

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CHAIRS' SUMMARIES

Dear Colleagues and Friends,

It is with great pleasure that we present the 12th annual report from the Department of Pediatric Surgical Subspecialties of Connecticut Children's and the eighth combined report with the Department of Pediatrics. This report continues to highlight the solid alignment between Surgery and Pediatrics and the continued multidisciplinary growth of combined surgical and pediatric programs at Connecticut Children's.

As we reflect on the challenges over the last two years, I continue to be inspired by our Connecticut Children's team. Despite having to shut down elective surgery and then re-open, the Department of Surgery was able to perform 10,010 surgical procedures in fiscal year 2021. The teams worked hard to rapidly resume surgeries and deliver the care our young patients deserve.

In 2021, we were pleased to earn national recognition for five of our medical and surgical divisions. *U.S. News & World Report* ranked Connecticut Children's divisions of Diabetes & Endocrinology, Gastroenterology & GI Surgery, Neonatology, Orthopedics, and Urology as among the best in the country. The Pediatric Orthopedics division was also named best in Connecticut. In addition, Connecticut Children's continues its Magnet® designation for Nursing, and the Bariatric Surgery Program, in collaboration with Hartford Hospital, continues as a center of excellence as determined by the American College of Surgeons and the American Society for Metabolic and Bariatric Surgery. Connecticut Children's is the only pediatric center in the state to hold this designation. We received re-verification of our Level I status for trauma and welcomed site visitors from the American College of Surgeons to gain Children's Surgery Verification (CSV) designation.

Over the last year, we continued with strong pediatric cardiac surgery volumes with help from our pediatric cardiac surgeons, Dennis Mello, MD, and Raina Sinha, MD, who completed 111 cases. This team, along with pediatric cardiologists and pediatric intensivists, provide optimal care for some of the most critically ill neonates. In addition, we welcomed two new diagnostic catheterization cardiologists, Cesar Igor Mesia, MD, and Caitlyn Heyden, DO. Together with Frederic Bernstein, DO, 192 cardiac catheterization procedures were performed. This entire team is working together to build a state-of-the-art cardiovascular institute to serve the region.

In our Ophthalmology division, we welcomed new division head, Robert T. Spector, MD. We have seen strong growth in ophthalmology with the addition of new services. We opened two optical shops, each designed to enhance the care we can provide to children and families by offering eyeglasses and contact lenses.

We hope to continue our growth trajectory in surgical services and have launched a hybrid operating room project on the main campus to build a state-of-the-art, minimally invasive suite for cardiac catheterization and other procedures. We continue to aggressively pursue our vision to bring the very best surgical care to the children of the region while simultaneously pursuing our two other core missions: research and education.

This past year, we continued to build on our close-to-home strategy, providing the right care at the right time as close as possible to our patients' homes, and we have been successful in bringing our expert care to new regions. In Fairfield County, clinics are now offered in Danbury, Fairfield, Shelton, and Westport. The specialties that now provide care in these areas include pediatric cardiology, pediatric plastic surgery, pediatric orthopedics and sports medicine, pediatric otolaryngology, pediatric surgery, and pediatric urology. Additionally, to reach the children of northern Connecticut and western Massachusetts, we increased the number of surgical services in our South Hadley office to include pediatric cardiology, pediatric neurosurgery, and pediatric otolaryngology. Through all of these expansions, we are making Connecticut Children's expertise more accessible to our patients and their families.

Some specific highlights from the past year:

Innovation through research is integral to the mission of the department. Prior to her departure in early 2022, Jun Chen, Manager for Center for Innovation. She was working diligently on creating an infrastructure to support strategic partnerships and investors as well as to develop our language related to patents and intellectual property. One such innovative project is led by Markus Bookland, MD, who has developed an app to measure head shape in children. Moving ahead, our research and innovation efforts will continue to focus on the following areas: inflammation biology, regenerative medicine, rare diseases, oncology, and health services.

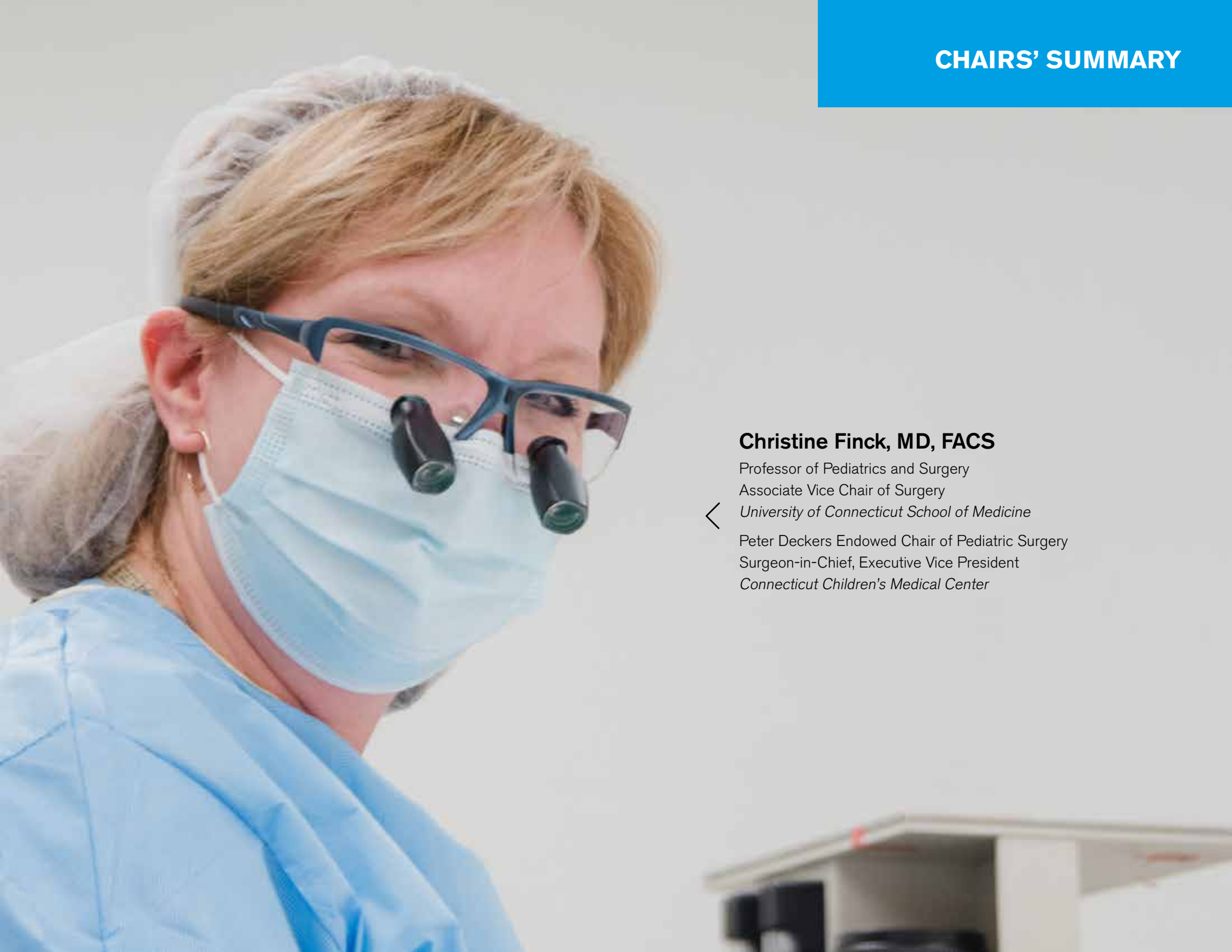
Education of the next generation of pediatric surgery specialists is another core mission of the department. Annually, dozens of students and residents from the University of Connecticut, Quinnipiac University, and other institutions receive their required pediatric subspecialty surgery training at Connecticut Children's. Pediatric Otolaryngology, which earned full ACGME accreditation for a fellowship in 2019, has begun the process of recruitment, and Pediatric Neurosurgery now serves as the site for the newly implemented neurosurgical residency at the University of Connecticut. We are recruiting a candidate for our new pediatric cardiology fellowship.

As we continue to expand our services in Connecticut and champion innovation and education, we remain focused on providing the highest quality, state-of-the-art care for children of the region. Our goal is to provide the best surgical experience as close to home as possible for our pediatric patients and their families.

Sincerely,

Christine Finck, MD, FACS

CHAIRS' SUMMARY



Christine Finck, MD, FACS

Professor of Pediatrics and Surgery
Associate Vice Chair of Surgery
University of Connecticut School of Medicine

Peter Deckers Endowed Chair of Pediatric Surgery
Surgeon-in-Chief, Executive Vice President
Connecticut Children's Medical Center

CHAIRS' SUMMARY

Juan C. Salazar, MD, MPH, FAAP

Professor and Chair, Department of Pediatrics
University of Connecticut School of Medicine

Executive Vice President of Academic Affairs
Physician-in-Chief
Connecticut Children's Medical Center

Dear Colleagues and Friends,

It is with great joy that we present the combined 2021 Annual Academic Report for the Departments of Pediatrics and Pediatric Surgical Subspecialties and share with you the remarkable accomplishments and achievements of our staff during a year when we celebrated the 25th anniversary of the founding of Connecticut Children's. As was true in 2020, the year 2021 was filled with tremendous challenges related to the COVID-19 pandemic; and as was true in 2020, our faculty met these challenges with courage, strength, and compassion for our patients.

A significant feature of 2021 was the Centers for Disease Control approval of COVID-19 vaccines. These vaccines received preliminary approval during the winter months and began to be administered to elderly and immunocompromised patients shortly thereafter. During the summer and fall, preliminary approval was granted for children over the age of 12 to receive the vaccine. Our staff responded with speed and efficiency, organizing and staffing clinics for our adolescent and teenaged patients. The leadership of our physician, nursing, pharmacy, and advanced practice provider teams ensured that these clinics were a tremendous success. I will always remember seeing our patients queuing up to receive their doses with their parents beside them, feeling a sense of relief that they would have greater protection from this terrible disease. As fall turned to winter, approval was granted for patients ages 5 to 11 years old, and our team again rose to meet this need on behalf of the children we serve. Additional clinics were set up at Dunkin' Donuts Park in Hartford and the Field House at Staples High School in Westport, and our organization continued to work alongside local and regional partners to ensure children had easy access to these lifesaving medicines. Connecticut led the nation in vaccinations, a point of great pride for our state.

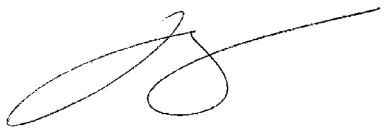
One of 2021's great achievements was the successful application by Connecticut Children's and our Office for Community Child Health (OCCH) for five-year $30 million Promise Neighborhoods grant to create the North Hartford Ascend Pipeline, an initiative led by Paul H. Dworkin, MD, and the City of Hartford to support families in Hartford's North End with medical care, educational assistance, and career-readiness training. In collaboration with our local partners, including Hartford Public Schools and the United Way, the five-year total grant support amounts to $66 million. This money and these programs will have a life-changing effect on children and families in Hartford, and we look forward to achieving transformative outcomes with our community allies.

Our physicians, faculty, researchers, and administrative staff achieved significant distinctions in 2021 with remarkable accomplishments across all areas. We were fortunate to add 24 new faculty members, including 19 pediatricians and five pediatric surgeons. In addition, *U.S. News & World Report* again ranked Connecticut Children's as a top children's hospital in the nation for 2020-21, and named our Pediatric Orthopedics program the best in Connecticut. Five of our subspecialties ranked in the Top 50 programs nationally: Pediatric Diabetes & Endocrinology, Gastroenterology & GI Surgery, Neonatology, Orthopedics, and Urology. These recognitions are a testament to the remarkable work being done by our clinicians and staff.

Throughout the year, as we reflected upon the leaders, clinicians, and supporters who have been a part of the Connecticut Children's team over the last 25 years, we took time to celebrate our institution's rich and vibrant past. At the same time, we took steps toward an ideal of diversity and inclusion to ensure that our faculty, students, and staff feel welcome and valued while best representing the communities we serve.

It has been an honor and a privilege to serve, once again, alongside the exceedingly talented team at Connecticut Children's, and to support, applaud, and participate in the efforts that define our institution's success. Connecticut Children's would not be in a position for continued growth and success without the leadership and generous support of our dean, Bruce T. Liang, MD, and the ongoing support of our Executive Management Team, led by Jim Shmerling and our Board of Directors. We know they share our immense pride in celebrating the exceptional achievements of 2021.

Sincerely,



Juan C. Salazar, MD, MPH, FAAP

THIS YEAR'S HIGHLIGHTS

The year 2021 was defined by extraordinary challenges – some of the toughest in the history of Connecticut Children's – but our staff stepped up and held steady, providing expert pediatric care for the patients and families we serve while simultaneously delivering advances and notable achievements in education, research, advocacy, and community service. The pages that follow detail some of the highlights of a remarkable year.

2021 A YEAR OF UNPRECEDENTED CHALLENGES

In 2021, Connecticut Children's celebrated 25 years of providing expert, compassionate care to pediatric patients and their families. The milestone was marked amid the turmoil of a second year of the global COVID-19 pandemic and unprecedented patient surges that were caused not only by the virus but by a spike in behavioral and mental health care cases that reached record levels.

Our staff soldiered through a period that will go down as one of the greatest tests in our institution's history. With selflessness, creativity and sheer grit, they provided expert care for our patients and their families; created new systems, protocols, and resources in response to the pandemic and patient surges; and volunteered extra time to staff vaccine clinics for our patients and the community. Our physicians, nurses, and providers were, in the words of Senior Vice President of Clinical Services and Chief Nursing Officer Sarah Matney, "the champions and warriors our patients and families were counting on." While managing the steep challenges of 2021 would have been enough of an achievement for the year, our staff went further, notching up significant accomplishments across many categories. Their efforts put Connecticut Children's in the regional and national spotlight, and expanded the reach of our pediatric subspecialty care to patients and families as far as western Connecticut, the Hudson Valley region of New York and western Massachusetts.

In the end, 2021 will be remembered not just for the extreme challenges brought by the pandemic and the rise in behavioral and mental health care cases, but for the remarkable teamwork and individual efforts that culminated in an anniversary year that set new levels of achievement for Connecticut Children's.

25 YEARS OF SERVICE

When Connecticut Children's first opened its doors on April 2, 1996, it was the only freestanding hospital in the state of Connecticut devoted to the care and well-being of children. While it remains the state's only dedicated pediatric health system, Connecticut Children's has grown into a health network of 41 locations across three different states – Connecticut, Massachusetts, and New York – with more than 200 highly skilled physicians providing care in 30 pediatric specialties. With our reach, we can proudly uphold our mission of providing the right care at the right time as close to home as possible.

THE ONGOING COVID PANDEMIC

In the throes of the second year of the global COVID-19 pandemic, Connecticut Children's formed an **internal surge team** to contend with patient surges caused by the Delta variant along with a sharp rise in behavioral and mental health cases.

As the Delta numbers rose, we joined with 65 children's hospitals across the nation in urging the American public and leaders in the public and private sectors to protect children. The **"Protect Our Children"** statement appeared in late August in the *New York Times* and the *Los Angeles Times*. The official statement, signed by Connecticut Children's President and CEO Jim Shmerling, among many others, represented the largest public show of force ever advanced by children's hospitals in the United States and asked all individuals to take precautions in support of keeping children healthy and safe.

In spring, as a Pfizer-BioNTech vaccine was approved for children ages 12 to 15 years, Connecticut Children's and Hartford HealthCare partnered to improve access to the vaccine for families across the region through our **Pediatirc Care Alliance Vaccine Clinics**. As parents considered vaccines for their children, Connecticut Children's created **resources to provide guidance**. Physician-in-Chief Juan C. Salazar, MD, MPH, FAAP, created a blog post outlining everything parents need to know about the COVID-19 vaccine, its testing process for children, and its overall effectiveness. Connecticut Children's staff also created a ***Next Normal Kit*** featuring everything from pediatric vaccine FAQs to summer travel advice. On several weekends in August and September, volunteers from Connecticut Children's, the University of Connecticut, the City of Hartford, the United Way, and Trinity Health of New England participated in a **door-to-door vaccination effort** for Hartford residents.

As COVID-19 began easing its grip in early fall and vaccines became available for children of various age ranges, Connecticut Children's continued its series of *Next Normal* communications in posts on topics ranging from "How to Cope With Your Child's Anxiety When Social Distancing Ends" to "8 Mental Health Tips for Parents" to "Return to Play Safely: Athletes Need 6 Weeks to Get in Shape." This was in addition to our biweekly ***Ask the Experts*** series. Led by John Schreiber, MD, MPH, Connecticut Children's interim division head of Infectious Diseases, it provides our staff and the wider community with the most up-to-date information about COVID-19 and the vaccine. For children afflicted with ongoing signs and symptoms associated with COVID-19 infections, Connecticut Children's also launched in September a **COVID-19 Long Haul Clinic** specifically designed to help providers and patients navigate this new territory.

In November, following the U.S. Food and Drug Administration's emergency approval of the Pfizer-BioNTech pediatric COVID **vaccine for 5 to 11 year olds**, Connecticut Children's Pediatric Care Alliance with Hartford HealthCare established vaccine clinics for children in that age group at several locations across the state. Additional community clinics were set up at Dunkin' Donuts Park in Hartford and the Field House at Staples High School in Westport.

A MENTAL HEALTH PANDEMIC

Pediatric behavioral health cases registered new highs on a national level in 2021, fueled in part by the COVID-inspired shift to remote and hybrid learning, dependence on screen time, and increased use of social media. To address this dramatic surge, Connecticut Children's took a number of steps. Among them, we addressed the personnel gap, with **17 new staffers hired** and three **advanced practice practitioners** (APPs) assigned to behavioral health in the Emergency Department. We made targeted efforts to improve information and resources available to parents and caregivers. Members of the Connecticut Children's staff also communicated throughout the year with state and local legislative representatives to reinforce the urgent need to find innovative solutions to expand access to mental health care for children and their families. Connecticut Children's and the Connecticut Children's Care Network also joined **CTHealthLink**, the Connecticut State Medical Society's health information exchange. Finally, in partnership with the Village for Children and Families, Connecticut Children's implemented the final phase of a **Certified Community Behavioral Health Substance Abuse and Mental Health Services Administration grant**. The goal is to provide support to community children who are struggling with behavioral health issues, thereby reducing the need for emergency room treatment.

OUR COMMUNITY EXPANDS

In early 2021, **Connecticut Children's** and **Nuvance Health** combined forces to make it easier for parents to get the care they need for their children in western Connecticut and New York's Hudson Valley. The alliance connects patients, their caregivers, and providers in the Nuvance Health hospitals' neonatal intensive care units (NICUs), birth centers, emergency departments, and pediatric in-patient units with specialists and clinicians from Connecticut Children's.

In June, Connecticut Children's partnered with Women's Health Connecticut, the state's largest collaborative network of Ob/Gyn providers, based in Avon, to create a **Women's After-Hours Care & Pediatric Urgent Care Center** at 599 Farmington Avenue, Farmington. The innovative partnership is the first step in a new strategy to reimagine family centered care by offering one location for women and children to receive health care in a coordinated, seamless and welcoming space. Pediatric services offered at Connecticut Children's Urgent Care clinic are now joined by Women's Health's full range of after-hours Ob/Gyn services for all women, including those with children, soon-to-be moms, and women without children.

In a watershed achievement for Connecticut Children's and its Office for Community Child Health (OCCH), the U.S. Department of Education awarded a five-year $30 million grant designed to support programs and innovations that break the cycle of poverty and violence for children and families in three previously designated neighborhoods of north Hartford. The grant for the City of Hartford will be administered by Connecticut Children's, and it funds a five-year, multi-partner, cross-sector effort that is part of the national **Promise Neighborhoods** program.

It was one of only seven grants awarded in 2021. In addition to the $30 million grant, partners involved in the project plan to contribute $36 million in matching funds over the five-year period, bringing the total investment in north Hartford to $66 million. Paul Dworkin, MD, founder and executive vice president of OCCH, spearheaded the application process for the grant.

Finally, Jim Shmerling, Connecticut Children's president and CEO, was appointed in April to the **Hartford Board of Education**. He will play a critical role in breaking barriers for students in the Hartford Public School system.

DIVERSITY, EQUITY & INCLUSION

In 2020, Connecticut Children's made a commitment to explore and enhance diversity, equity and inclusion in our workplace. A Connecticut Children's team, led by senior vice president of Human Resources and Chief Diversity Officer Larry Milan, began by conducting focus groups and an organization-wide **culture audit and assessment**. The hospital created an action plan with resources and activities designed to ensure that Connecticut Children's is a place where all individuals including staff members, patients, community members, vendors and contractors are treated with dignity and respect.

Among the DEI highlights in 2021: Connecticut Children's created a **dedicated webpage** to provide a broad array of resources – from our formal commitments to diversity, equity and inclusion to a list of ongoing seminars and discussions intended to foster awareness and participation in special events. On April 9, 2021, Connecticut Children's Office of Continuing Medical Education (CME) hosted an inaugural half-day virtual event, the **Diversity, Equity & Inclusion Symposium**, for medical professionals and community partners. An ongoing **DEI Speaker Series** was introduced to provide opportunities for prominent Connecticut residents to share their experiences overcoming racism, discrimination, and bias, and offer insights. **Pediatric Grand Rounds** lectures featured several topics that focused on health disparities and the impact of racism on health outcomes. July brought the release of a **Best Practices for Inclusive Language Guide**, helping to foster a welcoming and inclusive culture. In September, a **Diversity, Equity & Inclusion Declaration** was issued organization-wide, outlining the ways in which Connecticut Children's is committed to DEI.

HONORS & AWARDS

We are honored to say that Connecticut Children's once again was named one of the best pediatric hospitals in the country by *U.S. News & World Report*. Five of our divisions, Pediatric Diabetes and Endocrinology, Gastroenterology and GI Surgery, Neonatology, Pediatric Orthopedics, and Urology, were ranked among the top 50 in the nation. Our Pediatric Orthopedics division was also recognized as the top pediatrics orthopedics program in the state of Connecticut.

Connecticut Children's was named a Best Children's Hospital for the fifth consecutive year by the **Women's Choice Award®**, America's trusted referral source for the best in health care. Connecticut Children's was recognized as a hospital that has met the highest standards for pediatric care. Additionally, Connecticut Children's earned the **Best Children's Emergency Care Award** for receiving a perfect score for the level of care and expertise offered in our Emergency Department.

Connecticut Children's received the **American Heart Association's Get With the Guidelines®-Resuscitation Award (Gold)** for our commitment to prioritizing quality care for cardiac arrest, neonate and pediatric patients.

For the fifth consecutive year, the College of Healthcare Information Management Executives (CHIME) named Connecticut Children's a **Digital Health Most Wired hospital**. Connecticut Children's joins only 5 percent of hospitals nationwide to receive this designation.

CLINICAL ACHIEVEMENTS

Connecticut Children's was verified by the American College of Surgeons as **the state's first Level I Children's Surgery Center**, and one of only two Level I Children's Surgery Centers in New England.

Connecticut Children's Center of Procedural Excellence (CoPE) was named a **Sedation Center of Excellence** by the Society for Pediatric Sedation. The designation covers a four-year period from 2020 to 2024.

In September, The National Pediatric Cancer Foundation named Connecticut Children's the recipient of a $50,000 Site Excellence Award recognizing the **top three performing hospitals in pediatric oncology clinical trials** through the Sunshine Project Consortium. The organization also recognized Michael Isakoff, MD, clinical director of Connecticut Children's Center for Cancer and Blood Disorders, for his leadership in the field of cancer clinical trials and his efforts to improve outcomes for children diagnosed and living with pediatric cancers.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NEWS

Connecticut Children's was also named a **Gold Level Center of Excellence** by the Extracorporeal Life Support Organization (ELSO) in recognition of our critical care services, life support equipment and training. This is the first time Connecticut Children's has received the gold level designation. We are one of just a few national and international centers awarded for 2021 through 2023.

Baby's First Test, the nation's newborn screening education resource center for families and health professionals, named the Connecticut Newborn Diagnosis and Treatment Network at Connecticut Children's an inaugural recipient of the **Generating Real Action by Cultivating Engagement (GRACE) Award**. The statewide network, led by Karen Rubin, MD, responds to all reports of infants who have a newborn screen that is flagged as out of range by performing follow-up testing and diagnosis.

The Antimicrobial Stewardship Program (ASP) at Connecticut Children's launched the **Firstline Clinical Decisions Antimicrobial App**, a free reference for antimicrobial prescribing. The development process for the app was led by Jennifer Girotto, PharmD, and Ilana Waynik, MD. Also available on the app are Connecticut Children's clinical pathways that deal with infectious diseases.

In 2021, Connecticut Children's launched **four new clinical pathways**. Diabetes Insipidus (DI) Post-operative Neurosurgical Management; Suspected Sexual Abuse; and two pathways introduced by Grace Hong, APRN, and the Infectious Diseases team following the FDA's expansion of its Emergency Use Authorization (EUA) for bamlanivimab-etesevimab monoclonal antibody infusion for both the treatment and post-exposure prophylaxis of all age groups who are at high risk for developing severe COVID infection, hospitalization, or death.

EDUCATION & OUTREACH

Connecticut Children's **Continuing Medical Education (CME) portfolio increased by 20 percent** year over year, with 69 available conferences, the largest to date that the office has ever accredited. Our **Maintenance of Certification (MOC) Part 2 offerings** increased by 30 percent in 2021, with 25 conferences offering MOC Part 2

credit and a 72 percent increase of enduring materials with 18 conferences offering that option for remote learners. Our office's joint providership efforts also continued to grow. For 2022, Connecticut Children's CME office became the accreditor for the 2021 Children's Hospital Neonatal Consortium (CHNC) Annual Conference, International Lactation Consult Association (ILCA) Annual Conference, and Step 2 Education International Inc: Breastfeeding Essentials for Physicians online modules. Our Traveling Grand Rounds Speaker Bureau increased its speakers by 8 percent over the last academic calendar year, and all area hospital calendars were booked as early as July 31, 2021, another new record for the office.

Nicole Capsolas, CME coordinator III, and CME manager Liz Anderson, BS, CHCP, hosted a session entitled **"CME Metrics"** at the Annual Accreditation Council for Continuing Medical Education (ACCME) spring conference. The event had the highest attendance of the peer-to-peer sessions with more than 100 participants, and it received a 100 percent poll score for its helpfulness.

The Maintenance of Certification program rolled out an updated website showcasing a new digital app for submissions. Connecticut Children's CME office is portfolio sponsor for 16 available American Board of Pediatrics projects and two available American Board of Medical Specialties (ABMS) projects. In October, we submitted and were approved for our first ABMS project.

On Sept. 28, Connecticut Children's CME office kicked off an educational program for pediatric health-care professionals and providers within our health system and across the region. The **Continuing Medical Education 2021-2022 Virtual Interactive Workshop Series**, which included the Andrulonis Child Mental Health Lecture Series and Pediatric Evening Lecture Series, featured four Zoom lectures focused on a variety of medical and mental health topics.

The Pediatric Residency Program progressed with its uninterrupted record of full, continuing accreditation, with no areas of concern or citations from the Pediatric Review Committee of the Accreditation Council for Graduate Medical Education (ACGME). This represents **one of the strongest records of accreditation standing in the nation**. Additionally, the program's first-attempt pass rate on the American Board of Pediatrics certifying examination increased once again to 93 percent (national average 87 percent) and above many other premier residency programs in the region.

RESEARCH

In 2021, Connecticut Children's inaugurated the **Connecticut Children's Research Institute (CCRI)** – dedicated to discovery, inquiry, and curiosity – to become a pre-eminent academic children's hospital by achieving nationally renowned excellence in research and clinical breakthroughs. The CCRI stands upon the pillars of our expertise in basic and translational research, population health and outcomes, and clinical research, and represents a new emphasis on growing our infrastructure in precision medicine. On Nov. 1, 2021, the CCRI hosted its **Inaugural Research Symposium**. The event was an opportunity for faculty and staff to share their research, contribute to the development and planning of the CCRI, and learn more about its vision for the future. As one of the nation's leading recipients of federal funding for research, Connecticut Children's and its physician-researchers participate in and lead numerous national research trials, including important COVID-19 research about early detection, diagnosis and treatment of multisystem inflammatory syndrome in children (MIS-C), a rare and potentially life-threatening pediatric condition linked to COVID-19.

GRANTS

David Hersh, MD, was awarded a $26,750 Early Career Award from the **Thrasher Research Fund** to support research regarding therapeutic strategies for mitigating the resorption process following cranioplasty.

Jeffrey Hyams, MD, head of the Division of Digestive Diseases, Hepatology, and Nutrition, was awarded a $250,000 grant from the **David and Geri Epstein Private Foundation**. Funding will support the efforts of Dr. Hyams and his team to pursue initial research exploring the serological response to COVID-19 in children, adolescents and young adults receiving biologic therapies for inflammatory bowel disease. Dr. Hyams is also a co-principal investigator on a multicenter, multimillion-dollar **NIH-funded study** examining the clinical and biological predictors of response to certain biologic medications in children newly diagnosed with Crohn's disease.

Michael Isakoff, MD, was awarded a $75,000 grant from **Lea's Foundation for Leukemia Research Inc.** to support leukemia research and clinical trials at Connecticut Children's Center for Cancer and Blood Disorders.

Siddika Mulchan, PsyD, and **William T. Zempsky, MD, MPH**, head of the Division of Pain and Palliative Medicine, were awarded a $47,000 grant from the Carl DuPre Fund at the **Hartford Foundation for Public Giving** to support their project, "Examining the Efficacy of a Health Care Provider-Focused Intervention Targeting Implicit Bias in Pediatric Sickle Cell Disease."

Steven C. Rogers, MD, MS-CTR, was awarded a $250,000 grant from the **David and Geri Epstein Private Foundation**. Funding supports Dr. Rogers and the behavioral health team as they continue to strengthen the continuum of care provided to pediatric behavioral health patients.

Karen Rubin, MD, received a $75,000 grant from the **Children's Fund of Connecticut, Inc./Child Health and Development Institute** to support her project, "Expanding Behavioral Health Services in Primary Care Through Implementation of a Learning Community and Co-Management."

Physician-in-Chief **Juan C. Salazar, MD**, continues his National Institutes of Health (NIH)-funded research on multisystem inflammatory syndrome in children (MIS-C). He was one of only eight awardees nationwide to receive this grant from the NIH.

William T. Zempsky, MD, MPH, head of the Division of Pain and Palliative Medicine, was awarded a $99,000 grant from the Mayday Fund to support his continued efforts to develop a pathway for pediatric residency graduates to receive training and board certification in pain medicine.

INDIVIDUAL HONORS & ACHIEVEMENTS

Work by neurosurgeon **Markus Bookland, MD**, to develop a smartphone-based platform for image analysis was featured on the cover of the *Journal of Neurosurgery: Pediatrics* in May of 2021. The application aids with both diagnosis and quantification of cranial deformity, and has been critical to the success of telemedicine efforts in the Neurosurgery division. Dr. Bookland was also awarded proof-of-concept funding for his research work on pediatric cranial deformities.

Brendan Campbell, MD, MPH, FACS, FAAP, successfully led Connecticut Children's through the reverification process to maintain Connecticut Children's status as a Level I Pediatric Trauma Center. He assumed the role of medical director for the Division of Pediatric Surgery, replacing **Richard Weiss, MD**, who stepped down to dedicate his efforts to expanding Connecticut Children's presence in the Fairfield County region. In June, Dr. Campbell was honored by the University of Connecticut Integrated General Surgery Residency Program, which presented him with the Joseph M. Civetta Best Faculty Teacher Award "in recognition for outstanding contributions to Surgical Resident Education" for the second year in a row.

Christopher Carroll, MD, is the 2021 recipient of both a Presidential Citation and Distinguished Service Award from the American College of Chest Physicians.

Orthopedic surgeon **Sonia Chaudhry, MD**, was elected to the American Society for Surgery of the Hand (ASSH) Young Leader's Council.

Andrew Carlson, MD, received Connecticut Children's Douglas H. MacGilpin Community Physician Award for serving as an outstanding role model. He also was recipient of the Faculty Excellence in Teaching Award.

Melanie Sue Collins, MD, took on a new role as medical director of the Division of Pediatric Pulmonology.

Allison Cowl, MD, was named medical director of the Pediatric Intensive Care Unit (PICU).

Dr. Jennifer Downs, MD, assumed the role of division head of Pediatric Psychiatry.

Surgeon-in-Chief **Christine Finck, MD, FACS**, received a grant from the American Society for Metabolic and Bariatric Surgery (ASMBS) Foundation for her research on the evaluation of increased susceptibility of obese pediatric patients to SARS CoV-2 infection. She also presented her abstract "Development of a Multi-institutional Registry of Long Gap Esophageal Atresia" at the American Academic of Pediatrics 2021 National Conference. Together with Nicole Murray, MD, head of the Center for Airway, Voice & Swallowing, Dr. Finck co-chaired Connecticut Children's Personal Protective Equipment (PPE) Task Force. In addition to sourcing and procuring PPE for our staff, they developed protocols for the use and reprocessing of N95 masks and other PPE. In an example of the kind of innovation that has been on display throughout the pandemic, the bioprinter that is essential for tissue engineering in Dr. Finck's laboratory was repurposed to create face shields. Drs. Murray and Finck worked closely with **William Lee, Jr.**, director of the Supply Chain, and his team, and also with **Mike Tortora**, Connecticut Children's director of Safety & Security.

Patricia Garcia, MD, was selected by the 2021 Pediatric Residency graduating class as the recipient of the Outstanding Contributions to Education and Career Development Award.

Jennifer E. Girotto, PharmD, was granted a promotion by the Board of Trustees to the position of clinical professor at the School of Pharmacy at UConn.

Christopher Grindle, MD, took on the role of medical director for the Division of Otolaryngology – Head and Neck Surgery.

Neonatologist **James Hagadorn, MD**, was elected to serve a two-year term as chair of the pediatric subcommittee for the Eunice Kennedy Shriver National Institute for Child Health and Human Development.

Taryn J. Hamre, DNP, APRN, FNP-BC, of the Division of Pain and Palliative Medicine, was one of three winners of the statewide 2021 Nightingale Award in recognition of her excellence in nursing and an outstanding commitment to her profession.

Kelly Hawley, PhD, had a first author publication, "Structural Modeling of the Treponema Pallidum Outer Membrane Protein Repertoire," published in and featured on the front cover.

of the prestigious *Journal of Bacteriology*. This important paper is an attempt to build a roadmap to the development of a syphilis vaccine.

The 2021 Pediatric Residency Excellence in Teaching in an Affiliated Pediatric Field Award was presented to **David Hersh, MD**.

Naveed Hussain, MD, the Connecticut Children's Center for Global Health, and our partners at the NICE Foundation were awarded International Community Access to Child Health (ICATCH) Funding from the American Academy of Pediatrics for their proposal Traditional Birth Attendant Training Program for Remote Tribal Villages.

Jeffrey Hyams, MD, head of the division of Gastroenterology at Connecticut Children's and the Mandell Braunstein Endowed Chair in Pediatric IBD, was named Humanitarian of the Year by the Connecticut/Westchester chapter of the Crohn's and Colitis Foundation.

Kathy Kalkbrenner, MD, FAAP, relinquished the role of clinical director for the Division of Hospital Medicine (PHM) and was succeeded by **Allyson McDermott, MD**, a graduate of the Connecticut Children's PHM Fellowship program and a member of the national PHM Fellowship Director's Council.

Garry Lapidus, PA-C, MPH, was appointed to the Board of Scientific Counselors at the National Center for Injury Prevention and Control (NCIPC).

Ching Lau, MD, was named the first scientific director of the Center for Cancer and Blood Disorders at Connecticut Children's. Dr. Lau handed over the role of division head of Hematology-Oncology to **Michael Isakoff, MD**, who is also the division's clinical director, a professor of Pediatrics, and the Whaler Endowed Chair.

Lisa Marella, director of Organizational Effectiveness, played a vital role in the personal and professional development of our faculty during 2021. She helped to lead the Pediatric Women Relate (PoWER) and Women in Surgery (WIS) groups on behalf of our female faculty, and partnered closely with **Rebecca Moles, MD**, and **Hayley Wolfgruber, MD**, in support of the Office of Faculty Development. This work included the Transition into Practice (TiP) program, a new effort led by Dr. Moles and Ms. Marella to support our junior faculty during their first years of practice.

Division head of Critical Care **Elliot Melendez, MD**, received the 2021 Pediatric Residency Excellence in Teaching in Acute Care Award.

In March, **James Moore, MD, PhD**, was named president of Connecticut Children's Specialty Group.

Dr. Moore and **William Zempsky, MD**, were installed on September 29, 2021 as the inaugural holders of two endowed chairs. Dr. Moore is the first Ross Mayer Endowed Chair for Neonatal Intensive Care. The funding will help enhance resources and services under Dr. Moore's direction across the NICUs and delivery units. Dr. Zempsky is the Francine L. and Robert B. Goldfarb-William T. Zempsky, MD, Endowed Chair for Pain and Palliative Medicine. It is among only a handful of endowed chairs in pain and palliative medicine in the country and will support both care and investments in research.

The Division of Endocrinology and Diabetes updated key leadership positions with **Rebecca Riba-Wolman, MD**, appointed head of both the Glycogen Storage Disease and Disorders of Hypoglycemia programs, and **Cem Demirci, MD**, as clinical director for the division.

Steven Rogers, MD, medical director of Emergency Behavioral Health Services, received a 2020 Special Achievement Award from the American Academy of Pediatrics, recognizing his leadership and work on suicide screening and prevention.

Courtney Rowe, MD, took up the role of interim division head of Urology following the departure of **Carlos Medina, MD**. She received the Growth and Gratitude Award from the University of St. Joseph in West Hartford, CT, for her leadership during the pandemic, and a presidential citation from the Society of Pediatric Urology for her advocacy work. Dr. Rowe's translational research in urethral healing was awarded NIH Loan Repayment Program support and was accepted to the Early Career Investigators Workshop run by the American Urologic Association. Work in Dr. Rowe's lab on urethral healing also produced one preliminary patent and multiple abstract presentations at national and local meetings. The lab's collaboration with the University of Connecticut on post-surgical pain also progressed to a preliminary patent with the support of William Zempsky, MD.

Olga Toro-Salazar, MD, was accepted to the Accelerator for Biosciences in Connecticut (ABCT) program. She and **Tze Chiam, PhD**, will participate as one of nine emerging biosciences ventures in a program that runs for just over six months. It features business education and entrepreneurship coaching toward a goal of developing fundable business plans and a professional network. This exciting opportunity represents the present and future of research at Connecticut Children's.

Melissa Santos, PhD, was named the head of the Division of Pediatric Psychology. She also was elected president of the Society of Pediatric Psychology.

In December, **Christine Skurkis, MD**, assumed the role of interim director for the pediatric residency program at Connecticut Children's.

After 25 years as division head of Orthopedics, **Jeffrey Thomson, MD**, stepped down to focus solely on patient care. **Mark Lee, MD**, took on the role of division head in December.

Shailendra Upadhyay, MD, received the 2021 Mended Hearts Cardiologist of the Year Award for the Northeast region. He was appointed as a medical advisory board member for the Adult Congenital Heart Association (ACHA). Dr. Upadhyay also was recognized by the American Association of Physicians of Indian Origin (AAPI) for his contributions in pediatrics and has been included as a member of the AAPI distinguished speakers club.

Julie Vigil, MS, MPH, FACHE, CHC, CHRC, was promoted to administrative director of the Department of Pediatrics at UConn Health.

Danielle Warren-Dias was awarded the 2021 Trailblazer Award during a December 1, 2021, Connecticut World AIDS Day Commemoration. Ms. Warren-Dias is the program coordinator for family support services at the UConn Health/Connecticut Children's Pediatric & Youth HIV Program.

On September 30, 2021, **Edwin Zalneraitis, MD**, retired from his roles as professor of pediatrics and director of the Pediatric Residency Program. "Dr. Z" achieved national recognition as a pioneer in graduate and undergraduate pediatric medical education. He continues at Connecticut Children's as a special advisor to the Department of Pediatrics Chair, Juan C. Salazar, MD, and as an attending neurologist. Under Dr. Zalneraitis' leadership, more than 600 residents and fellows graduated from our pediatric residency and fellowship training programs. Over the course of his career, Dr. Z also oversaw pediatric training for more than 3,000 UConn medical students. In recognition of his contributions, Dr. Zalneraitis was honored with the Leon Chameides Award for Lifetime Achievement.

The 2021 **Angel Awards** went to Pam Masella, MA, Orthopedics; Raul Vasquez, MA, Hematology-Oncology; Lucy Weidner, PCA, float pool; James Wiggins, medical support services, equipment depot; and Carmen Williams, PCA, MS7. The five winners were chosen for continually demonstrating excellence in their areas of responsibility.

For the first time, Connecticut Children's Office of Advanced Practice Providers (OAPP) established annual **APP Excellence Awards**. The three awards recognize select APPs for embodying Connecticut Children's values in their clinical practice and interaction with patients and team members. The inaugural winners were **Grace Hong, APRN**, in the Division of Infectious Diseases, **Kate Steven, CPNP**, Division of Hematology-Oncology, and **Jill Sullivan, PA-C**, Divisions of Cardiology and Cardiac Surgery.

Physician-in-Chief Juan Salazar, MD, presented the **2021 Chair's Awards** to:

- **Barbara Edelheit, MD**, Chair's Award for Wellbeing
- **Lori Pelletier, PhD**, Chair's Award for Innovation
- **Francis DiMario, MD**, Chair's Award for Teaching
- **John Schreiber, MD**, Chair's Award for Citizenship
- **MacDara Tynan, MD**, Chair's Award for Citizenship
- **Cathy Wiley, MD**, Chair's Award for Citizenship

Dr. Salazar also congratulated **Anand Sekaran, MD**, on being selected by the *Hartford Business Journal* and *New Haven Biz* as their 2021 Healthcare Hero.

The **McNeill Teaching Award** was presented to Andrew Carlson, MD, Kenneth Banasiak, MD, Cem Demirci, MD, Trish Garcia, MD, Eileen Gillan, MD, Alex Golden, MD, Elliot Melendez, MD, Melanie Rudnick, MD, Cynthia Silva, MD, Keri Wallace, MD, Caleb Wassar, MD, and Hayley Wolfgruber, MD.

Two of our third-year residents, Margret Sigurdardottir Blondal and Lenora Codrington, received the **Capital Area Health Consortium's Community Service Award** for their exemplary volunteer service in the field of health care.

MEDIA

Jennifer Downs, MD, division head of Pediatric Psychiatry, and **Steven Rogers, MD**, medical director of Emergency Behavioral Health Services, spoke with the *CT Mirror* about the increasing behavioral health needs of children and how health systems like Connecticut Children's are addressing the problem when resources are not available. As pediatric cases of COVID-19 began to surge in summer, **John Schreiber, MD, MPH**, interim division head of Infectious Diseases, appeared on Fox 61 to address questions about the spike and the Delta variant.

On Aug. 24, 2021, pediatric psychologist **Bradley Jerson, PhD**, appeared on NBC CT in a back-to-school segment to share tips designed to help prepare children mentally and emotionally for their return to school. He also posted information on the Connecticut Children's blog as part of our digital *Back to School Kit*.

Pediatric hospitalist **Beth Natt, MD, MPH**, spoke with News 12 Connecticut regarding children masking in schools. She spoke about the protection provided by masks and offered tips to relieve any discomfort in wearing them.

A surge of patients at Connecticut Children's in early October prompted a flurry of local press coverage. **Jim Shmerling**, president and CEO of Connecticut Children's, was interviewed by the *Hartford Courant*, NBC Connecticut, Fox 61, and News 8 WTNH.

In advance of the rollout of vaccines for 5- to 11-year-olds, **Kelly Foy** and **Pat McLarney**, both child life education specialists at Connecticut Children's, shared with CNN Health some steps parents could take to help ease children's vaccine fears.

Ahead of the winter holiday season, Physician-in-Chief **Juan Salazar, MD**, spoke to the *New York Times* for an early November article entitled "How to Host Thanksgiving With Unvaccinated Friends and Family." The article also appeared on Boston.com.

Through Connecticut Children's Injury Prevention Center, **Brendan Campbell, MD, MPH**, pediatric surgeon and director of trauma at Connecticut Children's, spoke with *NBC Nightly News* about factors that may be contributing to the increase in pediatric gunshot injuries both nationally and in Hartford.

SPECIAL EVENTS

Connecticut Children's marked the date of its 25th anniversary on April 2, 2021, but because it coincided with Good Friday, the celebration took place on April 6. The

anniversary theme was **"Creating Our Future,"** and celebrations and special events continued throughout the year.

In February, Connecticut Children's hosted a virtual 2021 **IBD Symposium** for patients and families. The event, which provided a research and clinical update for patients and their families, featured Connecticut Children's medical experts Jeffrey Hyams, MD, Katherine Baldwin, MD, Victoria Grossi, DO, Brad Jerson, clinical psychology, and Kate Vance, RD.

At a December 1, 2021 news conference, Connecticut Children's unveiled the collaboration it has begun with **Disney** and **ESPN** to deliver comfort and inspiration to patients through interactive digital displays, murals, the latest Disney movies on a mobile movie theater, and more.

OTHER

The University of Connecticut's annual **HuskyTHON** raised $1,052,534 "for the kids" with approximately 3,000 students taking part in the virtual event. The total raised is the second-highest in the event's history.

Quinnipiac University's **QTHON 2021** was held in-person April 17 with COVID guidelines in place. The event raised $201,108 for Connecticut Children's.

PROMOTIONS

Connecticut Children's owes an ongoing debt of gratitude to **Francis DiMario, MD**, **Esperanza Lesmes** and **Brett Maddux** for their extraordinary work and contributions to the Department of Pediatrics promotion process.

Promotion to *Professor Emeritus*:

- Karen Rubin, MD
- Edwin Zalneraitis, MD

Promotion to Professor:

- Michael Isakoff, MD, professor of pediatrics, Division of Hematology-Oncology
- Jonathan Martin, MD, professor of surgery, Division of Neurosurgery
- Cliff O'Callahan, MD, professor of pediatrics, Middlesex Health Family Medicine
- Marianne Pappagallo, MD, professor of pediatrics, Division of Neonatal-Perinatal Medicine

Promotion to Associate Clinical Professor:

- Allison S. Cowl, MD, associate clinical professor of pediatrics, Division of Critical Care

Appointment to Associate Professor:

- Elliot Melendez, MD, associate professor of pediatrics, Division of Critical Care

Promotion to Associate Professor:

- Sonia Chaudhry, MD, associate professor of orthopedics, Division of Orthopedics
- Henry Chicaiza, MD, associate professor of pediatrics, Division of Emergency Medicine
- Nancy Dunbar, MD, MPH, associate professor of pediatrics, Division of Endocrinology & Diabetes
- Patricia Garcia, MD, MPH, associate professor of pediatrics, Division of Pediatric Hospitalist Medicine
- Christopher Grindle, MD, associate professor of surgery, ENT, Division of Otolaryngology
- Eric Hoppa, MD, associate professor of pediatrics, Division of Emergency Medicine
- Vincent Matt Laurich, MD, associate professor of pediatrics, Division of Emergency Medicine
- Jennifer Madan Cohen, MD, associate professor of pediatrics, Division of Neurology
- Grael O'Brien, MD, associate professor of pediatrics, Division of General Pediatrics, Burgdorf/Health Center, UConn

Promotion to Assistant Professor:

- Kelley Maynes, PsyD, child and adolescent/liaison psychiatry in the Division of Pain and Palliative Medicine
- Katherine A. Hinderer, PhD, nurse scientist at the Institute for Nursing Research and Evidence-Based Practice
- Jennifer Schwab, MD, Rocky Hill Pediatrics, Division Head of Community Pediatrics

PEDIATRIC SUBSPECIALTIES

ADOLESCENT MEDICINE

As a result of the pandemic, the Division of Adolescent Medicine evaluated more adolescents and young adults seeking care for eating disorders than at any previous time in our history.

SPECIALTY CARE

We continue to provide specialty care to adolescents and young adults ages 10 to 25 at our **Adolescent Medicine Clinic** in Farmington. Examples of our services include:

- **Eating Disorders:** Our medical providers evaluate the medical and nutritional status of patients, recommend levels of care, and collaborate with community therapists and dieticians to provide longitudinal care over time. We also prescribe psychotropic medications for the treatment of anxiety and depression, which are common co-morbid diagnoses in patients with eating disorders.
- **Contraception:** We offer all forms of hormonal contraception, including same-day insertions of IUDs and implants, for both the management of menstrual concerns and for contraception. We also provide non-surgical gynecologic care including Pap smears and sexually transmitted infection (STI) testing and treatment.
- **Menstrual disorders:** We treat a variety of menstrual disorders including abnormal uterine bleeding, dysmenorrhea, irregular menses, primary/secondary amenorrhea, and polycystic ovary syndrome (PCOS). In July 2021, we developed the Adolescent Bleeding & Clotting Disorders Clinic (ABC Clinic) with Hematology for the evaluation and management of females with possible or confirmed bleeding and clotting disorders that affect menstruation.

PRIMARY CARE

Division head Alyssa Bennett, MD, and Jessica MacCormac, DO, MS, continue to provide primary care services to adolescents and young adults ages 13 to 21 within Primary Care in East Hartford and Farmington.

EDUCATION

Educating future pediatricians and pediatric subspecialists is an essential part of our mission. University of Connecticut pediatric residents complete a four-week adolescent medicine rotation during their second year of training. The residents work with Connecticut Children's providers as well as our community clinical partners during their rotation. The Division of Adolescent Medicine greatly appreciates the time commitment and teaching contributions of the following clinical preceptors and their colleagues:

- **Sports Medicine, Farmington, CT:** Imran Hafeez, MD, and Allison Crepeau, MD
- **Westminster School, Simsbury, CT:** Davis Smith, MD, medical director
- **Institute of Living Adolescent Programs, Hartford, CT:** Victoria Urrutia, MD
- **Women's Ambulatory Health Services, Teen Clinic and Family Planning Clinic, Hartford, CT:** Sarah Lindsay, MD, and Sheila Flaum, DO

We also offer an adolescent medicine elective for fourth year medical students from the UConn School of Medicine and the Frank H. Netter MD School of Medicine at Quinnipiac University. Dr. MacCormac continues in her role as the clerkship director of Ambulatory Pediatrics at the UConn School of Medicine.

RESEARCH & GRANTS

Dr. Bennett continues her work with colleagues in the Division of Infectious Diseases on the Department of Public Health Integrated HIV Testing and PrEP Navigation Project.

STAFF

Alyssa Bennett, MD, *Division Head*

Jessica MacCormac, DO, MS
Miranda Mitchell, CPNP

BIOMEDICAL INFORMATICS

The Division of Biomedical Informatics' five board-certified physicians and two nurse practitioners marked 2021, the division's fifth anniversary, and the second year of the global COVID-19 pandemic, with a renewed focus on digital provider and patient engagement strategies, socio-technical solutions to promote health care equity, and informatics research and innovation.

Among division member's significant accomplishments this year: Andrew Heggland, MD, steered the introduction and evaluation of a cognitive computing model for improved pediatric sepsis detection to the Emergency Department. Chris Grindle, MD, directed the implementation and assessment of an automated artificial intelligence-enhanced EHR documentation system to reduce provider work burden and improve well-being. Jane Im, MD, guided the launch of electronic tools to reduce the incidence of pediatric delirium in the intensive care setting. Jessica Williams, MD, and Robin Bradshaw, APRN, partnered to lead expansion of patient-entered data into the EHR and determine effects on clinical efficiency and patient satisfaction. Division head Richelle deMayo, MD, CM, oversaw efforts to make large, on-demand, health information exchange-based clinical data sets broadly accessible for pediatric clinical research.

The division continued to prioritize the application of health information systems to reduce pediatric disparities in health care access, utilization and outcomes. Multiple members of the division are engaged in the iterative improvement of the collection and use of race, ethnicity and language data to identify and address health inequity issues. Several members of the division participate on the Connecticut Children's Social Determinants of Health Taskforce. The division is heavily invested in advancing Telehealth Equity and this year spearheaded the creation of a Digital Health Equity Toolkit of patient and provider resources. Drs. deMayo and Sharon Smith were awarded a Telehealth Equity Catalyst grant from the American Association of Medical Colleges to expand and evaluate a novel telehealth curriculum designed to develop competencies in pediatric residents, including knowledge and skills about reducing socio-cultural and economic barriers to telemedicine.

All members of the Division of Biomedical Informatics remain consistently focused on enhancing information systems across the care continuum from a patient safety and high reliability perspective. A Transfer MedRec quality improvement initiative reduced perioperative medication dosing errors by 50 percent over three months, with 88 percent of anesthesia providers rating the newly introduced tools as useful in preventing errors. Working closely with quality improvement and pharmacy experts, the Clinical Informatics-helmed multidisciplinary "AlertSpace" team examined drug safety events and ordering patterns throughout the medical center, implementing changes to achieve reductions in unnecessary alerts that undermine safety by contributing to alert fatigue. The team's electronic medication management successes were shared via presentations to academic and industry audiences through the American Academy of Pediatrics and First DataBank's Clinician Executive Advisory Board annual meetings.

From a scholarly perspective, members of the division continued to be highly productive, presenting their work at the American Academy of Pediatrics and American Medical Informatics Association meetings, authoring manuscripts, and publishing the findings of a multicenter study of the effects of telehealth usage on provider well-being. Simultaneously, division members amplified their commitment to informatics pedagogy, securing approval to offer a standing rotation in Clinical Informatics for graduate medical trainees. The division also hosted summer session and academic year longitudinal experiences for medical students. Multiple Pediatrics and Emergency Medicine residents took advantage of two- to four-week clinical rotations to immerse themselves in projects evaluating aspects of residency EHR education and optimizing documentation and ordering tools.

Biomedical Informatics is an intrinsically interdisciplinary and collaborative specialty. Informaticists work closely

with colleagues from every other academic division within the Department of Pediatrics, and with hospital and specialty group leadership. Beyond the walls of the medical center, the division's members regularly participate in policy work at state, regional and national levels. Dr. Im acts as a Clinical Advisory Committee member of the state's health information exchange. Dr. deMayo serves on the American Medical Informatics Association's Advancement of Health Equity and Antiracism in Healthcare Subcommittee and the American Telemedicine Association's Advisory Group on Using Telehealth to Eliminate Disparities and Inequities.

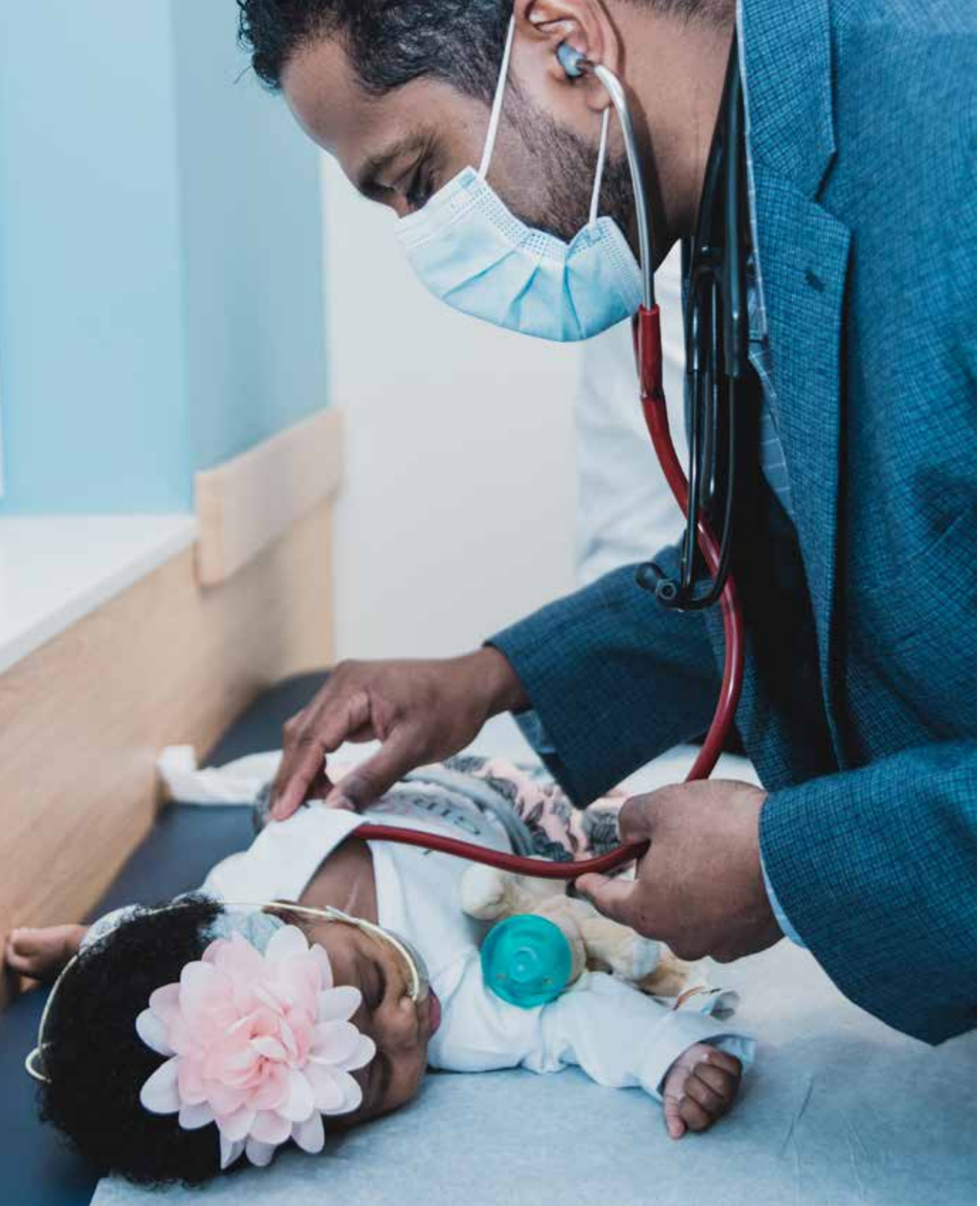
During the coming year, the members of the division will be busy implementing and optimizing electronic health systems in seven pediatric subspecialties. The year also promises further work on interoperability and information-sharing to support faculty members' pediatric health-care delivery over an increasing geographic footprint, and additional provisions of the federal 21st Cures Act that will take effect in 2022.

STAFF

Richelle deMayo, MD, CM, *Division Head*

Christopher Grindle, MD
Andrew Heggland, MD
Jane Im, MD
Jessica Williams, MD

Robin Bradshaw, APRN
Jill Herring, APRN



CARDIOLOGY

The mission of the Division of Pediatric Cardiology is to care for and improve the cardiovascular health of newborns, children and adolescents, and to transition them into healthy adulthoods. We strive to embrace discovery, teamwork, integrity and excellence in all that we do.

EXPANSION

In keeping with the goal to provide top quality care for families throughout the region, the Cardiology division has realized significant regional expansion over the course of 2021. This growth has been driven by continued success at established regional sites (e.g. Danbury, Shelton, Glastonbury, and Farmington) as well as the opening of two new clinical sites – in Westport and South Hadley, MA. Expansion includes both fetal and pediatric cardiology programs.

Through innovative outreach and community partnership, such as the development of the COVID-19 Return to Play algorithm, the Cardiology division has established itself as a go-to resource for referring physicians and families alike. In turn, this has enhanced access to our health care system and driven clinical volumes across the Cardiology division.

INTERVENTIONAL CARDIOLOGY AND ELECTROPHYSIOLOGY: PROCEDURAL INNOVATIONS

Cesar Igor Mesia, MD, was recruited as the director of Interventional Cardiology. He brings over a decade of experience as an interventional cardiology director at St. Christopher's Hospital for children in Pennsylvania. Interventional cardiologists Caitlin Heyden, MD, and Dr. Mesia perform a full range of interventional procedures at Connecticut Children's and provide 24/7 coverage for interventional cardiology procedures. The program made a remarkable stride with the initiation of a trans-catheter heart valve program. From October 2020 to December of 2021, we performed 10 trans-catheter pulmonary (Melody) valve implants.

Our electrophysiology laboratory performs state-of-the-art, non-fluoroscopic catheter ablation for supraventricular tachycardia in children. Connecticut Children's is the only medical facility in the state to routinely perform this procedure without X-ray use. Fluoroscopy time for catheter ablation of arrhythmias at Connecticut Children's is significantly lower than the national average. Connecticut Children's provides a dedicated pediatric pacemaker clinic run by a certified pediatric electrophysiologist and a pacemaker nurse. We performed a total of 85 electrophysiology procedures within the past year, which is a 20 percent increase over 2020.

The catheterization and electrophysiology laboratory continues to be an active member of the American College of Cardiology's IMPACT Registry™, a national, multi-institutional cardiovascular data registry designed to support evidence-based guidelines and review of performance benchmarks. The lab also participated in the Reducing Radiation Quality Care Initiative™, leading to drastic reductions in radiation exposure for Connecticut Children's patients.

We have demonstrated an excellent collaboration with the electrophysiology and cardiothoracic surgery services. We expanded our surgical approach to arrhythmia management. We performed epicardial defibrillator implantations, intra-operative arrhythmia surgery (Cryo-Maze), and laparoscopic cervical sympathectomy for resistant arrhythmia management. These procedures offer an excellence in care for both interventional and surgical management of cardiac arrhythmias at Connecticut Children's.

ADULT CONGENITAL HEART DISEASE PROGRAM

Connecticut Children's provides the most comprehensive care of adults with congenital heart disease (ACHD) in the state of Connecticut. Our Connecticut Adult Congenital Heart Service (CTACH) received accreditation as a comprehensive adult congenital heart disease center by the Adult Congenital Heart Association (ACHA) in 2018. Our program is the first and only accredited ACHD program in the state of Connecticut and one of only 44 in the nation. Felice Heller, MD, has taken over the role of director for ACHD this year. She has teamed up with our new recruit Anudeep Dodeja, MD, as the co-director of ACHD. Dr. Dodeja comes to us as a highly trained pediatric and adult congenital cardiologist from Ohio State University Wexner Medical Center and Nationwide Children's Hospital. Dr. Dodeja is also trained in non-invasive imaging and cardiac MRI.

The program is overseen by four providers: Felice Heller, MD, Anudeep Dodeja, MD, Whitney Fairchild, APRN, and the division head of Cardiology Shailendra Upadhyay, MD. Drs. Heller, Dodeja and Upadhyay are all adult congenital cardiologists certified by the American Board of Internal Medicine. The outpatient clinic follows over 1,200 adults with congenital heart disease on an annual basis. We offer comprehensive pregnancy management for patients with congenital heart disease in the inpatient or outpatient setting. We provide 24/7 call coverage for ACHD both at Connecticut Children's and Hartford Hospital. Approximately 20 percent of ACHD patients contribute to our interventional cardiology, electrophysiology and cardiac surgery procedural volumes.

NON-INVASIVE IMAGING: PEDIATRIC AND ADULT

Growth and expansion have characterized 2021 in the Echocardiography Laboratory at Connecticut Children's. This fiscal year, we performed a record 7,458 transthoracic, transesophageal, and fetal echocardiograms. This is a 31 percent increase from the 5,693 studies performed in the 2020 fiscal year and a 58 percent increase from the 2015 fiscal year, when 4,714 studies were done.

With the addition of Dr. Dodeja, we now have eight members in our imaging team, enabling us to expand the 'two reader' system to meet our growing needs. Kristina Brenners has been recruited in the role of lead sonographer. She comes to us from Rady Children's Hospital in San Diego where she served as the manager of the echo and EKG lab.
We focus significant energy on training students in our School of Pediatric Cardiac Ultrasound with the option to hire after graduation based on the quality of the student's skills and division needs. We were proud to welcome Olivia Boucher and Briana Campiglio to our team after training in our school this year. Additional hires include Danielle DeMatteo supporting our Danbury location, and Leeza Swierzewski supporting the South Hadley location on a per diem basis for fetal imaging. Our echocardiography team, certified by the Intersocietal Accreditation Commission, continues our commitment to perform the highest quality echocardiograms with efficient and accurate interpretation to serve the babies, children, and adults with congenital heart disease and acquired cardiac illness in our community.

NON-INVASIVE IMAGING: FETAL

Under the directorship of Alicia Wang, MD, with support by Brooke Davey, MD, our fetal cardiology program experienced continued growth this year. Two other fetal cardiologists, James Enos, MD, and Anna Tsirka, MD, joined the team in 2021. Our multidisciplinary fetal cardiology team includes cardiologists, nurses, specially trained sonographers, obstetricians, maternal-fetal medicine specialists, neonatologists, the palliative care team, and pediatric cardiothoracic surgeons.
We provide services in Hartford on the main campus and at our satellite clinic in Farmington. Additionally, we have expanded to locations in Danbury, Westport, and South Hadley, MA, to provide fetal cardiology outpatient services. We present monthly educational conferences for the regional maternal-fetal medicine specialists, and we are the primary site for teaching fetal echocardiography for the maternal-fetal medicine fellow at the University of Connecticut. We have developed a fetal registry, quality improvement initiatives, and clinical care pathways that enable us to track and optimize outcomes in our fetal patients.

NON-INVASIVE IMAGING: CARDIAC MRI

Our cardiac MRI team provides high quality, noninvasive cardiac imaging for infants to adults under the directorship of Olga T. Salazar, MD. Dr. Dodeja joined

Dr. Salazar as an additional cardiac MRI-trained cardiologist. Our Cardiovascular Magnetic Resonance (CMR) Imaging Program predominantly utilizes a state-of-the-art 3.0 Tesla Magnet located at Connecticut Children's and occasionally a 1.5 Tesla Magnet located at Hartford Hospital. We are a referral program for both pediatric heart disease and adult congenital heart disease and non-ischemic cardiomyopathies with cardiac referrals from all over the state. We performed over 300 cases in 2021, which is a substantial increase from 2020.

Our MRI Program is the backbone of our Adult Congenital Heart Disease Center. By AHA/ACC recommendations, these patients require a CMR study once every three years. Over 1,200 patients over the age of 18 years have been seen at Connecticut Children's consecutively in 2020 and 2021. In addition, the MRI Program now supports our Cardio-Oncology Program.

We have developed a comprehensive training curriculum in CMR imaging and post-processing in a six-month training program provided for two MR technologists a year.

Our CMR Program has a long track record of evaluating and utilizing new sequences and techniques, and this has opened several research avenues that are being evaluated.

CARDIO-ONCOLOGY HEALTH AND INNOVATION FOR CANCER SURVIVORS

The Cardio-Oncology Health and Innovation for Cancer Survivors (CHICS) is a dynamic multidisciplinary collaboration of clinicians and researchers to ensure that health outcomes continue to improve for all children diagnosed with cardiotoxicity. CHICS's mission is to improve the quality of life of children treated for cancer by reducing or eliminating their risk of cardiotoxicity.

Cardiotoxicity is a frequent and devastating adverse complication of anthracycline therapy. With the aim of averting its devastating effects, we started the development of the Cardio-Oncology Program in 2013 with the creation of a registry of pediatric cancer patients treated with cardiotoxic medications. We assembled an interdisciplinary team that includes Oncology, Cardiology, Endocrinology, Kinesiology, Nutrition, Psychology, Social Services and health-care-system engineering to implement primary, secondary, and tertiary heart failure prevention strategies in childhood cancer survivors to avert the deleterious consequences of cancer therapeutics-related cardiac dysfunction (CTRCD).

Our team has undertaken novel echocardiographic and CMRI techniques designed to detect acute and chronic subclinical cardiotoxicity in pediatric cancer patients exposed to anthracyclines. Additionally, our team has developed and validated cardiovascular risk modeling scores for childhood cancer survivors using our pediatric cancer registry. Starting at the time of cancer diagnosis, our goal is to facilitate safe completion of cancer therapies and lifetime avoidance of preventable cardiovascular toxicity in this vulnerable patient population.

CARDIOMYOPATHY AND HEART FAILURE PROGRAM

Under the directorship of Dr. Tsirka, this year the division initiated the Cardiomyopathy and Heart Failure Program. It aims to provide comprehensive expert care to patients with all forms of cardiomyopathy with an emphasis on genetic cardiomyopathies. The program incorporates multidisciplinary collaboration with state-of-the-art cardiac imaging, risk assessment, genetic counseling, and treatment. Our aim is to expand and become a center of excellence and regional referral center.

INPATIENT CARDIOLOGY

The inpatient cardiology program, under the directorship of Alex Golden, MD, and with the assistance of Katie Kellerman, PA-C, and Jill Sullivan, PA-C, continues to provide care for children and adults with congenital and acquired heart disease who are admitted to the regular nursing floors and ICUs. The team manages patients on the Cardiology and Cardiothoracic Surgery services in a collaborative model with cardiothoracic surgeons, critical care physicians, neonatologists and

other specialists, and it further supports the hospital with consultation services for the medical-surgical floor teams, NICU, PICU, Emergency Department, and the Hartford Hospital well baby nursery. The inpatient service has seen a significant increase this past year in its annual census and number of consultations provided. The inpatient team operates with special attention to standardization of care, smooth transition of care from the ICU to regular nursing floor settings, and from inpatient to outpatient settings. The inpatient team has collaborated to create standardized pathways for diagnosis and treatment of the COVID-related multisystem inflammatory syndrome in children (MIS-C) and post-mRNA vaccine myopericarditis, and these pathways have been instrumental in the standardization and continuous improvement of the treatment provided for these new conditions. The inpatient team continues to provide education to the Connecticut Children's house staff and the University of Connecticut medical students, both on rounds and in didactic settings.

PULMONARY HYPERTENSION PROGRAM

Joseph Kuruvilla, DO, leads our pulmonary hypertension program and brings his expertise in pulmonary hypertension to the region. In 2019, we treated our first patient with severe pulmonary hypertension with injectable prostacyclin therapy. This marked the formal start of our advanced pulmonary hypertension program, likely the only dedicated pediatric pulmonary hypertension program in the state. It is a multidisciplinary program involving advanced cardiac imaging, inpatient cardiology, interventional cardiology, the NICU, and a dedicated nurse. We have formalized evaluation and management of persistent pulmonary hypertension in newborns (PPHN) with an ongoing increase in this patient population.

EDUCATION

Our division is dedicated to the medical education of future providers and medical professionals.

Under the leadership of Dr. Upadhyay as the program director and Dr. Kuruvilla as the associate program director, we are thrilled to share the approval of an ACGME-accredited fellowship program in pediatric

cardiology. We have successfully matched an excellent candidate, James Wiley, DO, as our first pediatric cardiology fellow.

Drs. Heller and Upadhyay provide training in congenital heart disease for adult cardiology fellows from Hartford and John Dempsey hospitals. We also formalized ACHD rotation for cardiology fellows from Danbury Hospital in 2021. Dr. Heller serves as a content expert for the first-year medical student's core curriculum. She created a highly regarded lecture series on congenital heart disease for adult cardiology fellows.

Alicia Wang, MD, provides training in fetal cardiology for the maternal-fetal medicine fellows at the University of Connecticut. We provide subspecialty training for pediatric residents in pediatric cardiology.

We contribute to the training of medical students at both the University of Connecticut and Quinnipiac University.

The School of Pediatric Cardiac Ultrasound through the Hoffman Heart and Vascular Institute of Connecticut is now in its ninth year, and is recognized by the Joint Review Committee on Education in Cardiovascular Technology (JRC-CVT) and the Commission of Accreditation of Allied Health Education Programs (CAAHEP). Connecticut Children's Echo Lab is the training site for didactic and hands-on instruction of pediatric ultrasound for one to two sonographers yearly.

PROFESSIONAL RECOGNITION

Felice Heller, MD, has an international reputation as an expert for LMNA cardiomyopathy with patients from outside the state of Connecticut seeking her care.

Dr. Upadhyay was invited as a moderator and speaker at the 2021 Innovations in Cardiovascular Disease Symposium, organized by the Rambam Foundation. He was an invited faculty and moderator at the Virtual Empowerment Symposium organized by the Adult Congenital Heart Association (ACHA) in July 2021. He received the 2021 Mended Hearts Cardiologist of the Year Award for the Northeast region. He was appointed as a medical advisory board member for ACHA. Dr. Upadhyay was recognized by the American Association of Physicians of Indian Origin (AAPI) for his contributions in pediatrics and has been included as a member of the APPI distinguished speakers club. He conducted an ECG workshop at the World Academy of Academic Emergency Medicine (www.WACEM21.com) for international Emergency Medicine audiences in December 2021.

Seth Lapuk, MD, is on the Connecticut Children's medical staff board of the Executive Committee. He remains a member of the Connecticut chapter of the American Heart Association and the American College of Cardiology board of directors.

Dr. Toro-Salazar is a member of the Society of Cardiac MRI's writing committee on CRMI evaluation of chemotherapy-induced cardiotoxicity. She was accepted to the Accelerator for Biosciences in CT (ABCT) program in December 2021.

Dr. Golden earned his Lean Six Sigma Black Belt Certification from the International Association of Sigma Certification (IASSC).

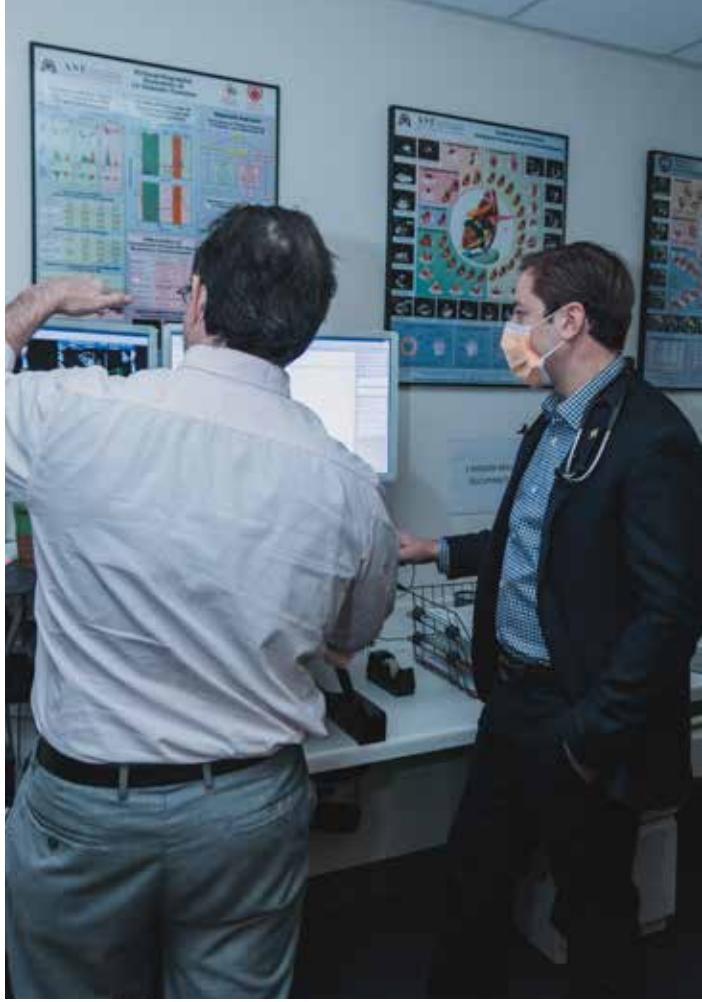
CONNECTICUT CHILDREN'S CARDIOLOGY RESEARCH PROGRAM

This year, research scientists in the Division of Cardiology successfully submitted and published several papers in internationally recognized, peer-reviewed journals including the *Journal of the American Heart Association* and the *Journal of the American College of Cardiology*.

Our research group continues to have a multitude of active projects that include the following areas of exploration:

- **CHD Diagnosis and Parental Psychological Coping**

  Brooke Davey, MD, is actively involved in a research project titled "Parental Reaction and Psychological Coping After Diagnosis of Congenital Heart Disease." The study has closed with 60 parents participating. Its purpose is to learn more about how parents react and adapt to a child's new diagnosis of CHD and how this process evolves over time. Dr. Davey presented this project in virtual poster format at the American College of Cardiology in March of 2020. She also submitted a manuscript for publication to *Maternal and Child Health Journal* this year.



- **Fetal Diagnosis of Coarctation of the Aorta**

  Drs. Wang, Davey and Toro-Salazar are working on a project entitled "Antenatal Risk of Coarctation for newborns born at Hartford Hospital (ARCH) Score: A Predictor of Postnatal Management Strategy." In 2013, the Connecticut Children's Fetal Cardiology

Team created a scoring system and clinical pathway as an evidence-based guideline aimed to decrease unnecessary variation and promote safe, effective and consistent patient care for neonates while decreasing resource utilization in patients with prenatal suspicion for coarctation of the aorta (CoA). The study will evaluate if use of the ARCH score promotes safe, effective and consistent care of neonates with critical CoA and determine if the score decreases resource utilization for those without critical CoA. Data collection, entry, and optimization are ongoing.

- **Fontan Working Group**

The Connecticut Children's team continues to participate in the NECCA Fontan Working Group. Drs. Davey and Toro-Salazar previously published "Surveillance and Screening Practices of New England Congenital Cardiologists for Patients After the Fontan Operation" in the peer-reviewed journal *Congenital Heart Disease*. Connecticut Children's completed enrollment and data collection in the prospective, multicenter study "Clinical Characteristics and Associations of the 'Good Fontan' Patient," and data analysis is ongoing. This study aims to determine the clinical characteristics of a Fontan patient with low risk for mortality or significant morbidity over a 12-month period of follow-up and to evaluate how well providers can identify patients at low vs. high risk of an adverse event.

- **Social Determinant's of Health and Cardiorespiratory Fitness in Childhood Cancer Survivors: Systematic Review**

Drs. Toro-Salazar and Davey continue their close collaboration in the field of health disparities and pediatric heart disease in the systematic review "Social Determinants of Health and Cardiorespiratory Fitness in Childhood Cancer Survivors Exposed to Cardiotoxic Agents." The goal of this review, currently in the title/abstract vetting phase, is to understand the interaction of social determinants of health (SDH) with exercise and physical fitness in this patient population, and to help develop effective individualized exercise interventions in future studies.

- **Electrophysiology and Arrhythmia Research**

Our electrophysiology laboratory performs predominant catheter ablation in pediatric and adult patients with congenital heart disease.

At the Virtual 31st International Adult Congenital Heart Disease Symposium, which was hosted by the Toronto ACHD Program, in October 2021, Dr. Upadhyay discussed the "Outcome of Zero Fluoroscopy Ablation in Adults With Congenital Heart Disease."

Dr. Upadhyay is an invited author for a scientific statement on arrhythmias in tetralogy of Fallot by the American Heart Association (AHA) for their official journal, *Circulation*.

- **Adult Congenital Heart Disease (ACHD Research)**

Our ACHD program has demonstrated continuous research efforts and presentations at national meetings. Under the mentorship of Dr. Upadhyay, Jenna Schermerhorn, DO, a former Connecticut Children's resident, presented her research on "Diastolic Function in Patients with Repaired Atrioventricular Septal Defects" at the Virtual 31st International Adult Congenital Heart Disease Symposium, in October 2021. At the same meeting, Dr. Upadhyay presented his project "Empagliflozin in Adults With Congenital Heart Disease."

Our program has been a part of an international research effort examining the impact of COVID-19 in adults with congenital heart disease. The study was published in the *Journal of the American College of Cardiology* in 2021. We continue to participate in this multi-institutional initiative and to study the long-term impact of COVID-19 in ACHD patients.

Whitney Fairchild, APRN, with the ACHD program, was the primary investigator for a nursing-led project looking at "Self-Management in Adults With Congenital Heart Disease." She gave an oral presentation discussing her findings at the Connecticut Children's Research Institute Inaugural Symposium on November 1, 2021. This project also has been accepted for a poster presentation at the American College of Cardiology 2022 Scientific Sessions.

- **MRI Research Program**

Our Cardiac MRI Program under Dr. Toro-Salazar's guidance is performing several research studies including myocardial strain and segmental displacement in various cohorts of patients such as childhood survivors of cancer chemotherapy and tetralogy of Fallot.

- **Cardio-Oncology Research**

Dr. Toro-Salazar is becoming a national leader in assessing and developing diagnostic tools and therapeutic interventions to curtail the impact of anthracycline-induced cardiotoxicity (AIC) in childhood cancer survivors. In collaboration with the Jackson Laboratory for Genomic Medicine in Farmington, CT, she has been exploring differential biomarker signatures associated with this pathology. By working collaboratively with a multidisciplinary team of experts in cancer biology, genetic analysis, and pediatric oncology, Dr. Toro-Salazar has developed a diverse in-vivo model of AIC in Collaborative Cross (CC) mice. Furthermore, dosing protocols that mimic the patient roadmaps used in clinical practice have been implemented in this model and hold promise in furthering our knowledge of AIC. Dr. Toro-Salazar's team has also started work on a study that examines the benefits of exercise-based intervention on cardiotoxic effects in childhood survivors of cancer.

- **COVID-19 and Cardiology**

COVID-19 impacted our division as it has health care systems around the globe. To accommodate patient needs, we embraced telemedicine, and

created disease-specific echocardiogram protocols specific to COVID patients to ensure the safety of caregivers. We developed return-to-sports guidelines for children infected with COVID. We developed MIS-C cardiac-evaluation management guidelines as well as protocols for post-COVID vaccine myocarditis evaluation and management. We continue to collaborate with other centers to further enhance the knowledge of COVID-19 and its impact on the heart.

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CHILD & ADOLESCENT PSYCHIATRY

The Division of Child and Adolescent Psychiatry continues to be a highly active, vibrant, and collaborative resource within the Department of Pediatrics at Connecticut Children's. Our work has focused on a number of areas: meeting the increasing clinical demand for behavioral health assessment and treatment services; close collaboration with other divisions within Connecticut Children's – both for treatment purposes as well as in the area of clinical pathway evaluation and development; and research efforts in a variety of areas as well as presentations at several national conferences.

During the past year, we continued to see clinical volumes rise in an unprecedented manner in all of the services in which we play a role. We expanded the Transitions Clinic to provide even greater amounts of immediate access to behavioral health services for patients presenting to our emergency department, on our medical surgical floors, and from our partnering inpatient psychiatric units to allow for flow of patients through all levels of mental health care. Our team also furthered our partnership with the Division of Pediatric Hospital Medicine (PHM) to maintain clinical pathways for our most complicated patients and to provide effective collaborative care models based on extensive research of evidenced-based treatments. Specifically, this year we worked to update and expand the Eating Disorders Pathway with a new arm specifying unique treatment for Avoidant Restrictive Food Intake Disorder. We are in the process of creating an agitation management pathway to standardize de-escalation methods and acute use of psychotropic medications when indicated. Additionally, we continue to partner with the Emergency Medicine division not only in evaluating the many children and their families who present to us in crisis but also to review alternate models to streamlining the movement through our emergency department into appropriate mental health care settings. As part of this, we participated in rapid improvement projects focused on safe discharges for all patients presenting in mental health crisis; assisted in streamlining the social work evaluation process, reducing intake time by 25 percent; and led efforts to expand into new physical spaces for patients within the hospital building. Finally, we are working to add new services for our patients at all levels of care. In conjunction with the Division of Psychology, we are creating med-psych outpatient services at two levels of intensity (traditional weekly therapy and intensive, multiple times-per-week therapy) to serve our most medically complex children in need of mental health supports. Psychology services will open in January 2022, and psychiatric care will be added in the spring-summer of 2022. We also are working to create an inpatient med-psych unit to care for this same population of children when they are at their highest level of need. We hope to open this unit in January 2023. At the same time, we are investigating multiple partnerships around the state to expand traditional inpatient psychiatric services in the coming months with hopes of having increased access to hospital level of care for children at risk of harm to themselves or others and children with grave disability due to their psychiatric conditions.

At Connecticut Children's, our division's services include: a consultation/liaison service that provides inpatient evaluations on any patient presenting with behavioral health concerns that may indicate co-occurring psychiatric and medical conditions; emergency psychiatric assessment, triage and disposition services within the Connecticut Children's Emergency Department; and Transitions Clinic, a short-term stabilization outpatient clinic, located in the ambulatory offices at 85 Seymour Street.

At the Institute of Living (IOL), clinical services include: individual, group, and family therapies; pharmacotherapy; and diagnostic evaluations. These services are provided through: inpatient units for children and adolescents; the Grace Webb School, a therapeutic educational setting for children and adolescents with co-existing psychiatric and learning difficulties; an outpatient child

and adolescent clinic; an extended day treatment program for older school-aged children; and a partial hospital program for children and adolescents. The adolescent program has a specialized track for early onset psychotic disorders. In addition, we continue to serve as one of the hubs for the Access-Mental Health CT program, a collaborative educational, consultation and assessment program between primary care providers and child and adolescent psychiatrists providing more than 1,000 phone consults to primary care physicians (PCPs) yearly, and approximately 2,500 care coordination activities since the program started in June of 2014.

Connecticut Children's and the IOL remain highly active teaching sites for many trainees: child and adolescent psychiatry fellows; general psychiatry residents; psychology interns; pediatric residents and medical students; as well as a post-doctoral psychology fellow who joins our consultation-liaison service for 12 months.

In the academic area: Lisa Namerow, MD, continues to study the benefits and limitation of pharmacogenomics testing on the treatment of children and adolescents with anxiety and depression. Michael Stevens, PhD, and Michal Assaf, MD, of the Olin Neuropsychiatry Research Center, remain active in the area of MRI research in such mental health conditions as ADHD, autism, traumatic brain injury (TBI), and mood disorders. The clinical trials unit, under the leadership of Mirjana Domakonda, MD, continues to have multiple drug treatment studies, including involvement in the international trial of esketamine. Salma Malik, MD, our fellowship director, continues her work in the areas of pharmacogenomics, homicide assessment, and residency transitions.

At the national level, it was an honor for our group to be selected for a number of presentations at the American Academy of Child and Adolescent Psychiatry Annual Meeting. Our presentations included such topics as: Internet gaming and obsessive-compulsive disorder; pharmacogenomics; homicide risk assessment; and the use of clinical pathways.

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STAFF

CHILD ABUSE PEDIATRICS

The Division of Child Abuse Pediatrics provides clinical evaluation services through the Suspected Child Abuse and Neglect (SCAN) program at Connecticut Children's. Consults are provided on an inpatient and outpatient basis at the Hartford campus of Connecticut Children's, and they include comprehensive expert medical evaluation and psychosocial assessment for children who may have experienced maltreatment. Program staff members offer support to caregivers throughout the evaluation process. We seek to collaborate with multidisciplinary partners in the service of the child and family, and strive to improve community response to child maltreatment through education, research, prevention and advocacy.

In 2021, with funding received from the Connecticut Office of Victim Services to improve sexual abuse medical services in northern Connecticut, the SCAN program has:

- Provided medical services in three satellite locations at Children's Advocacy Centers in Waterbury, Torrington, and Hartford
- Provided subcontract support and regular peer review for established regional examiners in Danbury and Putnam
- Provided regular education for sexual abuse examiners statewide using the ECHO (Extension for Community Healthcare Outcomes) telementoring model

Beyond clinical work, 2021 activities of division staff included the following:

- Teaching medical students, residents and fellows with didactics and block rotations
- Teaching statewide multidisciplinary partners, including child protective service workers, members of law enforcement, and attorneys
- Participation in nine regional community multidisciplinary teams: Hartford MDT, MDT 14, Central Connecticut New Britain MDT, Central Connecticut Bristol MDT, East Central MDT, North Central MDT, Tolland MDT, Torrington MDT, Waterbury MDT
- Provision of regular expert testimony in Connecticut courts
- Participation in statewide initiatives focused on child abuse prevention, human trafficking and domestic violence
- Provision of national training to attorneys on medical evaluation of abuse and neglect
- Participation in research
- Participation in quality improvement initiatives including ongoing work on a clinical pathway for suspected physical abuse, debut of a new clinical pathway for suspected sexual abuse, suicidality screening in SCAN outpatient clinic and universal education for domestic violence in SCAN outpatient clinic
- Provision of national medical peer review to other medical providers

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COMMUNITY PEDIATRICS

Community Pediatrics is the largest division in the Department of Pediatrics, consisting of more than 200 providers in practices throughout Connecticut and Western Massachusetts. The academic activities of the division are centered on pediatric primary care education. Practices serve as teaching sites for the core clinical experience of medical students in ambulatory pediatrics. Many physicians also precept medical students, advanced practitioner students, and residents in continuity experiences.

The Division of Community Pediatrics serves a vital role in fostering the health and well-being of children and their families in Connecticut and the region. Our providers focus on wellness, injury prevention, and behavior and development, thereby developing relationships with families to promote children's optimal social, emotional, and physical health. In 2021, our providers once again served on the front line in the ongoing global pandemic.

Our physicians and their staff members function as a medical home for patients and their families. They offer well-child care including immunizations such as COVID vaccines, they treat illness, injuries, and mental health concerns. The year 2021 brought a spike in the latter as the pandemic created a nationwide mental health crisis that impacted Connecticut Children's and our private practice pediatricians.

Many members of the Division of Community Pediatrics have also joined the Connecticut Children's Care Network (CCCN), a clinically integrated network that includes primary care providers and Connecticut Children's subspecialists. As more practices joined the CCCN, they benefited from a nine-part behavioral-health learning community series of evening lectures that focused on the primary care management of anxiety, depression, ADHD, and disruptive behaviors.

To help our community during the pandemic, the Division of Community Pediatrics partnered with the CCCN and Connecticut Children's to organize and support large COVID vaccination clinics for children ages 5-11 and 12-17.

Our division emphasizes the ongoing education of its members. Our private practice pediatricians are encouraged to stay up-to-date on a broad variety of topics in pediatric medicine by attending grand rounds (or listening to the podcasts) and participating in the ongoing webinar series *Ask the Experts*, both sponsored by Connecticut Children's Graduate Medical Education office.

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CRITICAL CARE

The Division of Pediatric Critical Care is dedicated to the delivery of state-of-the-art child and family centered care for critically ill and injured children.

The division's mission is accomplished by a collaborative group that champions a multidisciplinary approach to care, the incorporation of best available evidence into clinical practice, and acquisition of new knowledge through clinical research. Attention to patient safety, continuous performance improvement, and education of physicians, nurses, and other care team members is paramount.

Pediatric Intensive Care Unit (PICU) staff members continued to face the challenge and uncertainty of COVID-19 and took their responsibilities professionally and without wavering. As part of the first wave of vaccinations, the PICU stepped up and stood in line early. Many of the members of the team also volunteered in the vaccine clinics in their commitment to support the mission of disease prevention as related to population health. Throughout all this, the PICU faculty has been successful academically and professionally. Major awards and academic accomplishments among the division members include important contributions to several national societies and both internal and external collaborations.

Christopher Carroll, MD, continues to lead many clinical and translational research activities and collaborations. Not only is he an academic powerhouse, but he is recognized as an eminent academic scholar nationally and internationally in topics including, but not limited to, asthma, sepsis, head trauma, and COVID-19. In the latter, he has collaborated with leaders throughout the nation, and been instrumental in contributing to the knowledge of the impact of COVID-19 and the multisystem inflammatory syndrome in children (MIS-C). Dr. Carroll was also appointed as the director of Digital Access and Engagement at Connecticut Children's. He continues in leadership roles in major medical organizations including the Chest® (American College of Chest Physicians) COVID Task Force, deputy editor of multimedia for the journal *Chest*, and serves as chair of both the Critical Care NetWork and the program committee of Chest. As a result of these efforts, he was the 2021 recipient of both a Presidential Citation and Distinguished Service Award from the American College of Chest Physicians.

Kenneth Banasiak, MD, continues to lead as the medical director of cardiac critical care in a multidisciplinary collaboration with Cardiology and Cardiothoracic Surgery to standardize the care of post-operative patients, resulting in improved inter-service communications, patient safety, staff competency, and patient outcomes. Dr. Banasiak also created and implemented a continuing education curriculum on "Applied Critical Care Physiology," which focuses primarily on the education of residents who intend to go on to careers in acute care subspecialties.

Leonard Comeau, MD, continues his activities to improve the comfort and quality of care for our patients, both in the PICU and hospital-wide. He participates in care delivered by the Sedation Service, and also serves as the leader of the quality and safety oversight activities of the Sedation and Analgesia Committee. He is chair of the hospital Clinical Ethics Committee, which addresses issues related to the appropriateness and decision-making regarding health care for some of our most complicated patients. In addition, he leads Schwartz Rounds, a series of discussions for all Connecticut Children's staff where they may openly and honestly discuss the social and emotional dimensions of providing patient care. The goal is to foster empathy, collaboration, and compassionate support for the self and others, including our patients, their families, and all members of the health care team. Dr. Comeau is recognized by his colleagues for his excellent debriefing skills and creating an environment of sharing and inclusiveness.

Allison Cowl, MD, was appointed as the PICU medical director to manage the unit's clinical operations. She continues her clinical research collaborations with the Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) international network, focusing on various aspects of the care of critically ill patients and is a key site director for these multi-institutional research collaboratives. She participates in clinical research protocols evaluating platelet transfusion algorithms as well as early mobilization practices in the PICU. Dr. Cowl serves as the site PI in a large international trial that is evaluating ventilation strategies, as well as the use of prone positioning, in the treatment of patients with severe acute respiratory failure. In addition, Dr. Cowl has implemented a new care paradigm for all patients within the PICU with an eye on ensuring the best possible functional outcomes for our patients and minimizing post-intensive care syndrome. As leader of our comprehensive care multidisciplinary program, she is working with the care team to develop the expertise to recognize, minimize, and manage delirium, promote early mobilization of patients, and liberate them as early as possible from mechanical ventilation support. In addition, Dr. Cowl serves as the core faculty leader for student, resident, and fellow education in the PICU.

Daniel Fisher, MD, in collaboration with the Simulation Center, continues to oversee the interdisciplinary educational program with a focus on in-hospital resuscitation of patients in emergency situations. Using a high-fidelity simulation manikin, care team learners are presented with a patient in a life-threatening scenario and are called upon to resuscitate the patient. Sessions focus on medical decision-making, critical task completion, and interdisciplinary communication during high risk situations. This program has elevated the quality of care provided. Dr. Fisher served as chair of the Medication Safety Management Committee, which evaluates the safety of the institution's medications practices and works to decrease medical errors. The year 2021 marked the announcement that Dr. Fisher is retiring after 25 years of amazing service to Connecticut Children's. We honor his legacy and his commitment to the organization and the patients and families he impacted throughout his career.

Elliot Melendez, MD, continues as the head of the Division of Critical Care. In this role, he brings prior experience in quality improvement with a goal of

improving health care delivery using best evidence. He leads the Connecticut Children's sepsis quality improvement program and is engaging all disciplines in improving sepsis care. He is involved in the hospital's quality improvement work and participates in event review as needed. His vision for the department is one that fosters and maintains a model of continuous improvement, which puts our patients and families in the center of all conversations. In addition, he aims to improve the well-being of his team by valuing both the clinical and nonclinical efforts they bring to their everyday work.

Rosanne Salonia, MD, continues her efforts in improving the quality of care and safety for children with acute deterioration and in reducing the incidence of hospital-acquired conditions. Specifically, she continues her work as a member of the Emergency Response Committee, which oversees the use of the Pediatric Early Warning Score system (PEWS/MET) in focusing attention on patients at risk for clinical deterioration. She manages the associated database and coordinates the ongoing evaluation of the MET data, and is currently working on further enhancing this system. She is also co-leader of the Code Blue Committee, reviewing activations across the institution with a multidisciplinary team to improve patient outcomes and system-related issues. She is involved in a collaboration with the National Children's Hospitals' Solutions for Patient Safety group, which works to eliminate serious safety events in children's hospitals with specific work focused on reducing unplanned extubations. Dr. Salonia also continues her work with the simulation program to improve team communication during high-risk clinical scenarios.

Adam Silverman, MD, as director of the Center for Global Health (CGH), leads efforts to increase appreciation for diversity, equity and inclusion amongst learners, staff and faculty at Connecticut Children's while leveraging the skills and talents of our institution and its members to improve the health of children living in resource-limited settings. Despite continued restrictions created by the COVID-19 pandemic, Dr. Silverman leveraged technology and collaborated with pediatric providers in Haiti, Rwanda, and Ghana to remotely provide education for future pediatricians in countries with some of the most compelling health care inequalities. He continues to organize an annual Global Health Symposium and the Global Health Film Festival. Locally, he has collaborated with other faculty to further refine and improve the Global Health Care Pathway for pediatric residents, organized a Global Health Boot Camp, and he mentors multiple staff members in global health to help improve the health care of children around the world. Dr. Silverman is also a member of the Antimicrobial Stewardship Program and takes an active role in the education of Quinnipiac medical students on the pediatric rotations.

Heather Schlott, MD, continues as medical director of the hospital's Extracorporeal Membrane Oxygenation (ECMO) program. This technology provides state-of-the-art heart and lung support for our most critically ill patients. The program continues to show overall excellence as a result of her leadership and, in fact, in 2021, Connecticut Children's received a Gold Award from the national Extracorporeal Life Support Organization for excellent outcomes. In these efforts, she has created an educational curriculum to enhance ECMO delivery by pediatric perfusionists and respiratory therapists. Dr. Schlott also leads the continuous renal replacement therapy (CRRT) program. This collaboration with Neonatology, Nephrology, Hepatology, and Pediatric Surgery continues its efforts to expand the services available to a growing population of neonates and infants that might benefit from CRRT. Lastly, Dr. Schlott continues as a champion of sepsis care, including acting as the clinical expert for Connecticut Children's in the Children's Hospital Association's "Improving Pediatric Sepsis Outcomes" Collaborative.

Robert Parker, DO, is interested in medical simulation and education. In 2021, he created a PICU resident didactic curriculum to supplement the bedside clinical education for rotating residents. In addition, he created an in-time teaching of resuscitation for PICU nurses, where skills are affirmed through five-minute educational sessions. He is recognized for his teaching abilities and will be taking more of a role in resuscitation simulation throughout the organization.

PUBLICATIONS

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Heather Schlott, MD
Adam Silverman, MD


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DEVELOPMENTAL - BEHAVIORAL PEDIATRICS

The division's mission is to provide comprehensive and compassionate diagnosis and management for children with neurodevelopmental and behavioral problems that range from normative deviations to rare disorders; to educate health care professionals and trainees about these problems; to add to existing knowledge by researching relevant questions in the field; and to offer advocacy, and influence public policy.

The Division of Developmental-Behavioral Pediatrics (formerly the Division of Developmental and Rehabilitation Medicine) is composed of a diverse faculty of developmental-behavioral pediatricians, an integrative medicine (IM) pediatrician, and advanced practice registered nurses (APRNs). Our clinical services occur in a number of settings – outpatient, inpatient, and in the community (e.g., schools, Connecticut Birth-to-Three system, and other agencies). We provide direct consultation, optimal clinical care, and consultative services to schools and agencies across the state.

CLINICAL STAFF ROLES

- Sarah Schlegel, MD, is division head.
- Ana Garnecho, MD, is the site director at the Norwalk Developmental Center, a joint venture between Connecticut Children's and Norwalk Hospital, which is part of Nuvance Health™.
- Robert Keder, MD, is the division's education director. He is the division's core faculty liaison for the residency program, but also manages formal division education opportunities at all training/learning levels (undergraduate, graduate, and continuing medical education). In addition, Dr. Keder has continued to be one of the main "physician faces" at Connecticut Children's during the pandemic, dedicating countless hours to pandemic-related marketing and communication efforts, including with various news media outlets such as Fox News, NBC, ABC, and NPR. He is also very engaged in legislative advocacy.
- Thyde Dumont-Mathieu, MD, MPH, is the autism spectrum disorder program director. She continues to work on designing a sustainable, efficient autism spectrum disorder evaluation algorithm within the division amidst pandemic turmoil.
- Ana Verissimo, MD, is the integrative medicine director. In anticipation of her pending retirement, she closed the inpatient integrative medicine consultation service.

ONGOING CLINICAL PROGRAMS

- Dr. Keder continued as an embedded developmental-behavioral pediatrician in two of Connecticut Children's primary care settings, serving the goal of enhancing collaboration and co-management with primary care providers as well as improving access to care for our highest risk patients and families.
- The Transition to Adulthood with Developmental Services Clinic, directed by Dr. Schlegel and serving patients 15 to 26 years of age and their families, celebrated three years of operation. The clinic is absolutely unique to Connecticut with only a few other similar programs in the United States.
- For years, integrative medicine consultation provided by Dr. Verissimo has been an integral component of some of Connecticut Children's surgical protocols.

CLINICAL HIGHLIGHTS/ACCOMPLISHMENTS

- In addition to in-person appointments, the division continues to maintain a robust telemedicine presence, offering comprehensive virtual access to care to ensure the safety of patients, their families, and faculty and staff.
- For nearly two years, the Show Me Video Assessment for Telehealth (developed by Dr. Garnecho, Jennifer Twachtman-Bassett, MS, CCC-SLP, CCRP, and Dr. Dumont-Mathieu) has made it possible for the division to effectively conduct virtual assessments of children between 18 months and 11 years of age who may have autism spectrum disorders.
- Two specialized physician- and advanced practice provider-collaboration pathways were piloted, one for autism spectrum disorder (Ann Milanese, MD, and Dana Eisenberg, APRN), the other for attention-deficit/hyperactivity disorder evaluation and management (Dr. Schlegel and Keith Ellis, APRN).

ONGOING COMMUNITY-BASED CONSULTATION PROGRAMS

- For 20 years, Dr. Milanese has been medical advisor for many school districts all over Connecticut, this year renewing contracts with 14, including the Connecticut Technical High School system.
- Dr. Milanese has been the medical advisor for Connecticut's Early Intervention program, Birth-to-Three, for nearly 20 years.
- Dr. Milanese has been providing daily general pediatrics consultation to the Institute of Living inpatient child psychiatric unit since 1997.
- Dr. Schlegel continues to direct the decade-old School Consultation Service, conducting individual evaluations of medically and developmentally complex students within their school districts.
- Dr. Schlegel continues as the medical director for Cheshire Fitness Zone.
- Dr. Milanese continued her appointment by Connecticut Governor Ned Lamont to the Connecticut Interagency Birth-to-Three Coordination Council.

EDUCATION HIGHLIGHTS/ACCOMPLISHMENTS

- In January 2021, Dr. Keder presented "Navigating Schools, Stress, Safety, and Special Needs During a Pandemic" to the local National Association of Pediatric Nurse Practitioners chapter.
- In February, he presented "Autism Diagnosis" to the University of Connecticut LEND program.
- In March 2021, Drs. Garnecho and Keder presented "Auto Cuidado y el Aprendizaje Socio Emotional para Padres y Cuidadores" as part of the Connecticut State Department of Education's Virtual Conversations Series for Parents and Families on Supporting Children's Learning During COVID-19.

- Also in March, Dr. Keder presented "Screen Time Management for Behavioral Health" to child psychiatry fellows and residents at the Institute of Living in March 2021, and "One-Minute Preceptor Model" to pediatric fellows at Connecticut Children's.
- In April 2021, Dr. Keder presented "Developmental Psychology and the Ecobiodevelopmental Model of Pediatrics" to undergraduate students at Fairfield University.
- For the Society for Research in Child Development in April 2021, Dr. Dumont-Mathieu presented her team's work in "A Web-Based Training Program for Caregivers of Children with Autism Spectrum Disorder."
- Dr. Keder was a panelist for a community forum entitled "Discrimination in Education: Giving Voice to Problems, Challenges and Solutions During COVID and Beyond" for the Center for Children's Advocacy in May 2021.
- In October 2021, Dr. Keder and Melissa Santos, PhD, (Division of Psychology) co-presented "Ask the Experts: Addressing the Mental Health Pandemic: Where Have We Been and Where Are We Going."
- Several division members attended the Society for Developmental and Behavioral Pediatrics (SDBP) Annual Meeting in October 2021, and Dr. Keder, who is a SDBP Advocacy Committee co-chair, was the lead presenter for workshops entitled "The Kids Are Not All Right: Advocating for Equitable Outcomes Post-COVID Using a Medical-Legal-Educational Advocacy Toolkit" and "Oh the Humanities!!! A Toolkit for Enhancing Teaching of Developmental-Behavioral Pediatrics Using Film, Literature, New Media, & Visual Art." He was also a presenter for a workshop entitled "Curating an Online Curriculum for Successful Teaching: #DBPteachingtoolbox."
- At the Connecticut Children's Bi-Annual Joint Pediatric Symposium Series in November 2021, Dr. Garnecho presented "What's New in ADHD? An Update on Clinical Diagnosis and Treatment Guidelines."
- Dr. Dumont-Mathieu presented "Approach to Conducting Community-Based Research" to Connecticut Children's junior investigators in the Academic Associates program in December 2021.

ONGOING RESEARCH

- Supported by research assistant Rosalie Lyons, BS, from the Connecticut Children's Research Institute, Dr. Dumont-Mathieu continues work on five active research projects, two of which are grant-funded:
  - » Bridging the Gap: Providing Equitable Early Treatment of ASD by Finding Children, Wherever They Are
  - » Strategies to Promote Culturally Effective Screening, Referral and Service Provision in Primary Care Practices and Birth-to-Three Programs
  - » Decision-Making Process and Experiences with Genetic Testing in Autism Spectrum Disorder: Pilot Study With a Clinically Derived, Diverse Sample of Participants (Co-I: Louisa Kalsner, MD, Division of Neurology)
  - » Early Detection of Pervasion Developmental Disorders (PI: Deborah Fein, PhD, University of Connecticut)
  - » Connecting the Dots: An RCT Relating Standardized ASD Screening, Intervention Access, and Long-Term Outcomes (PI: Deborah Fein, PhD, University of Connecticut).

NEW RESEARCH

- Dr. Dumont-Mathieu was awarded a three-year grant from the Connecticut Office of Early Childhood beginning in March 2021.

PUBLICATIONS

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Ann Milanese, MD
Ana Maria Verissimo, MD

Dana Eisenberg, APRN
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Mariel Zeccola-Swan, APRN

DIGESTIVE DISEASES, HEPATOLOGY & NUTRITION

The Division of Digestive Diseases, Hepatology, and Nutrition is committed to cutting edge and innovative clinical care of infants, children and adolescents; pioneering clinical, translational, and basic research; and the education of the next generation of physicians.

The past two years saw our division challenged by the unprecedented SARS-CoV-2 pandemic. Yet, we were able to maintain our lofty standards of excellence in clinical care, research, and education through the efforts of a dedicated and talented staff. Though we utilized telemedicine extensively in the first months of the pandemic, by early spring 2021, we had largely returned to in-person visits except when distance was an obstacle to in-person care. Our many clinical trials are all back to full operation as we continue to examine the role of emerging therapies in pediatric GI disease.

Our clinical operations now span seven different offices in Connecticut and western Massachusetts. Endoscopic procedures are performed in the hospital in Hartford as well as at our Ambulatory Surgery Center in Farmington. In 2022 we will add an ambulatory surgery location in Fairfield County.

Our Center for Pediatric Inflammatory Bowel Disease (IBD), the largest program in the region between Boston and New York, continues to provide care to over 800 children with Crohn's disease and ulcerative colitis. Pioneering research at Connecticut Children's and its collaborating institutions funded by the National Institutes of Health (NIH) and the Crohn's & Colitis Foundation unravels some of the mysteries underlying the pathogenesis of bowel inflammation and provides tools to utilize precision medicine in its treatment. Jeffrey Hyams, MD, head of the Division of Digestive Diseases, Hepatology and Nutrition, and holder of the Mandell Braunstein Family Endowed Chair in Pediatric Inflammatory Bowel Disease, is a co-principal investigator on a multicenter, multimillion-dollar NIH-funded study examining the clinical and biological predictors of response to certain biologic medications in children newly diagnosed

with Crohn's disease. Our IBD program teamed with the division of Infectious Diseases at Connecticut Children's and the Jackson Laboratory (JAX) in Farmington, CT, to investigate and report the immune response of patients with IBD to SARS-CoV-2 infection as well as vaccination. The results were presented by invitation to the NIH and the Centers for Disease Control (CDC) as well as published in the prestigious *Inflammatory Bowel Diseases* journal. Further work is ongoing examining the durability of response to vaccination in these patients. Dr. Hyams was the recipient of the Westchester/Connecticut Crohn's and Colitis Foundation Humanitarian of the Year Award for his contributions to the lives of children with IBD.

Our Center for Pediatric Liver Care, directed by Karan Emerick, MD, continues its excellent work in providing care to children with hepatic disorders ranging from chronic hepatitis B and C, metabolic liver disease, autoimmune disease, and acute and chronic liver failure. It provides pre- and post-transplant care to over 40 children. Samantha Lee, APRN, under the guidance of Dr. Emerick, coordinates the program, caring for children with non-alcoholic fatty liver disease (NAFLD), and she works closely with other divisions in the hospital. Fibroscan® technology, started over a year ago, allows the non-invasive evaluation of liver fibrosis in children with chronic liver disorders. This program not only welcomes patients at the hospital but also every other month in our Shelton office. Dr. Emerick serves as an attending physician on the hepatic transplant service at Yale New Haven Hospital six to eight weeks yearly.

Our Multidisciplinary Intestinal Rehabilitation Team (MIRT) is the only one of its kind in the state. Co-directed by Jasmeet Mokha, MD, and Christine Rader, MD, from Pediatric Surgery, this group focuses on the care of children with intestinal failure of all causes. Phyllis Bebyn, RN, and Kate Samela, RD, are integral parts of this team, which also facilitates the transition of patients from hospital to home.

Corey Baker, MD, has ably developed our Center for Neurogastroenterology program and has established anorectal manometry and esophageal motility capability. Our program has pioneered the use of IB-stim, a therapy that was approved in 2019 by the Food and Drug Administration for treating adolescents with chronic abdominal pain. IB-stim is a non-surgical device that sends barely perceptible electrical impulses into cranial nerve bundles located in the ear that then stimulate regions of the brain that are involved in pain processing. We are one of the few centers in the country currently offering this treatment modality, and we successfully used it for several patients with previously refractory abdominal pain.

Dr. Baker, along with Victoria Grossi, DO, Bella Zeisler, MD, and Pete Townsend, MD, serve as the gastroenterologists in the Aerodigestive Disease Program. This coordinated program of otolaryngologists, pulmonologists, gastroenterologists, and speech therapists cares for children with complex airway, pulmonary and gastrointestinal disorders.

The medical education team within our department is involved in teaching the GI fellows, pediatric and other residents, and medical students. Dr. Zeisler is the fellowship director and Katherine Baldwin, MD, the associate director. In 2022 we will expand our fellowship from three fellows to four over a three-year training period. Resident education is led by Drs. Townsend and Grossi. Medical student teaching is directed by Drs. Grossi, Baldwin and Townsend, and Dr. Mokha leads the teaching effort for Quinnipiac University medical students. All GI faculty remain engaged in teaching different learners as they rotate through the various GI clinical opportunities. The great depth in our pediatric surgical and radiology programs as well as the great variety of clinical disorders and the intimate involvement of our faculty make our educational programs particularly attractive.

Logan Jerger, MD, is the division's quality improvement officer. Dr. Townsend has been appointed our medical director of endoscopy and continues to direct our fecal transplant service.

Under the direction of Drs. Sarita Singhal and Donna Zeiter, our South Hadley campus has continued to thrive and attract patients regionally. Dr. Singhal assumed the regional liaison role.

Brad Jerson, PhD, our division's pediatric psychologist, provides fully embedded psychological evaluation and intervention services. He has partnered with other institutional departments and regional community mental health agencies for development of psychosocial programming to address GI symptoms from an evidence-based perspective. Finally, 2021 brought the establishment of the Teresa C. DeVido Fund for Pediatric Psychogastroenterology. The fund was established to support the enhancement of specialized psychology services and clinical care delivered to youth and families affected by complex gastrointestinal conditions.

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STAFF

Jeffrey Hyams, MD, *Division Head*

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Katherine Baldwin, MD
Karan Emerick, MD
Victoria Grossi, DO
Logan Jerger, MD
Brad Jerson, PhD
Jasmeet Mokha, MD
Sarita Singhal, MD
Peter Townsend, MD
Bella Zeisler, MD
Donna Zeiter, MD

Fellows

Chelsea Lepus, DO
Mariyam Hashmi, MD
Jing Marrero, MD


Wash In, Wash Out
DOCTOR

EMERGENCY MEDICINE

The Division of Emergency Medicine continues its commitment to sustained, safe operations through each phase of the pandemic. The collaboration amongst all organization team members enables us to focus on our top priority: the health and well-being of the children and families in Hartford and beyond. Our team remains active in our tripartite mission: teaching, clinical care, and scholarly work. This is seen in our work on numerous division, organizational, and external committees; as well as advisory boards with regional and national audiences.

In 2021, the Emergency Department of Connecticut Children's treated 42,749 patients. This volume is reflective of a nationwide trend during the pandemic with sustained high acuity and mental health patients. Starting in August, we experienced a steep uptick in visits to a short-term adjusted volume of close to 64,000, also commensurate with nationwide trends.

Our Trauma Program achieved re-verification by the American College of Surgeons as a Level I Pediatric Trauma Center in fall of 2021. Verified trauma centers are recognized for their dedication to providing optimal care for injured patients and must meet essential criteria that ensure trauma care capability and institutional performance. The re-accreditation is also a testament to the highly successful partnership between the Emergency Department, Pediatric Surgery, and all related fields.

Among the year's other highlights, access to health care has been improved by a robust ambulatory referral program to facilitate smooth subspecialty contact after ED discharge, and by growing clinical operations at the Connecticut Children's Urgent Care in Farmington.

OUR DIVISION

The Division of Emergency Medicine is composed of 19 Pediatric Emergency Medicine (PEM) board-certified/eligible fellowship-trained faculty, three per diem pediatric emergency medicine- and emergency medicine-trained providers, six PEM fellows, 15 advanced practice providers (APPs), and two per diem APPs. The team is led by division head Michele McKee, MD, MS, FAAP, and associate head and medical director John Brancato, MD, FAAP, FACEP. Together, they guide division growth, clinical excellence, patient safety, and system enhancements. As a division, we chose to focus on improving our case review/morbidity and mortality (M&M) process; critical care documentation and billing; diversity, equity and inclusion (DEI) initiatives; and resuscitation documentation. All faculty members participated in these annual division goals.

Members of the Division of Emergency Medicine play an integral role in many areas of the hospital and region. Education and research are core parts of our mission. Faculty members teach and mentor 60 pediatric residents and 54 emergency medicine residents as well as family practice residents, medical students, dental students, and advanced practitioner students. The fellowship in pediatric emergency medicine (a subspecialty of both Emergency Medicine and Pediatrics) is now in its 22nd year, led by program director Matt Laurich, MD. We completed another highly successful match, adding two new PEM fellows per academic year. Our PEM fellows bring excellent clinical and academic skills to our group. Dr. Laurich also leads the ED Sepsis Working Group and is a member of a nationwide sepsis learning collaborative. The Undergraduate Research Assistant Program, which was developed by Sharon Smith, MD, and is taught by our faculty, supports the research productivity of our division. Dr. Smith teaches two honors-level undergraduate courses at the University of Connecticut. She also serves as the division's director of research and is the medical director of Pediatric Advanced Life Support (PALS) for the institution. Lana Friedman, MD, and Mariann Kelley, MD, share responsibility for orienting, scheduling and evaluating the medical learners who work in our department. Michael Soltis, MD, is the medical director of the Pediatric Critical Care

Transport team and is the ED coordinator for Clinical Forensics and Child Abuse Services. The logistics of interhospital transport have taken many turns during the pandemic, which has been successfully navigated under Mike's steady guidance.

Simulation education targets students through the use of widely varying clinical scenarios guided by seasoned attendings. Dr. Kelley is director of Simulation Education at the UConn School of Medicine. Carla Pruden, MD, is director of Simulation for Connecticut Children's. Together they lead bimonthly simulation sessions for the Pediatric Emergency Medicine attendings and fellows, monthly sessions for the trauma team, monthly sessions for residents and fellows, and ad hoc sessions for the medical school and hospital using high fidelity manikins. Both of these faculty members have done a wonderful job translating work accomplished in other areas, such as quality and trauma, into timely simulation models.

Henry Chicaiza, MD, leads the point-of-care ultrasound curriculum for the fellows, the formal ultrasound credentialing and quality program for the attending staff, and the hospital-wide ultrasound-guided IV program. Eric Hoppa, MD, and Kristin Welch, MD, are members of the Clinical Effectiveness Committee and have led the production of many pathways that help create standard work and improve the quality of care.

Connecticut Children's Emergency Department (ED) continues to be busy caring for patients with mental and behavioral health needs. Carol Erickson, APRN, and Steve Rogers, MD, medical director of Emergency Mental Health Services, have created a staffing model to promote consistency for this population as well as risk stratification for rooming and staffing considerations.

Noah Jablow, MD, Ashley Notartomaso, MD, and Ruchika Jones, MD, are our newest faculty members. Their strengths include stellar clinical education with future goals focusing on urgent care provider education, medical evaluation of the mental health patient, residency educator coordinators, and holistic care of survivors of trauma.

Two members of our team hold dual clinical appointments. They bring clinical expertise to our group with natural bridges to other divisions. Jesse Sturm, MD, is the head of the hospital's Sedation Service, and Adam Silverman, MD, is primarily based in Critical Care.

Our advanced practitioner group is a vital part of our team. Listed below are some of their 2021 achievements:

Nicole Chaves: Presented on pediatric and adolescent suicide at the first annual APP Summit. Holds advanced trauma life support (ATLS) certification.

Jessica Fett: Coordinated a DEI presentation to the ED APP group on caring for the hearing-impaired child in the ED. With Mandi Boisvert and Carol Erickson, she is part of the group consistently caring for the mental health population boarding in the ED.

Ann Gorjanc: Initiated the opening of this year's APP Summit with self-care strategies. Volunteered in community-wide COVID vaccine clinics.

Sarah Orlando: Coordinator of physician's assistant (PA) graduate student clinical practicum in the ED. Involved in the APP Residency Program along with Chelsea Byrd and the Office of Advanced Practice Professionals.

Lisa Tryon: Member of the Child Protection Team.

Lauren Wellner: Coordinator of APRN graduate student clinical practicum in the ED.

Garry Lapidus: Co-director of OAPP.

Carol Erickson: Zero Suicide, ED Mental Health Leadership Group member. Volunteered in COVID vaccine clinics.

Ryan Keenan: Holds advanced trauma life support (ATLS) certification.

The division continues to be productive with many poster presentations at national conferences, publications in peer-reviewed journals, and book chapters.

PUBLICATIONS

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Book Chapters

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STAFF

ATTENDINGS

Michele McKee, MD, MS, FAAP, *Division Head*

John Brancato, MD, FAAP, FACEP, *Associate Head and Medical Director*

Henry Chicaiza, MD
Lana Friedman, MD
Andrew Heggland, MD
Eric Hoppa, MD
Noah Jablow, MD
Ruchika Jones, MD
Mariann Kelley, MD
V. Matt Laurich, MD
Ashley Notartomaso, MD
John Peng, MD
Carla Pruden, MD
Steven Rogers, MD
Adam Silverman, MD (ED/PICU)
Sharon Smith, MD
Michael Soltis, MD
Jesse Sturm, MD (ED/Sedation)
Kristin Welch, MD

PER DIEM ATTENDINGS

Zoe Casey, MD
James Parker, MD
James Wiley, MD

APRN'S & PA's

Carol Erickson, APRN, *Lead APP*

Mandi Boisvert, APRN
Chelsea Byrd, PA-C
Nicole Chaves, PA-C
Jessica Fett, APRN
Amanda Good, APRN
Ann Gorjanc, PA-C
Jessica Haggett, APRN
Ryan Keenan, APRN
Garry Lapidus, PA-C
Jennifer Martin, APRN
Sarah Orlando, PA-C
Lisa Tryon, PA-C
Alexis Veith, PA-C
Lauren Wellner, APRN

PER DIEM APRNs / PA's

Katelyn Claudomir, APRN
Lauren Cohen, PA-C

PEDIATRIC EMERGENCY MEDICINE FELLOWS

Shaheen Andreas, DO, PGY-5
Susana Collazo, MD, PGY-4
Edgar Flores, MD, PGY-4
Candice Jersey, DO, PGY-6
Owen Kahn, MD, PGY-6
Kathryn Schissler, DO, PGY-5

ENDOCRINOLOGY & DIABETES

In 2021, the Division of Pediatric Endocrinology and Diabetes continued its growth in clinical programs and research endeavors with the overall mission of improving the health and quality of life of our patients through our clinical expertise, compassionate care, advocacy, and research investigations focused on the development of new treatments through clinical trials, clinical research, and laboratory investigations.

This past year was highlighted by continued growth and innovation in both our clinical and research endeavors. The division continues to rank among the most highly rated at children's hospitals throughout the country, having been designated as 36th in the nation this past year by *U.S. News & World Report*. Our outpatient clinics in Farmington, Glastonbury, Hartford, and Shelton have continued to run full-time during the pandemic, and given the rapid ramp-up of telehealth in the spring of 2020, we have found telehealth to be a valued addition to our in-person visits not only for the convenience of our patients when on-site evaluations are unnecessary but also for social distancing within the clinic. This kept our clinic safe and running full force during the wave of Delta virus. We will be expanding our outpatient clinics further in Fairfield County in early 2022 with one full-time and one part-time pediatric endocrinologist joining our team. The multiple subspecialty clinics within the division have grown as well. We have 12 faculty currently devoted to patient care and to the education of medical students, residents, and fellows. We welcomed one new faculty member this year, Karen Loechner, MD, PhD, (associate professor), who was recruited from Emory University/Children's Healthcare of Atlanta to increase our clinical efforts and expand our clinical trials. All of our faculty members have given local, national, and/or international presentations in the educational and/or research arenas, and most are involved in clinical, translational, and/or bench research.

The division is led by Emily Germain-Lee, MD, professor of Pediatrics at the University of Connecticut School of Medicine and adjunct faculty at the Jackson

Laboratory in Farmington, CT. In addition to her clinical and administrative roles as division head, she is chair of the Senior Research Advisory Council at Connecticut Children's and chair of the Research Council at the University of Connecticut School of Medicine, enabling her to be actively involved in overseeing the research mission at both institutions. Cem Demirci, MD, the Chase Family Chair of Juvenile Diabetes and assistant professor, has taken on the role of clinical director for the division this past year in addition to maintaining his role as director of our very active diabetes program for more than a decade. The incorporation last year of the Glycogen Storage Disease & Disorders of Hypoglycemia Program into our division has widened our breadth, with Rebecca Riba-Wolman, MD (assistant professor), as the director. Dr. Riba-Wolman is also the director of the division's very active fellowship program, which is currently in its twenty-fourth year. With the additional joint efforts of Christine Trapp, MD, (assistant professor and associate director), Sunitha Sura, MD, (assistant professor), and Susan Ratzan, MD, (professor and prior division head), the fellowship program is thriving.

SUMMARY OF SUBSPECIALTIES WITHIN THE DIVISION OF PEDIATRIC ENDOCRINOLOGY & DIABETES

The Division of Pediatric Endocrinology and Diabetes is unique in that it has within it a wide array of subspecialty clinics focused on specific conditions. The Glycogen Storage Disease & Disorders of Hypoglycemia outpatient program is now fully incorporated within our division since last year.

Diabetes Program: A large focus in the division is our Diabetes Program, which has grown significantly this past year. Directed by Dr. Demirci, it now cares for approximately 1,500 children and adolescents with diabetes. In addition, care for diabetes is now well-established within our Fairfield County satellites in Danbury and Shelton, under the direction of Nordie Bilbao, MD, assistant professor. All of the pediatric endocrinologists in the division are involved in providing care for diabetes of all types, including type 1 and type 2 DM, monogenic diabetes, maturity onset diabetes of the young (MODY), permanent neonatal diabetes, cystic fibrosis-related diabetes, and steroid-induced diabetes. The Division of Endocrinology and Diabetes is accredited by the American Association of Diabetes Educators (AADE) and has a multidisciplinary team of 11 staff including advanced practice practitioners, registered nurses, registered dietitians, certified pediatric diabetes educators, an administrative assistant, and a pediatric social worker. Work in the clinic was featured in a research poster presentation by Comalita Elliott, RN, CDE, a nurse and diabetes educator in our division.

Gender Program: This program continues to grow tremendously under the direction of Priya Phulwani, MD, who provides unique care to children and adolescents with gender incongruence and also offers support to families. Dr. Phulwani continues to advance the program not only through her clinical care but also through statewide advocacy and a multitude of presentations given locally and regionally. She has several important collaborations to improve the health and quality of life for patients. For example, Dr. Phulwani has extended her collaborations to include the Center for Advanced Reproductive Services, which offers fertility options to patients with gender incongruence, and she has worked with multiple departments at Connecticut Children's to be a top leader in the Health Equality Index, which is the national LGBTQ benchmarking tool that evaluates the policies and practices of health-care facilities related to the equity and inclusion of their LGBTQ patients, employees, and visitors.

Clinic for Variations of Sexual Development: This clinic, co-directed by Dr. Phulwani, has evolved into a truly interdisciplinary model with visits involving joint meetings of the parents (or parent) with their child for evaluations by a pediatric urologist, a family support provider, and Dr. Phulwani. The providers build upon each other's experiences to achieve a common shared goal of providing comprehensive compassionate care to infants, children, adolescents, and their families. The joint patient visits enable better coordination of care and allow for open, clear and consistent communication. By providing ongoing age-appropriate education, the patients are empowered to be involved in the decision-making process. Dr. Phulwani actively participates with members of Medical Genetics, Urology, Plastic Surgery, Adolescent Gynecology, and Psychology. She also advocates extensively for these patients at local, regional, and state levels.

Center for Rare Bone Disorders: This center was established at Connecticut Children's by Dr. Germain-Lee, and it has built upon more than two decades of her clinical care and translational laboratory research in this area. The center combines both clinical care and basic science research to help patients with rare bone disorders, while at the same time working to discover potential new therapies. Dr. Germain-Lee gives talks and webinars locally, nationally, and internationally on rare bone disorders and serves on the Scientific Advisory Panel of the Rare Bone Disease Alliance as well as the International Expert Consensus Panel on Pseudohypoparathyroidism and Related Disorders. Through her work as vice president of the Human Growth Foundation, she focuses on expanding education and research for those with bone disorders that affect growth. She is a long-time advocate for patients with rare bone disorders at the local, regional, national, and international levels and is also involved in advancing research as an elected member of the Connecticut Academy of Science & Engineering.

Under the umbrella of the Center for Rare Bone Disorders are two subcenters:

- **Albright Center:** This is the first and only center dedicated to Albright hereditary osteodystrophy (AHO), which includes two subtypes called pseudohypoparathyroidism type 1A and pseudopseudohypoparathyroidism. Dr. Germain-Lee has evaluated the largest population of patients with AHO worldwide, and patients travel from throughout the United States and from other countries to the Albright Center. She also has developed a bedside-to-bench research program focused on her patients as well as her knockout mouse model for AHO. Joint work in AHO by Neetu Krishnan, DO, (pediatric endocrinology fellow) and Dr. Germain-Lee this past year was selected for an oral presentation session for the Pediatric Endocrine Society's yearly national meeting.

- **Osteogenesis Imperfecta (OI) Center:** This center is co-directed by Dr. Germain-Lee and Nancy Dunbar, MD, MPH, who was promoted to associate professor this year. The Connecticut Children's OI Center is recognized officially by the OI Foundation and is a premier site in New England and the mid-Atlantic for patients with OI to be evaluated and treated. This center provides clinical care to OI patients and provides education and support sessions, which were halted temporarily due to the pandemic but have been started again virtually, with Drs. Dunbar and Ana Menendez (pediatric endocrinology fellow) working to make these sessions available in Spanish. In terms of research in OI, Dr. Germain-Lee has an established translational research program that includes both clinical research studies as well as basic science laboratory investigations utilizing mouse models of OI, and she is working toward developing new treatments for this condition. (Please see Research section.)

  Additional rare bone disorders are seen extensively by Drs. Dunbar and Germain-Lee including hypophosphatemic rickets, hypophosphatasia, and a wide array of skeletal dysplasias (among a multitude of other genetic bone diseases). Dr. Krishnan has become actively involved in this work during her fellowship with plans to pursue this as a new faculty member in our division as of July 2022.

Metabolic Bone Clinic: Dr. Dunbar continues to direct and expand this clinic at Connecticut Children's and Shriners Hospitals for Children® in Springfield, MA. The clinic focuses on all forms of bone disorders as well as disorders of mineral metabolism. Additionally, Dr. Dunbar has developed a focus on bone loss in children with various physical impairments. She is a certified clinical densitometrist through the International Society for Clinical Densitometry, permitting her to provide official interpretations of scans evaluating bone mineral density (DXA scans) using the state-of-the-art DXA machine at Connecticut Children's. She also provides these services to all other divisions. Dr. Dunbar serves on the editorial board of the *Journal of the Endocrine Society*.

Global Health: Dr. Dunbar has been crucial in developing a type 1 diabetes clinic in Haiti, and she, along with Comalita Elliott, have been working with local pediatric staff at Hôpital Sacré Coeur in Milot. Their ongoing fundraising efforts have supported the needs of the program. Dr. Dunbar has made a significant impact in the improvement of diabetes care within this program based on quantitative measures, and even in the midst of the pandemic, she maintains communication with the staff at Hôpital Sacré Coeur.

Lipid Disorders Clinic: Sunitha Sura, MD, assistant professor, has headed up this unique clinic, which has been fully running with a specialized nutritionist over the past four years. This clinic has continued to expand greatly. It is one of the few lipid clinics in the country that is within a pediatric endocrinology division and focused solely on the management of childhood lipid disorders. Dr. Sura is a member of the National Lipid Association and has given grand rounds and other talks educating practitioners on the management of lipid disorders. She recently received her American Board of Clinical Lipidology certification from the National Lipid Association, and she is part of the Pediatric Endocrine Society's Lipid Special Interest Group.

Turner Syndrome Clinic: Dr. Loechner took over the Turner Syndrome Clinic upon her arrival, and with Karen Rubin, MD – *professor emeritus*, world-renowned expert in Turner Syndrome, and prior director of the clinic – the clinic will be expanding. This clinic involves a highly specialized interdisciplinary team including a nutritionist as well as a psychologist and nurse who both have expertise specifically in this disorder.

Thyroid Center: A multidisciplinary program for treating thyroid nodules and thyroid cancer, which involves Endocrinology, Pediatric Surgery, Pathology, Radiology, and Nuclear Medicine, is headed up by Dr. Bilbao and Connecticut Children's Surgeon-in-Chief Christine Finck, MD, FACS. Dr. Bilbao has been involved with Dr. Finck in building this center even further with the goal of continued regional expansion.

Cancer Survivorship: Dr. Riba-Wolman is the endocrinologist for the REACH for the STARS Cancer Survivorship Program, a multidisciplinary clinic in the Hematology-Oncology division for long-term survivors of childhood cancer. She also is involved in the Neuro-Oncology Program, a multidisciplinary clinic involving Oncology, Neurosurgery, and Endocrinology. She has embarked on clinical research in areas involving the endocrine disorders observed in children with cancer and is a member of the New England Childhood Cancer Consortium.

Obesity: Dr. Trapp has expertise in caring for children with co-morbidities secondary to obesity as well as those with early onset obesity, type 2 diabetes mellitus, and Prader-Willi Syndrome. Her research interests lie in this area as well. She continues as co-chair of the national Obesity Special Interest Group for the Pediatric Endocrine Society. Dr. Phulwani also works in the area of obesity and serves as the endocrinologist in the multidisciplinary Bariatric & Weight Management Clinic overseen by members of the Pediatric Surgery department.

GLYCOGEN STORAGE DISEASE (GSD) & DISORDERS OF HYPOGLYCEMIA PROGRAM

The mission of the Glycogen Storage Disease & Disorders of Hypoglycemia Program, headed by Dr. Riba-Wolman, is to provide dedicated care and diagnostic evaluation for patients with disorders of hypoglycemia and also provide the best evidence-based care of patients with glycogen storage diseases. The pursuit of research to advance the diagnosis and treatment of these disorders is a central goal (described within "Research" below).

A dedicated team including Dr. Germain-Lee, a metabolic nutritionist, and nurses with prior experience in GSD provide comprehensive care to patients with multiple forms of hypoglycemic disorders, with special attention to patients with glycogen storage diseases and ketotic hypoglycemia, both regionally and beyond. This is the second year under the leadership of Dr. Riba-Wolman, with significant expansion of our newly developed ambulatory program, as well as a broader disease focus. Drs. Riba-Wolman and Komal Parmar

(3rd year pediatric endocrinology fellow until June, 2021) have published their work, as well as presented it at an international meeting this past year. Extensive clinical trials in GSD are underway and described below.

BASIC SCIENCE & TRANSLATIONAL RESEARCH (INCLUDING CLINICAL TRIALS)

Bone Loss & Muscle Wasting

Research efforts have extended even beyond Earth with Dr. Germain-Lee and her collaborator, Dr. Se-Jin Lee, MD, PhD, from the Jackson Laboratory and University of Connecticut School of Medicine. They sent mice to the International Space Station last year and continue to examine the role of a novel experimental agent that was created by Dr. Lee that can increase both muscle and bone mass. Microgravity causes both muscle and bone loss, as is evident in astronauts during space travel. This mimics the same phenomenon observed in patients who have bone disease, muscle wasting, and chronic illnesses, as well as in those who are elderly. By giving this experimental drug to mice exposed to systemic microgravity, the goal was to see whether bone and muscle loss were prevented. This has the potential for therapeutic use not only in astronauts in space but also in many patients here on Earth who suffer from either muscle-wasting disorders, bone fragility disorders, or both. Their scientific investigations successfully revealed that the novel experimental agent was able to improve bone and muscle mass in spite of microgravity, and further research is underway. These results were published in the *Proceedings of the National Academy of Sciences* last year by the scientific team headed by Drs. Lee and Germain-Lee, as well as the three American astronauts who conducted the experiments, and the research has had widespread media coverage. Drs. Germain-Lee and Lee have continued an intensive focus on this research over the past year with the goal of moving this therapeutic strategy further.

Rare Bone Disorders

Dr. Germain-Lee has continued her long-standing research efforts in the clinic and the laboratory on rare bone diseases, specifically Albright hereditary osteodystrophy (AHO), for which she has developed a mouse model, and also osteogenesis imperfecta (OI, brittle bone disease), for which she conducts translational and basic science research involving both patients and mouse models. Her laboratory is within the Center for Regenerative Medicine and Skeletal Development at UConn Health.

One focus of this research program has been to investigate the pathogenesis of AHO and to develop new treatments. One of the key findings by Dr. Germain-Lee has been the identification of growth hormone (GH) deficiency in approximately two-thirds of patients with AHO, and GH treatment has now become well established for those patients who are GH deficient. Another major area of this research program has been to understand the hormonal control of bone development and homeostasis through investigations of rare bone disorders, specifically understanding the basis for bone abnormalities in AHO, including effects on both bone mineral density and the development of heterotopic ossifications. Dr. Germain-Lee and Patrick McMullan, an MD/PhD student from the University of Connecticut School of Medicine who is pursuing his PhD in Dr. Germain-Lee's laboratory, have published their results in this area during the past year. Dr. Krishnan and two research assistants are also a part of these efforts in AHO research. A second disorder that has been a focus of the laboratory's research program is osteogenesis imperfecta (OI), and Dr. Germain-Lee's investigations showed that blocking the activin/myostatin signaling pathway in a mouse model of OI can lead to increases in both bone and muscle mass, raising the possibility of a new therapeutic strategy in OI patients.

Glycogen Storage Disease (GSD)

- **Clinical Research:** The first trial of gene therapy for Glycogen Storage Disease (GSD) Type Ia began in July 2018 with David Weinstein, MD, MMSc, as principal investigator and Connecticut Children's/University of Connecticut as the lead site. Since Dr. Weinstein's departure and the transition to Dr. Riba-Wolman as the principal investigator in 2020, our site remains the largest in a multinational trial sponsored by Ultragenyx. Dr. Loechner joined these efforts as of November. We will be the first to screen and treat patients 16-17 years of age in the phase III study.

  Utilizing new mRNA-based technology and with the sponsorship of Moderna, Dr. Loechner leads this novel Phase I clinical trial with GSD1a with her co-PI at UConn to see if mRNA infusions are both safely tolerated and efficacious. Screening will commence in early 2022. Other clinical research studies and repositories for GSD, under the direction of Emily Germain-Lee, MD, and Katherine Herbst, MS, are also in progress.

- **Laboratory Research:** Under the direction of Youngmok Lee, PhD, assistant professor at the University of Connecticut School of Medicine and basic science director of laboratory research in GSD, investigations are being conducted in the laboratory facilities at the University of Connecticut Cell and Genome Sciences building. The laboratory mainly focuses on two types of pre-clinical research for GSD-Ia, GSD-Ib, GSD-VI, and GSD-IX using disease model animals, including, 1) the elucidation of pathological mechanisms underlying the complications of GSDs, such as liver cancer, steatosis, and fibrosis as well as immune cell dysfunction; and 2) the development of new gene therapy technology and evaluation of its efficacy and safety. The goal of the research is to understand the pathogenesis in GSDs and to develop new therapeutic strategies for treatment.

Diabetes

Dr. Demirci continues to collaborate with Derya Unutmaz, MD, a researcher at the Jackson Laboratory, to investigate the intestinal microbiome and the link between food, microbes, and diabetes with the ultimate goal of finding which genes are turned on and off as a result of the interaction between the microbiome and the immune system.

Dr. Germain-Lee is also working on basic science research in diabetes. She is currently collaborating on investigations with Dr. Se-Jin Lee of the Jackson Laboratory and University of Connecticut School of

Medicine. Their studies are aimed at discovering new strategies to improve the body's ability to control blood sugar levels. The goals of this project, which is being partly supported by a grant from the National Institutes of Health (NIH), are to enhance the ability of the pancreas to produce insulin as well as to improve the responsiveness of peripheral tissues to insulin. The focus is to understand the role of secreted proteins belonging to the transforming growth factor-ß superfamily of signaling molecules in regulating metabolism.

Sturge-Weber Syndrome

In addition to Dr. Germain-Lee's research on AHO and OI, she has also been investigating the clinical/hormonal phenotype in patients with Sturge-Weber syndrome (SWS) over the past two decades. With Anne Comi, MD, at the Johns Hopkins University School of Medicine/Kennedy Krieger Institute, where Dr. Germain-Lee worked for 15 years until 2016, they were the first to demonstrate that these patients have a multitude of hormonal abnormalities. This year they published their findings of the relationship of Vitamin D status to neurologic manifestations of the condition.

Adrenal Disorders

Dr. Loechner is the principal investigator at our site for an industry-sponsored Phase III trial (CAHtalyst Pediatric Study, Neurocrine Biosciences) that will test a new pharmacologic agent for its ability to treat children 2-17 years of age with congenital adrenal hyperplasia.

FEDERAL GRANTS

NIH

NIH R01 AG052962 – Co-investigator: Emily L. Germain-Lee, MD; (PI: Se-Jin Lee, MD, PhD). TGF-ß Family Members and Their Binding Proteins in Aging Skeletal Muscle. 9/15/17 – 5/31/22.

Other Federal Grants

Association of Maternal and Child Health Programs (AMCHP) – PI: Karen Rubin, MD. Leveraging Telehealth and the Family Voice to Deliver on the Promise of Newborn Screening. 9/29/20- 4/30/21.

HRSA Award – PI at site: Karen Rubin, MD. Connecticut Newborn Screening System: An Integrated Approach to Improving Long-term Health Outcomes. 8/1/20-7/31/22.

State Grants

Connecticut DPH – PI: Karen Rubin, MD. Provision of a Diagnostic and Treatment Network for Connecticut's Newborn Screening Program Utilizing a Population Health Approach. 7/1/18 - 6/30/22.

Children's Health Fund, Child Health Development Institute CT – PI: Karen Rubin, MD. Expanding Behavioral Health Services in Primary Care Through Co-Management and Implementation of a Learning Community. 1/1/21-6/30/22.

University of Connecticut School of Medicine – Co-investigator: Emily L. Germain-Lee, MD; (PI: Se-Jin Lee, MD, PhD). Continuation of research on "Mighty Mice in Space: Preclinical Evaluation of a Broad Spectrum Myostatin Inhibitor to Prevent Muscle Wasting and Bone Loss Due to Disuse." (Previously sponsored by the International Space Station U.S. National Laboratory/NASA/CASIS/The Jackson Laboratory). 10/6/20 – 10/5/22.

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DIVISION OF EXCELLENCE IN PATIENT SAFETY & CLINICAL QUALITY

The Division of Excellence in Patient Safety and Clinical Quality strives to support the mission of Connecticut Children's to partner with patients, families and communities using evidence-based models resulting in zero-harm, highest quality, world-class outcomes in a culture based on equity, continual improvement and compassionate care, through the integration of patient safety and quality across the institution. The division's goal is to drive our culture of safety to the standard of zero-harm, to provide the highest quality care, to teach methods of improvement, and to use research to inform our programmatic efforts and innovations.

In 2021, the faculty of the Division of Excellence in Patient Safety and Clinical Quality, led by division head Lori Pelletier, PhD, MBA, continued to have far-reaching positive impacts on the quality of care of our patients. As the staff at Connecticut Children's continued to adapt to the ever-changing health care landscape of the pandemic, the faculty of this division proved instrumental in supporting the organization and our peers.

Paramount in that response were the efforts of the Clinical Pathways team led by division faculty member Ilana Waynik, MD. Dr. Waynik has continued to support a multitude of pathways addressing clinical and operational aspects of our COVID response in addition to providing ongoing support of the non-COVID-related clinical pathways portfolio. Her work on the development and expansion of the Clinical Pathways Program helped earn her a promotion to associate professor of Pediatrics in 2021. Many of the division's other faculty members are also highly engaged in clinical pathways and the expansion of these protocols across the entire continuum of care. Eric Hoppa, MD, has been the lead of multiple pathways related to the Emergency Department and was also promoted to associate professor of Pediatrics in 2021.

The Simulation Team, under the direction of Carla Pruden, MD, MPH, continued to support the design and implementation of COVID-related processes, as well as develop new and innovative methods of supporting ongoing educational, training, and process-development simulations, across both inpatient and ambulatory areas of the hospital and our care network.

As the organization and team members learned to balance continued adaptation to the pandemic with resumption of standard operations, our division faculty excelled in promoting the highest quality and safest care for our patients. As an organization, we achieved our lowest ever Solutions for Patient Safety (SPS) Serious Harm Event rate with our division members engaged in leading many aspects of this improvement work. Daniel Fisher, MD, and Heather Tory, MD, MPH, led work on adverse drug events as co-chairs of the Medication Safety Management Committee. Natalie Bezler, MD, will be stepping into the co-chair role in the coming year.

Medication safety was a key focus of the faculty in 2021, with Drs. Bezler, Fisher and Tory leading work on medication reconciliation practices across the organization, and Logan Jerger, MD, promoting this initiative in the ambulatory setting. Sherene Mason, MD, MBA, engaged in ongoing efforts to reduce nephrotoxic-medication-associated acute kidney injury; Dr. Bezler in reducing chemotherapy-associated medication errors; and Jennifer Girotto, PharmD, in championing the Antimicrobial Stewardship Program, including development and implementation of a new electronic application and platform for antimicrobial stewardship data and resources. (https://app.firstline.org/en/clients/187-connecticut-childrens)

Other areas of faculty focus in reducing our serious harm events included Alex Golden, MD, MMM, leading work on IV access and prevention of central line-associated bloodstream infections (CLABSI); David Sink, MD, with ongoing work in reducing CLABSI and unplanned extubations across our network of NICUs; Mariann Kelley, MD, who also supports the Simulation Program, with impactful work in analysis and

improvements to our emergency response protocols and reduction in our out-of-ICU code metric in her roles as co-chair of the Emergency Response and Code Blue committees; and Brendan Campbell, MD, MPH, leading work on reducing surgical site infections.

Under the leadership of Dr. Campbell, who was promoted in 2021 to the role of medical director for the Division of Pediatric Surgery, we received our re-verification as a Level 1 Pediatric Trauma Center, and for the first time, were verified as a Level 1 Pediatric Surgery Center by the American College of Surgeons and the Children's Surgery Verification Program. These designations recognize Connecticut Children's for its delivery of best-in-class care. Dr. Campbell also continues to lead multiple improvement initiatives across our surgical departments through our involvement in the National Surgical Quality Improvement Program.

Drs. Tory and Bezler continue to lead the resident quality improvement educational curriculum, with incorporation of resident involvement in real-time safety event investigations as part of a partnership with the UConn Graduate Medical Education (GME) Office.

The work of the faculty of the Division of Excellence in Patient Safety and Clinical Quality, with multidisciplinary partnership, has been instrumental in the efforts to continue providing highest quality and safest care to our patients, and we look forward to ongoing efforts to promote the quality of care for patients throughout the region.

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Heather Tory, MD, MPH
Ilana Waynik, MD

GENERAL PEDIATRICS

The Division of General Pediatrics is committed to fostering optimal health and well-being of children, families and communities.

To realize this mission, we provide exceptional clinical care in partnership with families, teach evidence-based clinical pediatrics to the next generation of pediatric health-care providers, and pursue original research and vigorous advocacy around issues important to children, families and the public. Our activities place special emphasis on caring for children with special health-care needs, including disadvantaged children, children growing up in low-income families, and children with complex and chronic health conditions.

The Division of General Pediatrics continues to provide the majority of pediatric primary care to Hartford's children through the ambulatory and primary care clinics at Connecticut Pediatrics at Community Health Center (CHC), Inc., Connecticut Children's Primary Care East/West, and the Burgdorf/Bank of America Health Center. Members of the Division of General Pediatrics provide ambulatory care to infants, children, and adolescents, and inpatient care in the newborn nurseries at Hartford Hospital in Hartford, CT, and John Dempsey Hospital/University of Connecticut Health Center in Farmington, CT, and at Connecticut Children's for children with lead poisoning. Our ambulatory services include health supervision, behavioral health care, chronic disease management, and urgent care using a medical home model. The division houses innovative, community-wide clinical programs such as the Hartford Regional Lead Poisoning Treatment Center and the Reach Out and Read literacy program. Division faculty have gained regional and national prominence for clinical research, education, and program development in the fields of lead poisoning and prevention, integrated behavioral health, early obesity prevention and emergent literacy promotion.

In 2021, the division welcomed two talented new faculty members: Eileen Mercurio, MD, and Elinor Coloccia,

PsyD. Dr. Mercurio joins us from the Cleveland Clinic where she served as a pediatric hospitalist. She sees primary care patients and teaches at the Burgdorf/ Bank of America Health Center. Dr. Coloccia joined our Farmington site as an integrated primary care health psychologist, replacing Christine Chew, PhD, who has transitioned to the Medical Coping Clinic. This year also marked APRN Dianne Powers' retirement after providing care to the children of Hartford at Connecticut Children's since the doors opened in 1996, and the departure of Alberto Cohen-Abbo, MD, after 23 years of dedicated service to Connecticut Children's divisions of Primary Care and Pediatric Infectious Diseases, and the University of Connecticut Pediatric Residency Program.

Faculty members in the division play a central role in education in the University of Connecticut system by providing the majority of pediatric primary care and newborn nursery educational experiences for medical students and pediatric residents in the region. Rotating learners from UConn and other institutions include family practice, dental, and psychiatry residents, and students from nurse practitioner, physician assistant, and medical assistant programs. Division members serve on a wide variety of hospital, university and state committees. Membership on national committees includes the National Center for Culture Competence Advisory Group (Dr. Cohen-Abbo), the Reach Out and Read National Medical Advisory Committee (division head Catherine Wiley, MD) and the Society for Pediatric Dermatology Education Committee (Keri Wallace, MD). Dr. Wallace continues her work as core faculty lead to develop and restructure the pediatric dermatology rotation and curriculum. Research interests in the division include emergent literacy, cultural competence, immunization, obesity, and screening in primary care. Division members collaborate in a wide variety of projects, including the Asthma Center's Easy Breathing© program and various co-management protocols with Connecticut Children's pediatric subspecialists.

In response to the SARS CoV-2 pandemic, primary care continues to provide care via telehealth across all sites. Faculty members incorporate residents and medical students into this clinical experience. Andrew Carlson, MD, core faculty lead, continues his work developing a formal primary care telehealth curriculum.

Grael O'Brien, MD, MPH, continues as site director for CORNET (Continuity Clinic Research Network) of the Academic Pediatric Association and has been active on the UConn School of Medicine Curriculum Reform Committee. Dr. Wiley continues her advocacy work in the area of emergent literacy and is medical director of Reach Out and Read Connecticut. Jody Terranova, DO, continues her work on the science subcommittee of the Governor's COVID-19 Vaccine Advisory Group. Nancy Trout, MD, MPH, serves on the COACH network of the American Academy of Pediatrics Section on Obesity. Amira Mohamed-Ahmed, MD, was accepted into the Harvard Medical School Safety, Quality, Informatics and Leadership Program.

Jennifer Haile, MD, received a continuing grant from the Connecticut Department of Public Health for the Hartford Regional Lead Poisoning Treatment Center. Dr. Trout and Stacy Chandna, MS, CIP, continue their early childhood obesity prevention project, "Start Childhood Off Right," funded by the Kohl's Cares foundation.

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HEMATOLOGY–ONCOLOGY

The year 2021 continued to hold its challenges for Connecticut Children's and the rest of the world. The Division of Hematology-Oncology had perfected its option to offer telehealth visits when the opportunities presented themselves, but primarily we continued to see our patients in person. In fact, we saw 11,237 patients in 2021 compared to 10,320 in 2020 and 10,099 in 2019.

During 2021, we had some changes in the leadership roles with Dr. Ching Lau being appointed as the first scientific director of the Center for Cancer and Blood Disorders at Connecticut Children's. With his appointment to this new role, Dr. Lau continues to serve as a professor of Pediatrics in the Department of Pediatrics and hold the Marty Gavin Chair in Pediatric Hematology-Oncology, but he stepped away from the role of division head of Hematology-Oncology. Michael Isakoff, MD, was appointed the new head.

We launched our Oncofertility clinic in April followed by the Adolescent and Blood Disorders Clinic (the "ABC" clinic) in July of 2021. The ABC clinic is a joint effort between Hematology and Adolescent Medicine and functions like the Sickle Cell/Pulmonary clinic. We also launched our "Fellow's Clinic," which serves as a consolidated continuity clinic for our fellows with faculty rotating as preceptors.

Our Hemostasis and Thrombosis Program is thriving in three locations including Hartford, Farmington, and Shelton, with recent extension of our services to South Hadley, MA. The rapid growth of the program and services we provide benefit the patients with bleeding and clotting disorders. The program also provides comprehensive care for these patients closer to their homes, sparing them and their families the need to travel a distance.

Despite the continued challenges posed by the pandemic, many of our staff received recognitions throughout the year:

- Eileen Gillan, MD, was awarded as Top Doc 2021 – Pediatric Hematology-Oncology from *Connecticut Magazine*.
- Michael Isakoff, MD, began his two-year term as president of the Connecticut Children's Medical Staff office in January 2021.
- Katherine Steven, APRN, was awarded the 2021 APP Excellence Award at the Annual Medical Staff Meeting in November.
- Raul Vasquez, MA, was recognized as one of five recipients of the 2021 Angel Awards.
- Jeanie Walczak, RN, BSN, CPON, was recipient of the Daisy Award for Extraordinary Nurses.
- Kelly Ha, MSW, was honored as a young professional demonstrating leadership at Hartford's Finest through the Cystic Fibrosis Foundation.

Additionally, a number of us were invited to be speakers at regional and national meetings:

- "Updates on Sickle Cell Disease Management," Day Kimball Hospital Grand Round, (Dr. Donna Boruchov)
- "Changing the Tide for Sickle Cell Disease: Highlighting Racial Health Inequities," hosted by the Greater Boston Sickle Cell Disease Association (Siddika Mulchan, PsyD)
- "It's a Mab, Mab, Mab World," presented at the APHON 2021 Annual Conference (Meredith Lake, MSN, APRN, CPNP-AC, CPHON, Karina Engelke, MSN, APRN, CPON, and Tara Boyd, DNP, APRN, FNP-C)
- "Recent Findings in the Pathogenesis of Pediatric Ependymoma" at the Brain Tumor Epidemiology Consortium (BTEC) special webinar, (Dr. Ching Lau)
- "Registrar Data for Benign and Borderline CNS Tumors" hosted by the National Cancer Registrars Association (NCRA) (Dr. Ching Lau)

Despite the pandemic, research activities were maintained at a high level in our division leading to publication of multiple papers outlined below and receipt of external research grants including:

- Young Investigator Award from CureSearch to Joanna Gell, MD
- National Pediatric Cancer Foundation's Leader in Clinical Trials and Site Excellence Award to Michael Isakoff, MD, to further support Hematology/Oncology's clinical trials unit
- The Alex's Lemonade Stand Foundation Reach Grant to Ching Lau, MD, PhD, for developing "Novel Genomic Diagnostics for Intracranial Germ Cell Tumors"
- West Family Foundation Grant to Ching Lau, MD, PhD, for acute myeloid leukemia (AML) research
- Hartford Foundation for Public Giving grant to Siddika Mulchan, PsyD

Our fellowship program continues to thrive under the leadership of Andrea Orsey, MD, MSCE.

Our first Hematology-Oncology fellow, John Norko, MD, graduated from our program in June, 2021. We were pleased to welcome Erin Pastor, DO, into the program as a first-year fellow joining Tatiana Lara-Ospina, MD, who will complete the program in 2022.

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HOSPITAL MEDICINE

The Division of Pediatric Hospital Medicine (PHM) provides top quality, family centered care for the hospitalized children of our region. Now spanning four inpatient sites, we emphasize an evidence-based approach, driven by best practice. We lead in educational excellence, as the primary teachers for medical students and residents in the inpatient pediatric setting in our region. We teach learners from two medical schools, our own pediatric residency program, and from four family medicine residency programs. Our young field evolved in 2019 into a formal subspecialty, and in 2021 we experienced our second year as board-certified pediatric specialists. The field of PHM continues to grow and thrive, and at Connecticut Children's, we help to shape that growth through our own commitment to clinical excellence and academic scholarship.

The division continued to serve a front line role in the care of hospitalized children afflicted with COVID-19 or the related illness of multisystem inflammatory syndrome in children (MISC-C). The year also saw an escalation in what we refer to as "the hidden pandemic" – the unprecedented surge in pediatric mental health disorders, some of which ultimately lead to medical admission. As children experienced continued disruption of their routines and social outlets, their levels of anxiety and depression rose to new heights. We saw on our clinical service a 40 percent increase in eating disorders and a spike in adolescent suicide attempts. In collaboration with our psychiatry colleagues, we worked to stabilize these children medically, and then faced the common challenges of finding adequate mental health services after discharge. Amidst these ongoing challenges, we continue to focus on our core areas of impact – our clinical work, medical education, quality improvement, scholarly activities, and hospital leadership.

On the clinical front, we again had our busiest year ever, characterized by an unusual pandemic-related surge of respiratory illness in the summer of 2021. Patient volume increased by 15 percent over the prior year, and has doubled over the past five years. We continue to provide inpatient care in four locations – at our main campus in Hartford, in our 12-bed satellite unit in Waterbury, as well as within the inpatient units and newborn nurseries of Danbury and Norwalk hospitals. We have brought to these practice sites our own brand of care, with an emphasis on family centered rounds, evidence-based clinical pathways, and coverage models that promote strong communication with our community partners. Our hospitalists now cover 100 percent of general pediatric inpatients in all of these four locations.

As a division, we enjoy a strong partnership with our advanced practice provider (APP) colleagues. The group's leader, Basia Adams, DNP, APRN, continued to co-direct the new Office of Advanced Practice, which oversees professional development for more than 180 APPs at Connecticut Children's. This group remains an essential and valued part of our clinical work force. We realize that fostering the talents of our APPs will help their growth while also benefitting Connecticut Children's and the patients we serve.

In the realm of medical education, we led the institution on many levels. For the second year in a row, the pediatric residents awarded Patricia Garcia, MD, the 2021 Milton Markowitz/Edwin Zalneraitis Award for Outstanding Contribution to House Staff Education and Career Development. PHM again enjoyed the greatest number of nominations for the 2021 Overall Faculty Award for Excellence in Teaching. Three PHM division members won the monthly McNeill Teaching Award from the pediatric residents. This honor went to Drs. Hayley Wolfgruber, Melanie Rudnick, and Patricia Garcia.

Members of the division continue to lead in numerous educational positions. Joanne Crowley, MD, continues as director of Undergraduate Pediatric Education for the University of Connecticut. Dr. Rudnick leads the Quinnipiac University Netter School of Medicine pediatric clerkship at Connecticut Children's. Marta Neubauer, MD, oversees the highly regarded Netter medical student rotation at the St. Mary's unit in Waterbury. Of note, a record number of Netter medical students are choosing a career in pediatrics this year (16 out of 90 students graduating in 2021). It is likely that our faculty have helped to inspire that trend. In a novel and innovative interdisciplinary approach, our APP group is assisting in the education of the Netter students. Christine Skurkis, MD, continues in her role as associate director of the pediatric residency program. She also has a national role as chair of the curriculum learning group for the Association of Pediatric Program Directors. As a division, we continue to pursue a goal of establishing our first Pediatric Hospitalist Medicine Fellowship program, which will be led by Allyson McDermott, MD. She already leads in this area as a member of the National Council of Pediatric Hospital Medicine fellowship directors.

On the quality improvement front, our lives were dominated by COVID-19, and we are proud that one of our own, Ilana Waynik, MD, leveraged the strengths of our Clinical Pathways Program to help lead us all. She worked with Grace Hong, APRN, to continue the rapid development and ongoing alteration of several COVID-19-related clinical algorithms at Connecticut Children's. These were invaluable in guiding us in daily patient, staff and family care. Ever-evolving policies and changing clinical approaches mandated the use of these standardized pathways to provide the highest level of care for our COVID-19 and MIS-C patients. For this incredible accomplishment, she shared with Ms. Hong the Physician's Quality Cup Safety Award. Dr. Waynik is the first recipient of this award from our division. The Clinical Pathways Program continued to evolve under her oversight, with now over 45 Clinical Pathways in active use. We achieved a major milestone as the program enjoyed a full year as an Internet site and received over 50,000 page views in 2021. Physicians from all over the country benefited from our work in leading best practice, extending the impact of Connecticut Children's far beyond our doors.

There were great academic strides in the past year. Multiple faculty members were able to deliver talks or lead workshops virtually at the national level for a number of organizations: the Pediatric Academic Society, Pediatric Hospital Medicine, the Association of Pediatric Program Directors, the Council on Medical Student Education in Pediatrics, and the American Academy of Pediatrics. Dr. Crowley and Alex Hogan, MD, delivered grand rounds presentations regionally in their areas of

expertise. Dr. Hogan assisted our Chair of Pediatrics, Dr. Juan Salazar, in leadership of a multimillion dollar NIH-funded grant to study COVID-19 and MIS-C. As one of eight sites nationally, Connecticut Children's will embark on this study to pursue biomarkers for COVID-19, MIS-C and Kawasaki's disease. Our PHM team will help to ensure the success of this study, as the majority of inpatients will be identified and enrolled from our own clinical service.

Fostering leadership across the continuum has been a priority for our division for many years. Division head Anand Sekaran, MD, served on the 12-member American Academy of Pediatrics PHM PREP editorial board. This group created the first national exam for pediatric hospital medicine, and it will continue to provide this primary learning tool for the PHM board exam. Dr. Sekaran received the American Academy of Pediatrics PHM Collaborative Impact Award for this work. For leadership in the pandemic itself, he received a Healthcare Heroes Award from the *Hartford Business Journal*. Dr. McDermott took over the role of PHM clinical director from Kathy Kalkbrenner, MD, and brought her own professionalism and poise, helping to sustain and nourish our group at a very challenging time. Dr. Neubauer further evolved her leadership role as site director of our St. Mary's unit, bringing a higher level of quality to that location. Beth Natt, MD, continued as the regional clinical director for Hospital Partnerships, and is helping to establish further inpatient sites to optimize "care close to home." Jane Im, MD, passed her qualifying exam and became the first member of PHM, and one of the few at Connecticut Children's, to be board certified in Clinical Informatics. Hareem Park, MD, has taken on the role of director of Utilization Management for Connecticut Children's.

As pediatric hospitalists, we continue to evolve in how we provide value to our patients and families, educate trainees, and improve inpatient care. Our goal is not only to measure our performance against national standards but to be at the top of those standards. Yet as we continue to grow, we strive to maintain our greatest core value of putting patients and families first in all we do.

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Nora Croll, PA-C
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INFECTIOUS DISEASES & IMMUNOLOGY

The Division of Infectious Diseases and Immunology provides outstanding care for children with infections and immune deficiencies and for children and families who require travel advice. Members of the division are also involved in several NIH-funded research projects including spirochetal infection, COVID-19-related inflammatory disorders, as well as antimicrobial resistance and vaccine development.

CLINICAL PROGRAMS

In normal times, the Division of Infectious Diseases and Immunology provides extensive inpatient and outpatient consultation and primary services for children and youth with common and complex infectious diseases, congenital and acquired immunodeficiencies, including HIV care, and the need for travel medicine.

During year two of the COVID-19 pandemic, the division, in addition to other clinical roles, continued to have an expanded role for the organization:

1. **SARS CoV-2 pathways for clinical care of infected children:** Numerous clinical care pathways for the management of SARS CoV-2-infected children were created and continually updated due to the rapidly changing pandemic. These efforts were led by our division's Grace Hong, APRN, and Ilana Waynik, MD, of the Division of Hospital Medicine.
2. **SARS CoV-2 pathways for employees and their families:** Numerous pathways for the protection of employees pre- and post-exposure to COVID-19 infections were created and used as policy by the organization under the leadership of Ms. Hong and Dr. Waynik, and the Infection Control Department.
3. **COVID physician-on-call for the organization:** The Infectious Diseases physician-on-call continued to answer faculty and community physician and provider questions about COVID-19 and provided physician back-up to the One Call Center.
4. **Inpatient consultation:** Inpatient consultations continued unabated during the pandemic in 2021 due to an increase in volume of other non-COVID illnesses as well as in admissions of SARS CoV-2-infected children with acute COVID-19 infection as well as multisystem inflammatory syndrome in children (MIS-C).
5. **Telemedicine for ambulatory patients**: The division pivoted to telemedicine visits to ensure that our patients had continued access during the height of the pandemic. We provided over 980 telemedicine visits for the year. We also saw 724 ambulatory in-person visits and 56 travel clinic visits.
6. **Refugee Clinic:** Under the direction of Melissa Held, MD, the Division of Infectious Diseases offers ambulatory clinical care and initial evaluation for new refugees to the Hartford area.
7. **Friday *Ask the Experts*:** Division head John Schreiber continued in 2021 to provide updates on the CME platform *Ask the Experts* to keep our community informed of the latest scientific and clinical updates regarding COVID-19. The lecture series has maintained strong ratings particularly in the Clinically Integrated Network, and it reaches on average 200 participants weekly.

ANTIMICROBIAL STEWARDSHIP PROGRAM

Under the leadership of Jennifer Girotto, PharmD, Dr. Schreiber, and Hassan El Chebib, MD, the Antimicrobial Stewardship Program (ASP) at Connecticut Children's has continued provide prospective review and feedback as well as expertise to improve resources and ensure optimal use of antimicrobial therapies. The initiatives the program took on included expanding resources to clinicians through launch of the Connecticut Children's-specific Firstline Antimicrobial App in July. The app has allowed the delivery of the ASP resources including pathways, antibiograms, and antimicrobial dosing recommendations to all clinicians throughout the network via mobile and/or the web app https://firstline.org/connecticutchildrens/. The app initially provided similar information that was previously available on the intranet page, and we are working to further expand it. One of the most recent additions to the app is the inclusion of the NICU Sepsis Evaluation and Antimicrobial Use guideline. ASP members worked closely with a group of neonatologists and other specialists involved in neonatal care to standardize and improve infectious disease and antimicrobial recommendations and care of the patients. The other areas of focus this past year have been improving documentations of specific reactions for inpatients with beta-lactam allergies, continued refinement of inpatient and outpatient stewardship activities, and working with the pharmacy to further progress the vancomycin-per-pharmacy protocol to include area-under-the-curve or AUC-based monitoring.

HIV PROGRAM AND SERVICES

Despite the pandemic, the Pediatric and Youth HIV Program at Connecticut Children's, which is comprised of a multidisciplinary team of physicians, case managers, nurses and health advocates, continued to provide timely, family centered, and culturally sensitive care to children, adolescents, and parents infected with and affected by HIV. The program has been continuously funded through the Ryan White program for almost three decades, having been awarded over $20 million from the federal government for the provision of direct HIV patient care services. The Ryan White-funded medical case management team stays abreast of cutting edge, innovative and evidence-based practice modalities, augmenting their skills by participating in professional development opportunities through trainings and workshops such as Motivational Interviewing, Couples Testing, Functional Behavioral Assessment, Adolescent Opioid Screening, Brief Intervention and Referral to Treatment (S-BIRT), and Youth Mental Health First Aid.

The HIV team has established and implemented an evidenced-informed psycho-educational peer-to-peer group that enhances the overall mental health of our patients. The peer-to-peer model has been known to be effective, cost-efficient and looked upon favorably by the Health Resource Services Administration (HRSA). We are finishing our first year of the DPH two-year Integrated HIV Testing and PrEP Navigation Project.

The utilization of pre-exposure prophylaxis (PrEP) as a prevention tool has been incorporated into both the medical treatment side and the Hartford Youth HIV Identification and Linkage (HYHIL)/HIP prevention efforts at our program. Our HYHIL continues to coordinate with and collaborate in community efforts with participating agencies. The Ryan White Program plans to implement the Hartford Teen Pregnancy Prevention Project in the coming year and will continue to provide the Health Interactive Project to Connecticut's high schools.

FELLOWSHIP

Under the direction of Drs. Salazar and El Chebib, the division restarted the Infectious Diseases Fellowship. Laura Kvenvold, MD, is a combined Medicine-Pediatrics fellow with the UConn Department of Medicine and is entering the second year of her fellowship.

Faculty Recruitment: The division welcomed Ashley Howard, DO, as new faculty. Dr. Howard completed her infectious diseases fellowship at Yale New Haven Medical Center and joined the division in 2021.

RESEARCH

Research in the division was challenged by the ongoing COVID-19 pandemic. However, significant achievements in research continued unabated. The Spirochetal Research Laboratories co-directed by Justin Radolf, MD, and Dr. Salazar, entered the third year of a five-year $11 million award from the National Institute of Allergy and Infectious Diseases (NIAID) at the NIH to develop a vaccine for syphilis. The international study team is comprised of researchers from UConn School of Medicine, Connecticut Children's, the Duke Human Vaccine Institute, the University of North Carolina (UNC) at Chapel Hill Institute for Global Health and Infectious Diseases, UNC Project-Malawi, CIDEIM in Cali, Colombia, Masaryk University in the Czech Republic, and Southern Medical University in Guangzhou, China.

The first phase of the project is led by Drs. Radolf and Caimano at UConn Health. High-fidelity three-dimensional models of *Treponema pallidum* outer membrane proteins were generated and used to identify the extracellular loops. The knowledge of the surface-exposed targeted epitopes can then be assessed for their protective capacity and ability to generate an immune response that mediates clearance of the spirochete.

The second phase is directed by Dr. Salazar, Arlene Seña, MD, MPH, associate professor of medicine at UNC-Chapel Hill, and Kelly Hawley, PhD, a research scientist in the Division of Pediatric Infectious Diseases at Connecticut Children's. It is mapping the global diversity of various *Treponema pallidum* strains and determining the degree and positions of outer-membrane protein variability in preparation for a proper vaccine formulation.

The third phase leverages technology developed for HIV research at the Duke Human Vaccine Institute. Armed with knowledge of the structures of the syphilis bacterium outer-membrane proteins generated at UConn Health and Connecticut Children's, the Duke team, led by M. Anthony Moody, MD, can identify B cells that produce antibodies directed against extracellular loops.

Additionally, the Spirochetal Research Laboratories engaged in a new multicenter, international project supported by the Bill & Melinda Gates Foundation. Dr. Hawley, along with an international study team comprised of researchers, is focused on the genomic epidemiology of *Treponema pallidum* strains infecting populations in low- and middle-income countries to inform syphilis vaccine development.

Finally, in an exciting development, a new multicenter, international project led by Dr. Salazar was funded by the National Institutes of Health (NIH) at the end of 2020. The project is focused on the epidemiologic, clinical and laboratory predictors of progression toward severe forms of acute infection with SARS-CoV-2 and MIS-C among children and are thus urgently needed in the fight against COVID-19 in this population. As defined in the NIH Rapid Acceleration of Diagnostics (RADx) program, biomarker discovery can enable risk stratification and guide interventional studies to target COVID-19 patients at enhanced risk of developing complications and/or severe disease. To target this discovery initiative, Dr. Salazar and his team are using a battery of biological, immunological and molecular tests, including Grating-Coupled Fluorescence Plasmonic (GCFP) and advanced flow cytometry, to study children and young adults under 21 years of age with mild, moderate, or severe SARS-CoV-2 infection. GCFP allows the use of disposable biosensor chips that can be mass-produced at low cost and spotted in microarray format to greatly increase multiplexing capabilities. In addition, the team will use a similar biomarker approach for rapid differentiation of patients with MIS-C versus other pediatric infectious or inflammatory conditions where the clinical presentation resembles MIS-C, most importantly Kawasaki disease. The hypothesis is that a child's biomarker profile in response to SARS-CoV-2 infection enables a timely and accurate prediction of severity of COVID-19 and diagnosis of MIS-C, and will help guide treatment strategies and predict patient outcomes.

The division continues to publish in a wide area of research, including clinical reports and reviews and book chapters.

ACTIVE RESEARCH GRANTS

1U19AI144177 – (PIs: J. Radolf and M.A. Moody) Sexually Transmitted Infections (STI) Cooperative Research Centers (CRC): Vaccine Development (NIAID-NIH). Salazar JC, PL – Project II (Sub 5933) – (Co-PLs Drs. Arlene Seña and Kelly L. Hawley). Global sequence and surface antigenic diversity of *Treponema pallidum* outer membrane proteins. 4/2019 – 3/2024. Total costs for Project II, year 1: $738,383. (Direct costs, year 1: $620,736.)

INV-036560 – (PI: Dr. Arlene Sena, University of North Carolina at Chapel Hill) Bill & Melinda Gates Foundation. Genomic epidemiology of *Treponema pallidum* strains infecting women and men in low- and middle-income countries to inform syphilis vaccine development. Hawley K. Subaward 11/2/2021 – 11/30/2022. Total award amount (including indirect costs): $138,943.00.

R01 AI029735 – (J Radolf/M Caimano) NIH/NIAID. RpoS Regulation of *Borrelia burgdorferi* Genes in Vivo. 09/19/2018-08/31/2023. $330,974.

1R61HD105613 – (PI: Salazar JC) NIH/NIAID. Identifying biomarker signatures of prognostic value for multisystem inflammatory syndrome in children (MIS-C). 01/01/2021-11/30/2022. $1,685,063.

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Puckett LM, Newland J, **Girotto JE.** Advancing pediatric antimicrobial stewardship: has pharmacodynamic dosing for gram-negatives taken effect? Antimicrob Steward Healthc Epidemiol. 2021;1(1):e61. doi:10.1017/ash.2021.199.

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MEDICAL GENETICS

The Division of Medical Genetics resides jointly in the Department of Genetics and Genome Sciences, the Department of Obstetrics and Gynecology, and the Department of Pediatrics. The mission of the division is to provide high quality, timely and state-of-the-art genetic consultations, counseling, and interventions for patients from the prenatal period through childhood, adolescence, and into adulthood.

Karen Rubin, MD, currently serves as interim division head of the Pediatric Clinical Genetics Program at Connecticut Children's and continues to focus on building a contemporary pediatric genetics/genomics program.

DIVISIONAL STRUCTURE & STAFFING

A multidisciplinary Genetics Care Team comprised of clinical geneticists, genetic counselors, and metabolic dieticians provides genetics/genomics expertise and services across the life continuum at UConn Health and Connecticut Children's. The consolidated care team is comprised of 2.0 FTE clinical medical geneticists, 2.0 FTE prenatal genetic counselors, 0.8 FTE general genetic counselor, 0.8 FTE newborn screening (NBS) genetic counselor, 1.8 FTE hereditary cancer genetic counselors, 1.0 FTE teratology counselor, and 0.8 FTE metabolic dietitians. The academic, administrative, and clinical offices reside at 11 South Road, Farmington. Pediatric-aged general genetic patients and both adult and pediatric metabolic patients are seen at the Connecticut Children's office at that location, and adult general genetics patients are seen at a UConn Health office at the same address. Prenatal and hereditary cancer genetic counseling services are provided in the outpatient pavilion on the main UConn Health campus. MotherToBaby CT, our teratogen-counseling program, provides additional prenatal counseling services at 195 Farmington Ave., Farmington, CT. This year we successfully created a job description to add a new staff position to the Connecticut Children's practice, a genetic counselor assistant (GCA) to support certified Genetic Counselors (CGCs) and geneticists by assuming time-consuming administrative tasks related to the documentation and pre-and post-testing processes and prior authorizations required for genetic testing.

EDUCATIONAL MISSION

Teaching responsibilities begin in the first year of medical school and extend through the postgraduate years. A substantial number of medical students, residents, fellows, and genetic counselor learners rotate through Genetic clinics and/or attend educational sessions provided by Genetics faculty.

PARTICIPATION ON A NATIONAL COMMITTEE

Sharon Voyer Lavigne, MS, LGC, serves on the board of directors for the Organization of Teratology Information Services (OTIS). (She also serves as vice president of the board of directors for Postpartum Support International, Connecticut Chapter.)

COLLABORATIONS WITHIN UCONN HEALTH

The Medical Genetics division supports UConn's Maternal-Fetal Medicine Program and the Ray Neag Comprehensive Cancer Center in Farmington. Increased adoption of non-invasive prenatal genetic testing and of expanded and improved test offerings for patients with hereditary cancers continue to drive up patient volumes in the prenatal service and the hereditary cancer-counseling program. MotherToBaby CT expanded its statewide coverage over the past year.

COLLABORATIONS WITHIN CONNECTICUT CHILDREN'S

Joseph Tucker, MD, continues in his role as an active member of the GUPPE program, which provides multidisciplinary care for children with disorders of sexual development. The program also includes members of Connecticut Children's Urology, Psychiatry, Psychology, and Endocrinology divisions.

COLLABORATION WITH THE DPH NEWBORN SCREENING (NBS) LAB & THE CONNECTICUT NEWBORN DIAGNOSIS & TREATMENT NETWORK

Connecticut Children's Genetics division has assumed an expanded role in newborn screening (NBS) since the statewide network model went live in 2019 with an electronic NBS Registry within Epic that links to the Department of Public Health (DPH) Lab's electronic system, Maven. The network, funded through the Connecticut DPH, is housed in the Pediatric Clinical Genetics Program at 11 South Road in Farmington. It was planned and implemented by Connecticut Children's under the leadership of Dr. Rubin, and it serves as the communication link between the DPH NBS laboratory, primary care providers or hospital-based medical providers, five subspecialty clinical care teams at both Connecticut Children's and Yale New Haven Hospital (Genetics, Endocrinology, Hematology, Neurology, and Immunology), and families. The network responds to all NBS results that are abnormal in the entire state of Connecticut. In coordination with the infant's health care providers (HCPs), the network initiates a diagnostic work-up and provides support to the HCP and family. If an infant confirms positive for a disorder, the network coordinates treatment and long-term follow-up, working with primary care physicians, hospitals, and specialists statewide. Connecticut now screens for more than 60 disorders.

In the past year, the network received 490 referrals from the DPH NBS lab with 250 abnormal screens in genetics. Our geneticists provided real-time interpretation for these 250 cases, initiated further diagnostic testing, and ensured timely initiation of care. To support the expanded roles of our geneticists, the network provides genetic counseling services and metabolic dieticians to assist patients and their families identified through NBS as having metabolic disorders. The network team includes two nurse coordinators, a nurse Epic-certified analyst who oversees the NBS Registry and related reporting and analytics, and a dedicated genetic counselor.

This year the network expanded family access to genetic counseling services by launching telehealth. In collaboration with PATH CT, the network started one of the nation's first NBS family advisory groups, which resulted in improved workflows and educational initiatives.

The network progressed towards a seamless integration with Yale New Haven Hospital care teams including the streamlining of clinical workflows and enhancement of data-sharing for NBS patients receiving long-term follow-up (LTFU) care at Yale, enabling the network to track all diagnosed infants statewide in the LTFU NBS Registry.

The latest horizon is to implement and evaluate a comprehensive family-centered LTFU NBS model. This project leverages evolving electronic data-sharing platforms for input and merging of indicators of preventive primary care with the already tracked specialty condition-specific quality/outcome indicators. The goal is to improve LTFU outcomes by addressing unmet family needs, and to identify and fill care gaps across the care continuum.

The NBS Network received two significant honors in September of 2021. It was selected as winner of the inaugural GRACE Award, a national prize that recognizes family engagement in NBS. (GRACE stands for "generating real action by cultivating engagement.") Secondly, the network was designated a "cutting-edge practice" by the Association of Maternal & Child Health Programs. It will be featured in early 2022 on the MCH Innovations Database, a searchable database of effective practices grounded in practice-based evidence that positively impact maternal and child health. The designation was bestowed in recognition of our work in developing a telehealth platform.

NBS GRANTS

Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) Award. Project title: CT's Newborn Screening System: An Integrated Approach to Improving Long-Term Health Outcomes. Grant Period: 8/1/21-7/31/22. Award total $998,785, current year $474,408.

Connecticut Department of Public Health Award for the Provision of a Diagnostic and Treatment Network for Connecticut's Newborn Screening Program Utilizing a Population Health Approach. Grant Period: 7/1/18-6/30/22. Award total $2,396,708, current year $599,000.

Federal Grant – Association of Maternal and Child Health Programs (AMCHP) Cares Act: Leveraging Telehealth and the Family Voice to Deliver on the Promise of Newborn Screening. Grant Period: 9/29/20-4/30/21, award totaling $100,000.

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Catherine Silva

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Sherry Gray, MS, MPH, CD-N
Kaitlyn Ware, MS, RD, CNSC, CD-N

Newborn Screening Network Team:

Genetic Counselor

Ginger Nichols, MS, LCGC

RN Coordinators

Debra Ellis
Meghan Criscuolo

RN Epic Analyst

Katherine Raboin

NEONATAL-PERINATAL MEDICINE

The Division of Neonatal-Perinatal Medicine provides state-of-the-art, highest quality care to patients in our state and region within our own Connecticut Children's Neonatal Intensive Care Units (NICUs) and also in our Neonatal Care Alliance of NICUs and local hospital birthing centers. Our expanding network remains anchored by our Level IV NICU in Hartford, which is perennially ranked among the nation's Best in Neonatology by U.S. News & World Report*. Our division members continuously improve newborn care in our region by advancing education, training, collaboration and cutting-edge research.*

Faculty in the Division of Neonatal-Perinatal Medicine provide neonatal care and they support clinical operations and research activities across our region within:

- Our flagship Connecticut Children's Level IV NICU in Hartford, CT
- Our Connecticut Children's Level III NICU at the UConn Health/John Dempsey Hospital in Farmington, CT
- The Level III NICU at the Hospital of Central Connecticut in New Britain, CT
- The Level III NICU at Eastern Connecticut Health Network in Manchester, CT
- The Level III NICU at Danbury Hospital
- The Level III NICU at Norwalk Hospital
- The Level III NICU at St Vincent's Hospital in Bridgeport, CT
- The Level III NICU at Vassar Brother's Medical Center in Poughkeepsie, NY
- Level I birthing centers and nurseries in Connecticut at Hartford Hospital, Backus Hospital in Norwich, MidState Medical Center in Meriden, Charlotte Hungerford Hospital in Torrington, and Day Kimball Hospital in Putnam
- Level I birthing centers and nurseries in New York at Northern Dutchess Hospital in Rhinebeck, and Putnam Hospital in Carmel Hamlet

Our faculty members work collaboratively within these centers to bring the Connecticut Children's standard of highest quality neonatal care to patients in centers close to their homes. In 2021, we strengthened our regional partnerships in neonatology through care alliances with Hartford Healthcare and Nuvance Health™. Through these partnerships, Connecticut Children's reaffirms its support as the provider of choice for expert pediatric and neonatal care to these large health care systems in Connecticut and New York. Within the Hartford Healthcare partnership, Neonatology division head James Moore MD, PhD, and regional clinical director Annmarie Golioto, MD, led efforts to increase the complexity of care provided and the medical team support to the Hartford Hospital Nursery by providing 24/7 services of advanced practice providers and neonatal hospitalists from our division. Drs. Moore and Golioto also are leading the development of a new Level II NICU at Backus Hospital, which will open in 2022. Building on the strength of this partnership and under the leadership of division member and local medical director, Joseph Vitterito, MD, St. Vincent Hospital's neonatal patient volume increased by 50 percent in 2021. Our partnership with Nuvance Health led to significant growth in our division, and under the leadership of new division member and system medical director for Neonatal Services, Adam Czynski, DO, we welcomed five new neonatal faculty to our team. Dr. Moore was promoted this year to president of the Connecticut Children's Specialty Group.

He previously served as vice president for Clinical Network Development and chief clinical network development officer at Connecticut Children's. The year 2021 also saw our division celebrate Dr. Moore's installment as the inaugural holder of the Ross Mayer Endowed Chair for Neonatal Intensive Care.

The division was pleased to host the 5th Annual Symposium on Neonatal Advances, organized by Mariann Pappagallo, MD. This year, the symposium pivoted successfully to a virtual format, with invited faculty experts providing a focused update on neonatal respiratory care practices to a broad regional audience.

MAJOR RESEARCH ACTIVITIES

Adam Matson MD, MSc, is conducting studies on the microbiome and the ways bacterial populations and/or their products influence gut health and neonatal outcomes. His recent published work integrates state-of-the-art sequencing technology and translational research approaches to track specific pathogens in the NICU and to characterize metabolic factors that contribute to necrotizing enterocolitis (NEC) in premature infants. Dr. Matson serves as director of Connecticut Children's Neonatal Biorepository and is helping to establish a neonatal genomics project with the Jackson Laboratory for Genomic Medicine in Farmington, CT.

Naveed Hussain, MBBS, MD, DCH, is using epidemiological and data analytic approaches in evaluating strategies for early identification and prevention of serious neonatal problems with a special focus on NEC and pulmonary hemorrhage. He is working with an international group of collaborators in developing prediction models for these conditions. He is the research director of the Neonatal division and serves as Connecticut Children's global health director for education. He is also a recipient of the iCATCH grant (2021-2023) from the American Academy of Pediatrics for training traditional birth attendants in India.

James I. Hagadorn MD, MSc, is the principal investigator on an NICHD-funded investigation of the relationship between changes in oxygen saturation targets and changes in clinical outcomes in very low birth weight (VLBW) infants in California NICUs, in collaboration with colleagues at Connecticut Children's, Stanford and Penn State universities, and the Children's Hospital of Philadelphia. His recent published research includes investigations of the effects of changing management of patent ductus arteriosus on clinical outcomes in preterm infants in the United States. Dr. Hagadorn currently chairs the NICHD's Pediatrics Study Section.

Shabnam Lainwala, MBBS, PhD, continues her research on preterm infants' neurodevelopmental outcomes. She is the co-principal investigator on an NIH-funded study that investigates the relationship between VLBW preterm infant gut microbiome and neurodevelopmental outcomes. Her recent published research investigates the relationship between nutrition and feeding practices in preterm infants and their short- and long-term clinical outcomes. Dr. Lainwala is also a leader of the New England Neonatal Follow-up Network, a subsection of the Vermont Oxford Network.

Ted Rosenkrantz, MD, continues to collaborate with investigators at the UConn Storrs campus on hypoxic-ischemic injury in newborns. His team examines the effect of gestational age, sex and neuroprotective therapies to determine mechanisms of brain injury and find appropriate therapies for specific subpopulations of asphyxiated newborn infants. Dr. Rosenkrantz is currently working with UConn undergraduate and graduate students to examine the mechanism of the methylxanthines to protect the brain of preterm infants born to women with chorioamnionitis.

QUALITY & SAFETY IMPROVEMENT

Neonatology division members continue to promote and achieve highest quality and safety outcomes for our neonatal patients and families. Our faculty members lead local quality and safety improvement teams within international collaboratives including Solutions for Patient Safety, the Vermont Oxford Network, and the Children's Hospital Neonatal Consortium. Dr. Golioto and David Sink, MD, lead our NICU Central Line Associated Bloodstream Infections (CLABSI) Prevention Team. As a result of their work, zero patients in our Level IV Hartford NICU and our Level III Farmington NICU experienced a CLABSI in 2021. Dr. Sink, Kendall Johnson, MD, and Les Wolkoff, MD, continue to lead efforts that have decreased unplanned extubations (unintentional dislodging of breathing tubes) in our NICUs to levels below national benchmarks.

Our division supports efforts to improve care across our regional Neonatal Network. This year Alaina Pyle, MD, led a multidisciplinary, multisite effort to improve neonatal antibiotic prescribing practices. Dr. Pyle's team brought together our division's seven NICU medical directors, in collaboration with other Connecticut Children's subspecialists and our Antimicrobial Stewardship Team. They developed and implemented evidence-based antibiotic use guidelines, which are now the standard across our network of NICUs and birthing centers. These best-practice guidelines, which are available on a mobile app platform, are accessible to our neonatal providers at the point of care in all of our locations. Building on this successful model of network quality improvement, Drs. Sink and Golioto are aligning with a large New England NICU Quality Collaborative aiming to improve neonatal respiratory care.

Marilyn Sanders, MD, continues to lead the Connecticut Children's Multidisciplinary Bronchopulmonary Dysplasia (BPD) Collaborative to address the clinical care of infants at risk for requiring long-term positive pressure ventilation. This multidisciplinary team includes medical and nursing leadership from the NICU and Pediatric ICU, neonatologists from five referral hospitals, critical care attendings, and specialists from pulmonology, cardiology, otolaryngology, surgery, and palliative care. This team collaborates to optimize care for our patients who are most severely affected by this chronic lung disease of prematurity and to help these infants and their families transition from the NICU to the next appropriate location for ongoing care.

NEONATAL-PERINATAL MEDICINE FELLOWSHIP

Under the leadership of program director Jennifer Trzaski, MD, we successfully recruited two first-year

fellows in 2021: Allison Sadowski, MD, previously a pediatric resident at UConn School of Medicine, and Kinga Zgutka, MD, who completed her residency at Flushing Hospital in New York City. Our fellows continue their academic productivity, and in 2021, they presented their research at several regional, national and international meetings on topics including maternal voice and development of feeding skills in preterm infants, management of hypoglycemia in the NICU, reducing chronic lung disease in VLBW infants, and improving time to early feeding in VLBW infants.

NEONATAL CRITICAL CARE TRANSPORT TEAM

Under the leadership of Dr. Sanders, the Neonatal Critical Care Transport Team is responsible for the transport of critically ill neonates from referring hospitals across New England to a newborn NICU within our network that is appropriate for the baby's individualized medical needs. Our team is able to provide state-of-the-art technologies during transport, including high frequency ventilation, inhaled nitric oxide, and induced hypothermia. We believe in leveraging our regionalized clinical neonatal network to provide the right care, at the right place, at the right time, as close to home as possible.

Using our 24-hour One Call system, health care providers from other locations can access a Level 4 neonatologist to arrange transport of their neonatal patients to the appropriate level of care. Neonatal-Perinatal Medicine Fellows (PGY4-6) are actively involved in the transport program. In 2021, our Neonatal Team, consisting of a medical practitioner – neonatal fellow, neonatal nurse practitioner (NNP), or physician's assistant (PA) – neonatal nurse and NICU respiratory therapist, provided 313 neonatal transports.

NEONATAL NEURODEVELOPMENTAL FOLLOW-UP PROGRAM

Connecticut Children's Neonatal Neurodevelopmental Follow-Up Program (NNFP) is a regional service supporting all high-risk infants born and discharged from NICUs in the Greater Hartford and Eastern and Central Connecticut regions. The program receives referrals from NICUs at Connecticut Children's in Hartford and Farmington, St. Francis Hospital, the Hospital for Central Connecticut, and Eastern Connecticut Health Network, as well as the Connecticut Children's ECMO program, Cardiology, Neurosurgery, General Surgery services, and from community pediatricians. In 2021, Dr. Lainwala's team conducted 800 visits in this program. In 2022, the NNFP plans to expand services by opening a second clinic in Danbury, CT, and it will address the increased behavioral health needs of the patient population by adding the services of a psychologist and a medical social worker.

The NNFP continues to be an integral part of research at Connecticut Children's Neonatology division. Patients enrolled in the NIH-funded RO1 study as well as the Connecticut Children's stool biorepository study receive evaluations in the program. The NNFP provides training to the neonatal fellows as well as to pediatric residents as a continuity clinic experience. Fellows and residents as well as medical and undergraduate students have ongoing research projects within the program, leveraging the extensive NNFP database, and they presented their work at international conferences.

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NEPHROLOGY

In 2021, the Nephrology division continued to experience significant expansion with growth at satellites throughout the region. The division maintained relationships with primary care doctors in three states: New York, Connecticut, and Massachusetts. Our multidisciplinary clinics for posterior urethral valves (PUV), transplant, lupus and kidney stones continued successfully, with the addition of spina bifida clinic support.

Despite the COVID-19 pandemic, the year was marked by many clinical successes, with the growth of Nephrology services at six satellites across Connecticut and Massachusetts, allowing children to access renal care closer to home. The division continues to be robust with four board-certified pediatric nephrologists, a dietitian, two APRNs, six nurses, a dialysis RN manager, and a dedicated full-time social worker. Strong clinical relationships exist with the divisions of Urology and Transplant Surgery to provide seamless, comprehensive care for our patients, regardless of where they are located in our hospital.

The division continues to expand with the addition of Hanan Tawadrous, MD, in early 2021. She joined the division from St. Joseph's University Medical Center in New Jersey. Dr. Tawadrous took on the role of renal transplant director to help grow the program in partnership with Hartford Hospital.

The Division of Nephrology experienced continued steady growth in outpatient visits for the year. These visits included pre-transplant, post-transplant, inpatient, and outpatient consults as well as acute and chronic dialysis. Our renal transplant service continued with one recipient for 2021, and record high rates of vaccinations. The division continues to work closely with the ICU on a regular basis to provide continuous veno-venous hemodiafiltration for our sickest patients.

PRESTIGIOUS RESEARCH & ACADEMIC EXCELLENCE

Nephrology continued to participate in prestigious research consortiums including the SCOPE (Standardizing Care to Improve Outcomes for Pediatric ESRD) Collaborative and the Midwest Pediatric Nephrology Consortium (MWPNC). This collaborative produced quality- and research-driven outcomes in the department. The division continued its participation in multiple research initiatives and demonstrated high productivity with papers and abstract presentations at national and international meetings. The team members sit on various nationwide committees as chairs or co-chairs.

Our team continues to exhibit national and international academic excellence. Morgan Gay, renal dietitian, published successfully as did Sherene Mason, MD, FAAP, MBA, in her field of study regarding childhood systemic lupus erythematosus (SLE).

THE FUTURE

As we look forward to the upcoming year, we eagerly anticipate continued expansion of services and growth with the addition of a fifth nephrologist. We also will continue our extensive research portfolio and increase IRB-approved, research-funded studies.

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Robyn Matloff, MD, MPH
Hanan Tawadrous, MD

Sonal Fisco, APRN
Susanne Johnson, APRN

NEUROLOGY

The Division of Pediatric Neurology evaluates and treats pediatric patients with all types of neurological diseases including headaches, epilepsy, neurocutaneous, neurodevelopmental, and neurogenetic diseases, cerebral palsy, nerve and muscle diseases, movement disorders, and neuroimmunology conditions.

Patients with seizures receive comprehensive care in the Epilepsy Center directed by Jennifer Madan Cohen, MD. The treatment options include medications, ketogenic diet, vagal nerve stimulation and epilepsy surgery in collaboration with the Division of Neurosurgery.

Mark Schomer, MD, leads the neonatal epilepsy and electrophysiology program.

The Neurogenetic Program, led by Louisa Kalsner, MD, enrolls established autistic patients for genetic studies.

William Graf, MD, diagnoses and follows patients with neurodevelopmental conditions.

Francis DiMario, Jr., MD, directs the Neurocutaneous Clinic, which is focused on the evaluation and care of patients with neurofibromatosis and tuberous sclerosis. The clinic is recognized by the TS Alliance (TSA) and Children's Tumor Foundation as part of the Neurofibromatosis Clinic Network (NFCN). It provides advanced treatment for patients with tuberous sclerosis complex (TSC). Dr. DiMario serves as a chair for the Institutional Review Board (IRB).

The Neuromuscular Disease Program, led by division head Gyula Acsadi, MD, is one of the few pediatric Center of Excellence sites for pediatric Charcot-Marie-Tooth disease as part of the inherited Neuropathy Consortium supported by the National Institutes of Health (NIH) Rare Diseases Research Center and the Muscular Dystrophy Association (MDA). The neuromuscular program also has received designation as a SMA (spinal muscular atrophy) Care and Treatment Center by the Cure SMA patient organization.

In collaboration with the Center of Procedural Excellence, we provide new treatments for SMA and muscular dystrophy.

Dina Conley, APRN, runs the headache clinic and collaborates with the Pain Management Program.

William Yorns, DO, serves patients in our Danbury location, and he is building a new movement disorder program.

Elizabeth Ng, MD, completed a neuromuscular and electromyography (EMG) fellowship program at the Hospital for Special Surgery in New York and will start providing EMG procedures in March of 2022.

Division members presented their work remotely at numerous national and international conferences. We continue to be involved in several clinical trials for tuberous sclerosis, autism, epilepsy, muscular dystrophy, and spinal muscular atrophy.

Dr. Graf is the chair for the Child Neurology Society (CNS) Ethics Committee, and a CNS representative for the American Academy of Neurology (AAN) Ethics, Law, and Humanities Committee (ELHC). Dr. Acsadi serves on the Scientific Review Committee of the Child Neurology Society.

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PAIN & PALLIATIVE MEDICINE

The mission of the Pain and Palliative Medicine division is to utilize our multidisciplinary expertise to alleviate pain and stress in children afflicted with acute, chronic or terminal illness.

The division continues to be actively engaged in clinical care, education and research.

Division head William Zempsky, MD, was the first recipient of the Francine L. and Robert B. Goldfarb-William T. Zempsky, MD Endowed Chair for Pain and Palliative Medicine.

In 2021, we welcomed Ross Cleveland, MD, as a part-time member of the division supporting palliative medicine. Dr. Cleveland completed his pediatric residency at the University of Vermont. He did a one-year palliative medicine fellowship at the University of Michigan. He also completed a research fellowship at Dana-Farber in Boston, MA.

We are proud to report that Taryn Hamre, APRN, DNP, was a recipient of the Nightingale Award.

Ms. Hamre and Dr. Zempsky presented grand rounds at Connecticut Children's on pain in sickle cell disease.

Dr. Zempsky presented grand rounds at Children's Mercy in Kansas City and Boston Medical Center. He also spoke at the Sickle Cell Disease of America (SCDAA) national conference and presented to Globin Regional Data and Discovery (GRNDaD), a national Sickle Cell research organization.

Dr. Zempsky obtained grants from the Hartford Foundation for Public Giving and the Mayday Fund. He edited the 2nd edition of the *Oxford Textbook of Pediatric Pain*.

Clare Riotte, DO, lectured to students of the Yale Palliative Medicine Fellowship Program. She became a member of the Connecticut Department of Children and Families (DCF) Medical Review Board.

Emily Wakefield, PsyD, and Dr. Zempsky presented a symposium entitled "Pain-related Stigma in Adolescents with Primary Chronic Pain in the Medical Setting: What Is Getting Lost in Translation?" at the United States Association for the Study of Pain Conference.

Dr. Wakefield presented "It'll Go Away. There's Nothing Wrong With You: The Experience of Pain-related Stigma Among Adolescents With Chronic Pain" at the Center for Advancement in Managing Pain at the University of Connecticut.

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PEDIATRIC & ADOLESCENT GYNECOLOGY

The members of the Division of Gynecology at Connecticut Children's continue to provide state-of-the-art pediatric and adolescent gynecology consultative services in our four offices, the Connecticut Children's operating rooms, the Connecticut Children's emergency room, and in inpatient settings. Outpatient consultations in all areas of pediatric and adolescent gynecology are available in our Farmington, Hartford, Glastonbury, and Rocky Hill offices of Gynecology and Obstetrics, a Division of Women's Health Connecticut.

The clinical services provided at Connecticut Children's and our offices include specialty care in all areas of medical and surgical gynecologic care for children and adolescents. These include reproductive health issues, vulvar and vaginal infections in children and adolescents, management of abnormal uterine bleeding and pelvic pain, adolescent endometriosis, congenital abnormalities of the reproductive tract, ovarian cysts and masses, and adolescent hormonal and contraceptive issues. Our team of gynecologists from Gynecology and Obstetrics, a Division of Women's Health, provides 24/7 coverage of the Connecticut Children's emergency room, operating room, and inpatient floors.

Our surgical services have continued to include da Vinci robotically assisted minimally invasive gynecologic procedures at Connecticut Children's for selected patients. Division head Frederick Rau, MD, continues to perform robotically assisted laparoscopic procedures for reproductive tract anomalies and other complex reproductive tract disorders.

Office evaluations of pediatric and adolescent patients are done at Gynecology and Obstetrics, a Division of Women's Health, by Drs. Rau, Emily Rosenbush, Kerrie Henry, Catherine Graziani, Kelley Sturrock, Erin Pickett, Marlaine Miller, Elizabeth Purcell, Ellen Lamb, and Ashley Young, and Jennifer Kiback, APRN, at locations in Hartford, Farmington, Glastonbury, and Rocky Hill.

Our extensive range of pediatric and adolescent-friendly providers has improved the ability of community physicians to refer families for age-appropriate gynecologic care. We work closely with the community pediatricians and Connecticut Children's subspecialty team members to provide best-practice care. While the COVID-19 pandemic posed extraordinary challenges in 2021, our division members continued to provide expert, safe care to our patients through a combination of in-person and telehealth visits.

Our physicians are members of the North American Society for Pediatric and Adolescent Gynecology, an international organization dedicated to the gynecologic care of children and teenagers. They collaborate at Connecticut Children's with the University of Connecticut School of Medicine obstetrics/gynecology and pediatrics residents and the University of Connecticut School of Medicine and Dartmouth Medical School medical students for inpatient, emergency room, and operating room patient care. Our physicians emphasize a supportive and minimally intrusive strategy while seeing children, adolescents, and families.

For 2022, the division will maintain and improve our patients' access to superior specialty care in pediatric and adolescent gynecology to promote reproductive health and wellness for our community's children and teenagers.

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Marlaine Miller, MD
Ellen Lamb, MD
Ashley Young, MD

Jennifer Kiback, APRN

PSYCHOLOGY

The COVID-19 pandemic exacerbated a national mental-health pandemic, and our Division of Pediatric Psychology was on the forefront. We remained focused on our mission to improve the mental health of all of Connecticut's children through clinical innovation, research, and education. Throughout the second year of the pandemic, our division continued to provide support at every level of our hospital's care system. From creating and introducing exciting new programs to building intra-professional collaborations to being at the leading edge of providing mental health information to community members and health care providers, 2021 was a banner year for the division.

DIVISION OVERVIEW

The Division of Pediatric Psychology is comprised of 15 pediatric psychologists spread across 11 divisions at Connecticut Children's including the Pediatric Obesity Center, Pain & Palliative Medicine, GI, Consultation/ Liaison, Rheumatology, Adult Congenital Heart Disease, the Feeding Team, Hematology-Oncology, Primary Care, Sleep, and the NICU. Our pediatric psychologists are clinicians, researchers with funding at the national and local level, and educators to trainees, colleagues and the community. We are dedicated to improving treatment options, testing new therapies, being the voice for mental health in the state of Connecticut, identifying and addressing disparities in care, and training the next generation of providers.

CLINICAL ACHIEVEMENTS

This year has been one of significant growth for our division with much of 2021 focused on preparing for the January 2022 launch of three new clinics in Hartford. The first, our Medical Coping Clinic, will offer support to our ambulatory clinics by providing mental health care services to youth and their families who have medical conditions impacting their mental health or have mental health conditions that are impacting their medical well-being. Our second clinic, the Medical/ Psychology Intensive Program, is a multiday program created in collaboration with our colleagues in Physical Therapy, Occupational Therapy, and Care Coordination. This program is designed to build a continuum of mental health care, supporting youth at risk for or being discharged from a medical hospitalization. Finally, we are launching our Neuropsychology Clinic, which is designed to enable us to provide evaluations to families throughout the Connecticut Children's system.

In addition to this exciting growth, we have seen expansion throughout our other psychology areas. Our pediatric psychologists, including Preeti Sandhu, PsyD, and Tim LaVigne, PhD, in the Division of Pain and Palliative Medicine, are working to offer Comfort Ability, an evidence-based virtual group treatment for children and adolescents with chronic pain and their families. In addition, Dr. LaVigne developed a cognitive-behavioral group treatment for adolescents and young adults with chronic headaches.

Lauren Ayr-Volta, PhD, developed the transition-off-therapy program for patients who are completing oncology treatment. The program provides them with support and education at this intense time of transition. Psychology division head Melissa Santos, PhD, in conjunction with Connecticut Children's Surgeon-in-Chief Christine Finck, MD, and Priya Phulwani, MD, developed a care pathway for transgender youth with obesity. To enhance interdisciplinary team care delivery for all patients, Brad Jerson, PhD, implemented weekly psychosocial rounding with GI medical providers, nurses, dietitians, and social workers. The year 2021 also marked the establishment of the Teresa C. DeVido Fund for Pediatric Psychogastroenterology, which was established to support the enhancement of specialized psychology services and clinical care delivered to youth and families affected by complex gastrointestinal intestinal conditions.

RESEARCH

Our division members used our expertise to launch several studies to better understand the impact of COVID. Dr. Ayr-Volta and Siddika Mulchan, PsyD, along with several colleagues in the Division of Hematology-Oncology, conducted a "Coping with COVID" study that provided interventions for health care personnel dealing with the stress of COVID. Dr. Santos, along with Emily Wakefield, PsyD, and other collaborators at Connecticut Children's, developed a study to examine vaccine hesitancy in medically complex patients. Outside the area of COVID, our team's research continues to grow. Dr. Wakefield continues work on her NIH K23 grant to advance her work in pain-related stigma for adolescent chronic pain. Dr. Mulchan received funding from the Hartford Foundation for Public Giving to advance her work in bias. Dr. Santos continues work on her NIH R21 grant to advance work in the area of pain and obesity and was awarded a Surgical Innovation Grant to support her work in mobile technology strategies to monitor pain, mood and activity following bariatric surgery.

Our team presented topics related to our work at various national conferences including the Society of Pediatric Psychology Annual Conference (Santos, Wakefield, Mulchan), American Neurogastroenterology and Motility Society Annual Meeting (Jerson), Obesity Week (Santos), and the United States Association for the Study of Pain (Wakefield). Our team also presented critical local talks at Connecticut Children's grand rounds (Jerson, Santos), *Ask the Experts* (Ayr-Volta, Santos), Speak Now for Kids Family Advocacy Week (Mulchan, Santos), and the Care Coordination Forum (Mulchan, Santos).

TRAINING

Our division continued to provide clinical and research supervision to multiple learners at different levels of training through our collaboration with the Institute of Living as well as other area educational institutions. We also grew in new collaborations including the efforts of Amy Signore, PhD, to establish a practicum training site for primary care psychology. We are excited to begin recruitment for our first Division of Pediatric Psychology postdoctoral fellow and Neuropsychology fellow to begin in the fall of 2022.

REACHING OUTSIDE CONNECTICUT CHILDREN'S

Many of our members were featured on social media as well as in local and national news stories to discuss a variety of mental health-related topics ranging from kids

sleep to the mental health crisis. Lynelle Schneeberg, PsyD, was quoted in multiple outlets including *Popular Science, Parade, Real Simple*, MSN, sleep.com, ApartmentTherapy.com, Beanstalk/TinyBeans.com, romper.com, and fatherly.com. Dr. Santos has appeared on multiple local news stations to discuss the surge in youth mental health cases. She also was quoted in the *Hartford Courant* and *Yahoo Life*. Kelly Maynes, PsyD, was quoted in a *Yahoo Life* article on adolescents' use of mobile crisis services. Dr. Jerson was featured on local news stations and was quoted in the *Hartford Courant* and on podcasts, all regarding the challenges of returning to school for the 2021 school year. Our team was highlighted on the Connecticut Children's blog throughout 2021, addressing various mental health topics. Division members also led virtual childhood mental-health presentations to parents through a local library.

Our team remains active in multiple national workgroups and committees. Vanessa Laurent, PhD, was recognized by Sigma Gamma Rho Sorority for her contribution to mental health in the Black community. Dr. Signore assumed the role of associate chair for the American Pediatrics Association (APA) Division 38 Health Psychology at the organization's annual meeting. Dr. Wakefield is the co-chair of the Pain SIG of Division 54. Dr. Jerson served as clinical member-at-large for the APA GI SIG of Division 54 and is on multiple committees within the Rome Foundation Psychogastroenterology Group. Dr. Sandhu participated in the abstract review process for the Society of Pediatric Psychology Annual Conference (SPPAC) to support poster/paper submission for the organization's 2022 Pediatric Conference. Dr. Santos was elected president of the Society of Pediatric Psychology and continued her work leading the group's diversity and anti-racism activities. She remains on the governance board of the Pediatric Obesity Weight Evaluation Registry (POWER), the national registry for pediatric obesity, and is leading the committee writing the psychological guidelines for adolescents undergoing bariatric surgery. She serves on the Integrated Health Committee for the American Society of Bariatric and Metabolic Surgery. Dr. Santos also serves on the Diversity Committee for the Connecticut Hospital Association and is the pillar lead for patient health-care inequities at Connecticut Children's.

THE FUTURE

The year 2021 has been a time of significant growth and engagement in our division. We are eager to continue our evolution in 2022 as we prepare to expand our clinical programming, increase our presence on a national level, and further our mission to provide the finest mental health treatment for Connecticut's children.

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STAFF

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Christine Chew, PhD
Elinor Coloccia, PhD
Bradley Jerson, PhD
Timothy LaVigne, PhD
Vanessa Laurent, PhD
Kelly Maynes, PsyD
Siddika Mulchan, PsyD
Mike Reiss, PsyD
Preeti Sandhu, PsyD
Lynelle Schneeberg, PsyD
Amy Signore, PhD
Emily Wakefield, PsyD
Jennifer Wolpaw, PhD

Lynelle Schneeberg, PsyD
Lisa Backus, PhD
Amy Signore, PhD
Christine Chew, PhD
Preeti Sandhu, PsyD
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PULMONOLOGY & SLEEP MEDICINE

The Division of Pulmonology and Sleep Medicine continued to innovate and revitalize our programs with the recruitment of new team members, and we re-engineered multidisciplinary clinics despite the ongoing pandemic. We continue to utilize virtual clinics to expand our expert care and treatment into patients' homes and to optimize the use of various medications and home equipment. Despite the limitations of COVID-19, our entire division pivoted to diminish the inconvenience of pre-procedural testing for families and to ensure the safety of all patients and staff.

ADMINISTRATIVE UPDATES

Melanie Sue Collins, MD, interim division head of Pulmonology and director of the Department of Cardiopulmonary Diagnostic Services' (CDS), and Lynn Dougherty, RRT, were instrumental in helping the CDS achieve American Thoracic Society (ATS) accreditation this year for its pulmonary function laboratory. The lab also was able to upgrade its equipment for breathing, exercise and cardiac stress tests. The new complement of laboratory devices provides more accurate testing for a diverse population of patients. Our patients also say the equipment is easier to use and more "kid-friendly" than ever.

In October 2021, Dr. Collins was promoted to medical director of the division. In December of 2021, Luke Popiak, our senior manager of Practice Operations, added the COVID Drive-Thru to his responsibilities and immediately turned it into a well-oiled machine that supports our staff in providing safe patient care and offering a reliable option for pre-procedural COVID testing.

MacDara Tynan, MD, MBA, retired in December 2021, vacating the position of interim division head, and Dr. Collins assumed the role, pending the arrival of our new head, Dr. Haviva Veler, on June 1, 2022.

PULMONARY FELLOWSHIP/DIVISION DIVERSITY COMMITTEE

Our division's diversity committee has integrated multiple activities into the department to raise awareness of our similarities and differences. We celebrate and decorate for various ethnically themed months and, based on the theme, daily explore a historical figure thanks to the efforts of Anita Cruz and Vanessa Boria. We are all working on improving our Spanish speaking through our daily word-of-the-day from our medical assistants Myra Gonzalez, Glenda Nieves, Raisa Quinones, and Sinead Rodriguez. In summer, we also held a school supply and thermometer drive to benefit our patients and families. The effort was organized by our nurses Debby Foster and Allyson Alissi.

INPATIENT/CONSULTATIVE PULMONARY SERVICE

We expanded resources in our Inpatient/Consultative Pulmonary Service, hiring nurse practitioner Emily Tyskinski, APRN, to help us meet the demand for ongoing consultative requests. While servicing the needs of all of our patients, Ms. Tyskinski's special focus is providing longitudinal consultative care to the NICU patients to help facilitate their transition out of the NICU to home or to Connecticut Children's main inpatient hospital. We also expanded and upgraded our outpatient care services by retrofitting providers' workspaces to enhance telemedicine visits, which facilitate care for patients who continue to have access to our specialists without leaving the comfort of their homes. We are also very grateful to Triola Bell, RRT, Stacey Hallgren,

RRT, and Anne Russo, RRT, who have all mastered our new telehealth medium to provide teaching and review airway clearance with our medically complex patients.

COVID LONG-HAULER PROGRAM

Dr. Collins and Amanda Filippelli, APRN, have teamed with the Division of Infectious Diseases to incorporate pulmonary diagnostic and chronic care for patients with long-term effects of COVID. They have developed an algorithm for the pulmonary care of these patients so that we can offer consistent treatment among all our providers.

SEVERE ASTHMA PROGRAM

Due to collaborative efforts with Dr. Collins and Allison Matthews-Wilson, LCSW, we were able to bring our social worker, Deana Phillips, MSW, into our Severe Asthma Clinic to provide mental health support for our patients. Rosalynn Bravo-Cavoli, APRN, and Debby Foster, RN, have continued their ongoing efforts to re-invigorate the program by using a team approach. We hope to use this clinic as a pilot program to extend innovative solutions throughout the practice.

CYSTIC FIBROSIS CENTER

Connecticut Children's Central Connecticut Cystic Fibrosis (CF) Center continues to be one of the best in the country based on clinical outcomes of lung function, nutrition, and adherence to CF guidelines. CF newborn screening is mandated throughout the United States as early diagnosis is key to helping infants with CF do as well as possible. Our CF Center is one of, if not the fastest in the country at screening, diagnosing, and then meeting with families to help provide the best possible care and to help during the difficult period when parents and families first learn about their child's diagnosis.

Our team was busy this past year with our CF social worker, Ms. Philips, and our nutritionist, Lisa Devine, RD, instituting access to nutrition screening for families across our CF clinics to ensure all families had adequate supplies to feed their families. In addition, Ms. Philips and our CF coordinator, R.B. Curtis, worked to revitalize our patient and family advisory board and served as CF XoC (Experience of Care) Champions. Ms. Curtis continues to serve on a number of other national committees at the CF Foundation as do Dr. Collins and center director Craig Lapin, MD.

RARE LUNG DISEASE PROGRAMS (INTERSTITIAL LUNG DISEASE, CILIARY DYSKINESIA, SICKLE CELL DISEASE)

There is ongoing collaboration among various subspecialties for our Rare Lung Disease Program. Nationally, Natalie Shilo, MD, collaborates with other institutions through her participation in the national Childhood Interstitial and Diffuse Lung Disease (chILD) network conferences. We resumed our in-person, multidisciplinary Sickle Cell Clinics with Pediatric Hematology and are looking forward to refining and expanding the services provided in these clinics in the coming year. In keeping with the primary ciliary dyskinesia (PCD) guidelines, we continue to use Invitae Genetic Testing for PCD and are hopeful that the easing of travel restrictions will permit us to begin the training process (which only takes place in Canada) for new diagnostic equipment that is crucial in the evaluation of nasal nitric oxide.

SLEEP MEDICINE PROGRAM

Jay Kenkare, MD, has continued to lead our Sleep Medicine program through some challenging times in the last year. He was at the forefront of reorganizing services for patients during a manufacturer's device recall and helped to ensure that all of our patients received safe and efficient care. We continue our commitment to teaching and education. Pulmonary fellows now rotate with Sleep on a scheduled basis. Residents on their Developmental Pediatric elective also rotate with us to gain some basic sleep experience. Lectures on sleep have been incorporated for Otolaryngology residents. We are exploring initiation of a Sleep Medicine fellowship in conjunction with UConn. Niddya F. Mishra, a registered polysomnographic technologist, was recognized as a subject matter expert by the American Academy of Sleep Medicine educational programming team and has contributed to their latest educational guide.

Lynne Schneeberg, PhD, continues with her local media and blog posts as well as outreach to community providers especially in the Fairfield area in an effort to expand the division's footprint. Our Multidisciplinary Sleep Clinic has been highly successful and reached the one-year milestone. Sleep, Pulmonary, Otolaryngology, and Behavioral Sleep all combine expertise to treat our most challenging children. Tracey Allen, APRN, has worked diligently to expand her skill set through additional training and continuing medical education in the field of Adolescent Sleep Medicine, which is an area of need for us.

On the technology and therapeutics side, we introduced volume-assured pressure support (VAPS) as a treatment modality for our patients with complex sleep-related breathing needs. We also have performed multiple studies successfully with high flow oxygen as a potential treatment for sleep apnea in infants. Despite the challenges of the pandemic and a national CPAP recall, we were able to perform nearly 1,500 studies, which represents a remarkable 25 percent increase over the previous year.

NEUROMUSCULAR RESPIRATORY DISEASE PROGRAM

We welcomed our new faculty member, Jamie Harris, MD, our former fellow and newest attending, as the pulmonary director of the Neuromuscular Respiratory Disease Program, a new and exciting initiative that offers a multidisciplinary clinic approach to patients with neuromuscular respiratory disorders. He is in the process of revising both inpatient and outpatient airway clearance protocols for this population in hopes of improving quality of life and diminishing length-of-stay for inpatients.

AERODIGESTIVE PROGRAM

We also welcomed Dr. Harris into the Aerodigestive Program, enabling us to expand our presence and participate in the multidisciplinary clinic on a weekly basis. Anne McLaughlin, MD, the program's lead pulmonologist, is actively seeking to upgrade our bronchoscopy equipment to move into the

digital area and enable us to perform procedures on even smaller patients. Dr. Lapin continues to add his experience to our bi-monthly procedure days, which are a favorite among all our faculty.

PEDIATRIC PULMONOLOGY FELLOWSHIP/ EDUCATION

Our fellow, Kataryzna Saar, is in her third year of the program. She is completing an exciting mask microbiome project under the direction of Jessica Hollenbach, PhD. Separately, thanks to the efforts of Dr. Collins and Umit Emre, MD, we reframed schedules for fellows to promote wellness, and improved our didactics to provide a more integrated approach to teaching pulmonary medicine. Craig Schramm, MD, professor emeritus, continues to be a foundation of physiology education for the fellowship program. Dr. Collins, the program director, has been accepted on the ACGME Milestones Committee for Pediatric Pulmonology.

Our APRNs, Ms. Filipelli and Ms. Bravo-Cavoli, have remained active educators with both nursing and APRN students. Ms. Filipelli has continued to be the secretary of the Asthma and Allergy Special Interest Group for the National Association of Pediatric Nurse Practitioners.

RESEARCH

The entire Pulmonary division is participating in a randomized, controlled trial, multicenter National Institutes of Health (NIH) study exploring the use of omalizumab to prevent asthma in children ages 2 to 4. Drs. Collins and Lapin are collaborating with UConn in an investigator-initiated study evaluating potential innate immune deficiency (Integrin activation) to determine which is responsible for dysfunction in phagocytosis, bacteria-killing, and/or cytokine production leading to inflammation and fibrosis.

Dr. Collins has been promoted to co-director of the Asthma Center with Jessica Hollenbach, and they are actively working to improve asthma care by integrating Easy Breathing© into primary care practices. Drs. Collins and Harris continue to collaborate with Thomas Murray, MD, at Yale New Haven Hospital on nebulizer disinfection practices and aerosolization of bacteria during respiratory treatments.

We have had representation at all national meetings with research abstracts accepted this year for presentation at the North American Cystic Fibrosis Conference, American Thoracic Society, and the American Academy of Allergy, Asthma, and Immunology, among others.

PUBLICATIONS

Sleep Medicine

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STAFF

Melanie Sue Collins, MD, *Interim Division Head, Director, Pediatric Pulmonology Fellowship*

Craig Schramm, MD, *Emeritus Division Head*
Umit Emre, MD
Jamie Harris, MD, Director, *Neuromuscular Respiratory Program*
Jay Kenkare, MD, *Director, Sleep Medicine Program*
Craig Lapin, MD, *Director, CF Center*
Annie McLaughlin, MD, *Lead Pulmonologist, Aerodigestive Program*
Lynelle Schneeberg, PhD
Natalie Shilo, MD, *Director, Rare Lung Disease Program*

Tracy Allen, PA-C
Rosalynn Bravo-Cavoli, APRN
Amanda Filippelli, APRN, *Director, Pulmonary COVID Long-Hauler Clinic*


Emily Tyksinski, APRN

RHEUMATOLOGY

In 2021, the Division of Rheumatology continued to experience clinical growth with a significant presence in South Hadley, MA, as well as satellite specialty care centers in six locations throughout Connecticut: Danbury, Shelton, Stamford, Farmington, Glastonbury, and Hartford. We have three board-certified pediatric rheumatologists and are actively recruiting for a fourth who we expect will join us in July 2022. We have a psychologist on our team, Vanessa Laurent, PhD, who addresses the critical biopsychosocial factors affecting our patients. Our team also includes two nurses who provide outstanding clinical care and also participate in research through the Rheumatology Nursing Society.

The division remains clinically busy. We had 3,315 outpatient visits this year and cared for 127 complex inpatients including many with multisystem inflammatory syndrome (MIS-C), the post-inflammatory condition causing significant illness in children following exposure to COVID-19. Heather Tory, MD, continues to play a critical role as the Rheumatology lead in the pathway development and revisions for the care of these critically ill children. Despite the ongoing impact of the pandemic, our physicians continue to see patients in person as well as via telemedicine.

Division head Barbara Edelheit, MD, is proud to lead a staff in which each physician has a specific area of expertise and focus, thereby forming the basis of a robust team. She has maintained her focus on education and mentorship. Her former mentee, Matthew Eremita, MD, graduated in June 2021 and started his fellowship in rheumatology at Cohen Children's Medical Center in New Hyde Park, NY. Another former mentee/UConn resident, Jessica Fennell, MD, is completing her pediatric rheumatology fellowship at the Hospital for Special Surgery in New York, NY. Dr. Edelheit also continues to serve as a preceptor for Keaven Caro, a CLIC student – a medical student at the University of Connecticut for whom she provides longitudinal clinical immersion in the community. Dr. Edelheit is a member of the CT Children's/University of Connecticut Residency Program Clinical Competency Committee, which meets

monthly for in-depth review of all residents and to review applicants who are looking to secure spots in our residency program.

Dr. Edelheit leads the Connecticut Children's Women in Medicine group called PoWER (Pediatric Women Relate). Its mission is to foster a community of women physicians and psychologists at Connecticut Children's by providing leadership, professional and personal development, and support. The group has had a successful initial year with many well-attended events and the members look forward to continued success over the coming years. Dr. Edelheit is also the faculty advisor for the student chapter of the University of Connecticut chapter of AMWA (American Medical Women's Association), a national organization whose mission is to advance women in medicine and improve women's health. She is an active member of the board of the Connecticut Children's Specialty Group (CCSG), and since June of 2021, has served as acting board chair. Dr. Edelheit continues to serve as a member of the Connecticut Children's Care Network Development and Credentialing Committee.

Heather Tory, MD, MPH, CPPS, continues her focus on safety and quality within the Rheumatology division while serving as associate quality director at Connecticut Children's. Within the medical center, she is co-chair of the CCSG's Clinical Quality and Providers IT Advisory Committee. She also is a member of the Connecticut Hospital Association Committee on Patient Care Quality. Dr. Tory continues to serve as co-chair of the hospital's Medication Safety Management Committee. She is a member of the NICU Scholarship Oversight Committee. Dr. Tory also participates as a member of Connecticut Children's Continuing Medical Education/Maintenance of Certification Committee.

Dr. Tory has earned national recognition as a member of the American College of Rheumatology Quality Measures Subcommittee of the Quality-of-Care Committee. She is the chair of the Juvenile Dermatomyositis (JDM) Quality Measures Workgroup of the Childhood Arthritis and Rheumatology Research Alliance (CARRA) under the JDM Committee. Dr. Tory is also on the Medical Advisory Council for the Make-A-Wish Foundation of Connecticut.

Blaine Lapin, MD, continues his focus on advocacy. He is serving on the American College of Rheumatology Special Committee on Pediatric Rheumatology for a three-year term (2019-2022). He holds the title of medical director for the Local Leadership Board of the Connecticut Chapter of the Arthritis Foundation. He participated in a national virtual advocacy program to discuss important topics in the field of rheumatology including work force shortages, subspecialty loan repayment, and step therapy.

The Division of Rheumatology remains committed to collaborative care at Connecticut Children's, and Dr. Edelheit together with Sherene Mason, MD, FAAP, MBA, in the division of Nephrology, have successfully completed the second year of their Combined Lupus Clinic to provide continued state-of-the-art care for children and young adults with systemic lupus erythematosus in a multidisciplinary setting. This clinic offers patients and families collaborative care from specialists in a variety of divisions that may include Rheumatology, Nephrology, Psychology, and Adolescent Medicine.

This year, the Division of Rheumatology introduced a second clinic focused on collaborative care in conjunction with the Division of Pediatric Ophthalmology. Working with ophthalmologist Janine Collinge, MD, we began a combined Rheumatology/ Ophthalmology clinic at Connecticut Children's. This clinic provides care for kids with inflammatory rheumatic and inflammatory eye disease in a seamless, collaborative and streamlined fashion that has increased overall patient and family satisfaction.

Our division continues to participate actively in research on a national level with the American College of Rheumatology. We also participate in research through the Childhood Arthritis and Rheumatology Research Alliance with participation in their registry as well as in several studies. The division has several active IRB-approved research studies.

PUBLICATIONS

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STAFF

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Ann Mendicino-Wrynn, RN
Vanessa Laurent, PhD

PEDIATRIC SEDATION

The Center of Procedural Excellence (CoPE) is a six-bed unit within Connecticut Children's dedicated to providing high-quality procedural sedation for pediatric patients. This is one of only a few centers in New England with space and staff dedicated to non-operating-room pediatric sedation. The CoPE was opened in March 2016 with generous donations from the Connecticut Children's Foundation and the UConn HuskyThon. The Sedation Service provides comprehensive high-quality care with a focus on the patient and family experience. In 2021, we provided care for over 1,500 patients requiring sedation for procedures outside of the operating room. While COVID-19 temporarily decreased the number of patients we cared for, rapid implementation of a pre-arrival testing process allowed us to continue to do our important work in a safe manner.

The Sedation division works with nearly all subspecialties within Connecticut Children's to provide sedation for painful procedures outside of the operating room including: bone marrow aspiration/biopsy in Oncology patients, kidney biopsies for Nephrology, imaging for Radiology, catheter placement and minor surgical procedures for Urology and Surgery, central line placement for the PICC line service, and vaccination/lab draws for patients with developmental delays and autism spectrum disorders. Our service utilizes a mixture of intravenous, oral, and inhaled sedative agents to provide mild to deep sedation, scaled to meet the developmental and procedural needs of each patient. Connecticut Children's CoPE continues as a Sedation Center of Excellence as designated by the Society for Pediatric Sedation. The designation is a highly competitive award given annually to centers of pediatric sedation that create an "ideal environment for the delivery of safe, effective, efficient, timely and equitable patient-centered pediatric procedural sedation." The Society for Pediatric Sedation is the international multidisciplinary leader in the advancement of pediatric sedation. Applications are reviewed in a blinded fashion by a panel of experts and Center of Excellence designations are awarded for a four-year period, with ours running from 2020 to 2024. We are currently the only pediatric hospital in New England with this Center of Excellence designation.

We are humbled by our high commendations from patients and families, a testament to our continued efforts to develop a family centered approach to care delivery. To that end, associate medical director Kalyani Raghavan, MBBS, MD, DCH, continues to develop strategies to serve the needs of our patients with autism spectrum disorders. Working with colleagues in Developmental Pediatrics at Connecticut Children's and with state and national experts, Dr. Raghavan has developed social stories to help prepare patients and families for their procedural sedation. These social stories are available online and can be viewed by families to prepare their child for the visit to Sedation. Dr. Raghavan has received grant funding from Autism Speaks® and other outside foundations to continue her very important work. Further developing her expertise in alternative approaches to management of pain and anxiety, Dr. Raghavan is initiating a program to offer options for aromatherapy for patients hospital-wide. To help families prepare for a visit, our child life specialist is available for phone consultations in advance to help develop individualized approaches with the input of family members.

Members of the Sedation Team are involved in leadership and committees at Connecticut Children's. Leonard Comeau, MD, is chairperson of the Sedation and Analgesia Committee and is responsible for writing and updating sedation policies, updating and overseeing credentialing of the house staff, and monitoring safety and quality of sedation hospital-wide. Members of the Sedation service also participate on hospital committees focused on pain management, the patient and family experience, pediatric palliative care, and quality and safety.

Our educational commitment remains strong. Every UConn Pediatric and Emergency Medicine intern (35 per year) spends a week on a dedicated Sedation rotation. Residents participate in all aspects of patient care, are given hands-on training in airway management,

and become credentialed to independently provide moderate sedation.

Our mission is to provide the highest quality care for children undergoing tests and procedures outside the operating room. We aim to utilize not just sedation medications but distraction techniques, alternative therapies, and a family centered approach to minimize anxiety and unnecessary discomfort for our patients.

PUBLICATIONS

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Kathy Kalkbrenner, MD
Leonard Comeau, MD

PEDIATRIC SURGICAL SUBSPECIALTIES


AMERICAN COLLEGE

ANESTHESIOLOGY

The Division of Anesthesiology is recognized for the outstanding clinical care and pain management services it provides. We are committed to advancing pediatric anesthesia care, providing cutting edge therapies for the management of acute and chronic pain, and educating the next generation of anesthesiologists and nurse anesthetists.

The Division of Pediatric Anesthesiology draws on the long history of anesthesia excellence in Hartford, CT, to provide superb clinical care, innovative teaching, academic achievement and a commitment to patient safety. The division's successes depend on the exceptional collaboration of our physicians, nurse anesthetists, advanced practice nurses and staff.

The division consists of 15 anesthesiologists and over nine certified registered nurse anesthetists (CRNAs) and advanced practice nurses. With the challenges of COVID-19 this past year, we supported our adult colleagues in dealing with the increased demand in the intensive care units and for airway management. Our APRNS took the lead in coordinating COVID-19 testing, obtaining results and managing care for perioperative patients. The Connecticut Children's Hartford campus is our principal clinical site but we provide care at numerous locations throughout the greater capital area. We coordinate care for over 10,000 surgical patients of all ages and for complexities each year including elective and emergent surgery, trauma surgery, endoscopy, imaging, and cardiac catheterization at the main campus. Additionally, we care for over 1,500 children at the Ambulatory Surgery Center in Farmington. For patients requiring MRA, nuclear medicine, interventional radiology or transplant services at Hartford Hospital, we provide the necessary expertise and a familiar face. Urgent procedures at Connecticut Children's NICU in Farmington and at Hartford Hospital also are covered by our division. Our vision is to provide compassionate care with extraordinary expertise for children in Connecticut. This year during the COVID-19 crisis, our nurse anesthetists and physicians stepped up and provided care for adult patients in the ICUs at Hartford Hospital.

Michael Archambault, MD, is working with Katherine Kavanagh, MD, from the Division of Otolaryngology, on simulation-based training of anesthesiology and otolaryngology residents. Our collaboration with the Division of Otolaryngology researching perioperative pain management strategies in children who have bilateral myringotomy and tube placement is continuing. Eapen Mathew, MD, spends time with members of the Division of Pain and Palliative Medicine, consulting on inpatients, seeing outpatients, performing therapeutic nerve blocks and conducting research. Jay McIsaac, MD, MS, continues as the chair of Disaster Preparedness for the Connecticut State Medical Society and is a member of the American Society of Anesthesiology (ASA) Committee on Trauma and Emergency. He once again directed the Hands-On Strategies for Managing Mass Casualties Workshop at this year's ASA Annual Meeting. He is a board member of the World Association for Disaster and Emergency Medicine.

PUBLICATIONS

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STAFF

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Michelle Stevens, CRNA
Rachel Petree, CRNA

Melissa Jenkins, APRN
Tracy Kunkel, APRN

PEDIATRIC & ADULT CONGENITAL CARDIOTHORACIC SURGERY

The Cardiothoracic Surgery team led by nationally renowned congenital heart surgeon, Dennis Mello, MD, provides world-class surgical care and support to the children and adults of Connecticut born with congenital heart disease.

Dr. Mello, division head, and Raina Sinha, MD, MPH, FACC, FACS, are our two board-certified congenital heart surgeons who work together to operate on and provide perioperative cardiac surgical care to all patients with congenital heart disease. They are supported by two excellent and highly skilled physician assistants, Jill Sullivan, PA-C, and Kathleen Kellerman, PA-C, who help navigate the operative and post-operative care, respectively, of our patients. Our program provides state-of-the-art management of complex congenital heart defects across the entire age spectrum from newborns to adults, including a collaboration with the adult cardiothoracic surgery team at Hartford Hospital.

By having two dedicated cardiac surgeons at Connecticut Children's, we have been able to safely perform complex procedures in the operating room as well as cardiac catheterization lab with appropriate surgical coverage at all times. Despite COVID-19, our surgical volumes continue to increase each year, and we are performing the most congenital heart surgeries of any program within the state.

The Pediatric Cardiothoracic Surgery service strives for discovery, teamwork, integrity and excellence in cardiac surgical care. Cardiothoracic Surgery, Pediatric Cardiac Anesthesia, the Pediatric Intensive Care Unit (PICU), and Pediatric Cardiology work together in a strong collaborative effort to provide a uniform standard of care to patients with congenital heart disease who are seeking surgery.

NEONATAL & PEDIATRIC HEART SURGERY

Our team has regularly been performing numerous complex congenital heart surgeries, including Norwood operations for hypoplastic left heart syndrome as well as other neonatal operations such as an arterial switch and truncus arteriosus repair with excellent outcomes. Furthermore we have had an increase in the level of case complexity across our patient spectrum – whether it's a successful ventricular septal defect closure in a baby weighing less than 3 kg, a valve-sparing aortic root operation in young adults, or a third time redo-operation in an adult patient to replace multiple heart valves.

CASE HIGHLIGHTS

We recently successfully performed the Ross-Konno operation in two infants with complicated left ventricular tract (LVOT) obstructions. In addition one of those patients, who was born with Shone's complex, also required a subsequent mitral valve replacement. We successfully placed the "world's smallest mechanical heart valve" in the patient, who at the time was age 2 months with a weight of 3.2 kg.

When a pediatric patient presented with congenital polymorphic ventricular tachycardia (CPVT), the Cardiac Surgery team collaborated with Neurosurgery division head Dr. Jonathan Martin to successfully perform the first thoracic sympathectomy utilizing a minimally invasive approach (VATS – video-assisted thoracoscopic surgery) here at Connecticut Children's.

ADULT CONGENITAL HEART DISEASE SURGERY

We strive to attain excellence in our surgical care of adults with congenital heart disease (ACHD), in collaboration with adult congenital cardiology as well as the adult cardiothoracic surgeons at Hartford Hospital. This past year, several successful ACHD cases were performed including mitral valve repairs, valve-sparing aortic root replacements, as well as valve replacements with a novel bioprosthetic valve, which allows for expansion for future valve-in-valve procedures to be performed percutaneously. We also perform surgical repair of complex coronary artery anomalies in children and adults with excellent outcomes. Hartford Hospital has partnered with us in the surgical management of adults with congenital heart disease. Robert Hagberg, MD, an experienced adult heart surgeon and chief of Cardiac Surgery at Hartford Hospital, is an integral partner in helping provide care for adult patients with congenital heart disease. He and his partners often collaborate with our Connecticut Children's congenital heart surgeons to perform ACHD surgeries at both Connecticut Children's as well as Hartford Hospital. This association further strengthens our commitment to provide surgical services to all congenital heart disease patients, regardless of age, within the region and statewide.

QUALITY & OUTCOMES

Our surgical data and operative outcomes are periodically submitted to the Society of Thoracic Surgeons (STS) Congenital Cardiac Surgery Database (www.sts.org). This database includes more than 94 percent of the congenital cardiac surgery programs in North America and helps establish outcome and quality benchmarks. We continue to rank very well within these objective benchmarks.

In order to improve communications and enhance patient care efficacy, we implemented cardiac surgery ICU rounds. Monthly mortality and morbidity presentations and quarterly quality STS reviews are performed for continuous review of the surgical program.

EDUCATION

We continue to provide ongoing educational support to PICU nursing and ancillary staff through a congenital heart surgery lecture series on a monthly basis. These efforts have been extended to our NICU colleagues as well in order to continue to improve care for patients with congenital heart disease. Dr. Sinha is the lead advisor for University of Connecticut School of Medicine students interested in cardiothoracic surgery.

HONORS

Drs. Mello and Sinha co-authored two submissions which were placed in the "Top 20 abstracts" at the Connecticut Chapter of the American College of Cardiology. The Division of Cardiac Surgery also has been represented at both local and national cardiac meetings.

Dr. Sinha was inducted as a fellow in the American College of Surgeons (ACS) at the annual meeting in October 2021. Dr. Sinha received a Surgery Innovation Grant from the Department of Surgery, for her proposal titled "Barriers to Gender Parity in Thoracic Surgery Career Selection During Medical School: A Pilot Study." She also was sponsored by the Hartford Hospital medical staff to attend Harvard's "Career Advancement and Leadership Skills for Women in Healthcare" course in November 2021.

CONTRIBUTIONS TO RESEARCH

Dr. Sinha has performed several presentations at local, regional, and national platforms. She is an active member in various national surgical associations and is leading efforts to involve Connecticut Children's in multi-institutional research collaborations such as the Congenital Heart Surgeons' Society.

PUBLICATIONS

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STAFF

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Co-Director, Connecticut Children's Cardiovascular Institute

Raina Sinha, MD, MPH, FACC, FACS, ***Congenital Heart Surgeon***
Jill Sullivan, MS, PA-C
Kathleen Kellerman, PA-C
Robert Hagberg, MD, ***Chief of Cardiac Surgery, Hartford Hospital***

NEUROSURGERY

The Division of Pediatric Neurosurgery is committed to the following core values:

- *We are dedicated to the delivery of comprehensive, compassionate, and timely, family centered care to our patients and families*
- *We collaborate with and respect all members of our regional community*
- *Through clinical research, we hope to develop new and better treatments for neurosurgical disease.*

PEDIATRIC NEUROSURGERY IN TRANSITION: THE TELEMEDICINE REVOLUTION CONTINUES

COVID-19 has forever changed the landscape of outpatient care. Telemedicine capabilities were rapidly developed at the outset of this pandemic, and are here to stay. Connecticut Children's Division of Pediatric Neurosurgery has been no exception; in October of 2021, 28 percent of all scheduled outpatient visits were completed by telemedicine. Our division has continued to innovate and lead nationally. Work by Markus Bookland, MD, to develop a smartphone-based platform for image analysis was featured on the cover of the *Journal of Neurosurgery: Pediatrics* in May of 2021. The application aids with both diagnosis and quantification of cranial deformity, and has been critical to the success of telemedicine efforts for our division.

PATIENT SATISFACTION

The Division of Pediatric Neurosurgery is committed to providing outstanding service to our referring providers and families. The division continues to set the standard for patient, family, and provider satisfaction at Connecticut Children's.

QUALITY IMPROVEMENT INITIATIVES

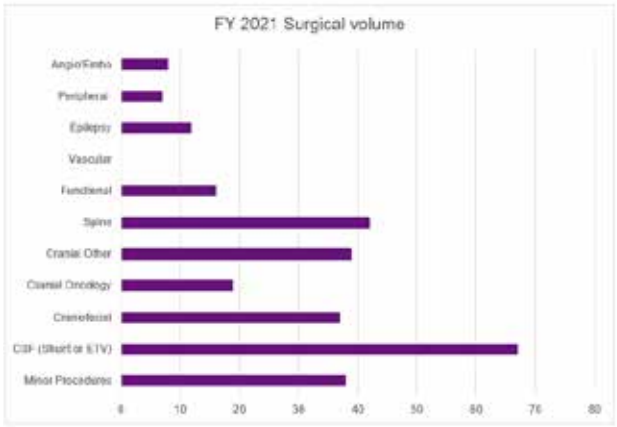
The Division of Pediatric Neurosurgery remains committed to patient quality and safety. Our internal quality program continues to benchmark our performance against existing national standards. We additionally participate in two national quality databases: the American College of Surgeons' Pediatric National Surgical Quality Improvement Program (NSQIP), and the Hydrocephalus Research Network quality program (HCRNq), which Connecticut Children's joined this year. Our focus on quality has led to surgical outcomes for children with hydrocephalus that exceed national standards.

Quality Metrics, 2020	CT Children's	National Benchmarks
Shunt failure, 90 days	10%	11.5% (30-day data) [1]
Shunt infection	1.6%	6% [2]
30-day readmission	6%	8.1% - 11.2% [3,4]

[1] Piatt JH. JNS Peds 14: 179-183, 2014.
[2] Kestle JRW et al. JNS Peds 17: 391-396, 2016.
[3] Wrubel DM et al. JNS Peds 13: 216-221, 2014.
[4] Sherrod et al. JNS Peds 13: 350-362, 2016.

SURGICAL VOLUME

The Division of Pediatric Neurosurgery continues to provide the full spectrum of surgical care to the children of western New England. In 2021, 285 children were provided surgical care by our team of expert providers.



Total = 285

CLINICAL INITIATIVES

The Division of Pediatric Neurosurgery strives to improve comprehensive offerings to the children of western New England through collaboration to develop innovative programs at Connecticut Children's. Innovations in 2021 included:

- Expansion of our peripheral nerve program to include distal nerve transfers for the treatment of spinal cord injury.
- Advances in our multidisciplinary epilepsy program to include the introduction of minimally invasive approaches to surgical epilepsy using stereotactic electroencephalogram.
- Further evolution of our craniofacial program to include the introduction of posterior calvarial vault distraction for the treatment of complex craniofacial deformity.

EDUCATION, LEADERSHIP, & RESEARCH

Our division remains committed to the mission of education and research. Our engagement with the University of Connecticut School of Medicine neurosurgery residency program has led to significant growth in academic production from University of Connecticut School of Medicine students. Under the guidance of David Hersh, MD, the pediatric neurosurgery research group has demonstrated remarkable productivity with peer-reviewed publications and podium presentations at national meetings. Continued growth in this area is anticipated.

Connecticut Children's neurosurgical providers continue to make their mark regionally and nationally. Division head Jonathan Martin, MD, continues to serve as the surgical liaison for the State of Connecticut Chapter of the American Academy of Pediatrics as well as the secretary and a member of the executive committee of the Section on Neurological Surgery of the American Academy of Pediatrics. Dr. Martin additionally curated and edited the August 2021 issue of *Pediatric Clinics of North America* titled "Pediatric Neurosurgery in Primary Care," a compilation of 16 articles by a group of nationally renowned authors.

Dr. Bookland has continued in his role as associate director of Research and Academic Affairs for the Department of Surgery. In that capacity, he directs a well-attended monthly surgical research meeting with our colleagues across Surgery, and he coordinated our first pan-institution Research Institute Day, along with William Zempsky, MD, and Justin Radolf, MD. His work on craniometrics, featured above, has begun to solidify his reputation nationally in this area and has engendered Connecticut Children's-branded Android and iOS apps, which are in beta testing.

Dr. Hersh spearheads a diverse group of initiatives for the division. At a national level, he is a member of the exam questions and clinical networks subcomittees of the AANS/CNS Section on Pediatric Neurological Surgery. He is also our facility liaison for the Hydrocephalus Research Network Quality program. Locally, Dr. Hersh serves as the site director for the pediatric neurosurgery rotation for both University of Connecticut medical students and pediatrics residents. Additionally, he serves as the faculty co-advisor of the AANS Medical Student Chapter at the University of Connecticut School of Medicine. In this role, together with Ketan Bulsara, MD, chair of Neurosurgery at UConn Health, he oversees a monthly research meeting for University of Connecticut undergraduate and medical students. His initiative and leadership has grown this group to nearly 60 strong and has established a track record for success, with peer-reviewed publications and podium presentations at national meetings. Continued growth in this area is anticipated in 2022. Dr. Hersh is also collaborating with Yusuf Khan, PhD, at the University of Connecticut to study the effects of therapeutic ultrasound on bone resorption following cranial surgery in children.

PUBLICATIONS

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Hersh DS, Anderson HJ, Woodworth GF, **Martin JE**, Khan YM. Bone flap resorption in pediatric patients following autologous cranioplasty. Oper Neurosurg (Hagerstown). 2021 Apr 15;20(5):436-443. doi: 10.1093/ons/opaa452.

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Charles Castiglione, MD, ***Craniofacial Surgery***
Christopher Hughes, MD, MPH, ***Craniofacial Surgery***
Belachew Tessema, MD, ***Otolaryngology/Endonasal Sinus Surgery***
Martin Ollenschleger, MD, ***Neurointerventional Radiology***
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Jennifer Madan Cohen, MD, ***Epilepsy/Neurology***
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Minh Tang-Schomer, PhD, ***University of Connecticut***
Roel Verhaak, PhD, Jackson Laboratories

OPHTHALMOLOGY

During the second year of the pandemic, the Division of Ophthalmology continued to welcome patients. We offered a mix of telehealth and in-person visits while maintaining all of the necessary safety protocols to ensure the safety of our patients and staff. While our telehealth appointments were initially devised in response to the pandemic, we continue to offer them whenever appropriate. They are an especially welcome service to patients who need to be seen urgently but are unable to come to the office.

We expanded our division in December 2021 with the addition of an optometrist. We also hired an additional ophthalmologist, Dr. Mariana Flores, and a division head, Dr. Robert Spector, who are both scheduled to join us in early to mid 2022. We continue to recruit for our physician assistant position and will continue to expand in 2022 by adding another two physician assistants for a total of three in our division.

Several projects that were stalled in 2020 due to the pandemic were restarted in 2021.

CLINICAL INITIATIVES

- Our optic shop opened officially in November 2020, and in February 2021, we began accepting Medicaid insurance/Husky Health. This improves care for our patients by allowing them to use their medical insurance to purchase eyeglasses.
- In June, we introduced our combined Ophthalmology/Rheumatology Clinic, designed for patients who require the expertise of both an ophthalmologist and a rheumatologist. The clinic, held once per month, allows families to have simultaneous appointments thereby eliminating the need for multiple visits. The feedback has been positive.
- In July 2021, we introduced a contact lens clinic, headed by Maria Varela, OD. It is held twice per month but as demand increases, we hope to expand access for our patients.
- We collaborated with the Division of Neurosurgery in the treatment of concussions as they pertain to ophthalmology.
- In addition to our medical student and emergency medicine fellowship rotations, we welcomed our first physician-assistant (PA) student for a rotation in the summer of 2021. We hope to establish an ongoing rotation for PA students who have a particular interest in ophthalmology.
- We continue to provide education for our ophthalmic technicians through lectures given by the various providers in our division.
- Our physicians actively participate in various monthly conferences and are part of institution-wide committees.
- Both interim division head Majida Gaffar, MD, and Janine Collinge, MD, are involved in the Connecticut Children's "Women in Surgery" podcast series, which focuses on various issues concerning women in surgical specialties and subspecialties, and the challenges of being a female in a still male-dominated field.

Throughout the year, our physicians participated in medical education through the presentation of lectures, both in person and via Zoom. They also continued to mentor medical students, and allowed students, residents, and fellows to rotate in our clinics and in the operating room. Some of the lectures we provided included:

- "Eye Trauma," a lecture for the operating room staff: As the Ophthalmology division grows and expands, we will be treating more ocular trauma conditions in-house including ruptured globes. In the past, these cases would have been transferred out of Connecticut Children's, but the operating room staff requested education so they might be best prepared to assist in the surgical treatment of eye trauma.
- "Ocular Trauma," a lecture for Emergency Medicine staffers to better equip them to diagnose and treat ocular trauma. The lecture covered urgency, exam findings, and follow-up.
- "Retinopathy of Prematurity (ROP) Diagnoses and Management," a lecture given to the staff of the Neonatal Intensive Care Unit (NICU) regarding an ROP update.

In addition to the lectures, the staff of the Ophthalmology division mentored various medical students interested in Ophthalmology, and involved them in various research projects leading to poster presentations at national meetings and publications.

Dr. Collinge works closely with PEDIG (Pediatric Eye Disease Investigator Group), whose ranks include pediatric ophthalmologists and optometrists throughout the world who participate in research projects to compile a large database and answer questions regarding pediatric ophthalmology diseases.

PUBLICATIONS

Schultz G, **Gaffar M.** Retinopathy of prematurity – using electronic medical records to efficiently follow patients at multiple hospitals. J Neonatol. 2021 Apr;35(2):54-58.

STAFF

Majida Gaffar, MD, *Interim Division Head*

Janine Collinge, MD
Caroline DeBenedictis, MD
Sona Hamelin, PA

Marnie Smith, OD
Maria Varela, OD

ORTHOPEDIC SURGERY

The Orthopedic Surgery division consists of three services: the Pediatric Orthopedic service, Sports Medicine, and the Center for Motion Analysis. We provide the full spectrum of care for children and young adults with orthopedic conditions such as scoliosis and spinal deformities, limb deformity, congenital dislocated hips, clubfeet, congenital hand deformities, nerve injuries, children's fractures, as well as neuromuscular conditions such as cerebral palsy, spina bifida, and muscle diseases. The Sports Medicine division provides expert care for injured athletes as well as injury prevention programs.

In 2021, the Division of Orthopedic Surgery was honored to be named among the top 50 in the nation by *U.S. News & World Report*. Additionally, our division was recognized as the premier pediatrics orthopedics program in the state of Connecticut.

The Pediatric Orthopedic Surgery section has nine fellowship-trained surgeons: Mark Lee, MD, Jeffrey Thomson, MD, Phil Mack, MD, Kristen Pierz, MD, Janet Zahradnik, MD, Sonia Chaudry, MD, Allison Crepeau, MD, Matt Brown, MD, and Imran Hafeez, MD. Our orthopedic surgeons train and educate orthopedic residents from the University of Connecticut Health Center and Maimonides Medical Center in New York. Our ACGME-accredited pediatric orthopedic fellowship continues to train the next generation of pediatric orthopedic surgeons. Our advanced practice providers are vital to our division. They are Marta Berube, PA-C, Katelyn Colosi, PA-C, Kevin Connolly, PA-C, Kevin Fitzsimmons, PA-C, Sarah Florence, PA-C, Jennifer Hope, PA-C, Erin Malone, PA, A.J. Ricciuti, PA-C, and Kimberly Van Pelt, PA-C.

Our division continues to collaborate with other divisions. Dr. Pierz and Sylvia Õunpuu, MSc, work with Gyula Acsadi, MD, division head of Neurology, in researching Charcot-Marie-Tooth disease. Dr. Chaudhry and Jonathan Martin, MD, division head of Neurosurgery, have developed a brachial plexus treatment program and are combining their skills to provide state-of-the-art care for persons with these devastating injuries.

THE CENTER FOR MOTION ANALYSIS

The Center for Motion Analysis is directed by Dr. Pierz and Ms. Õunpuu and is fully certified by the Commission for Motion Laboratory Accreditation. The CMA provides a wide variety of diagnostic services evaluating children with disorders that affect walking and which may require treatment including orthopedic surgical intervention. The CMA conducts research on disorders that impact gait such as cerebral palsy, Charcot-Marie-Tooth disease, clubfeet, spina bifida, and sports injuries.

SPORTS MEDICINE

The Sports Medicine service provides high quality care to athletes from youth sports to the collegiate level. Additionally, our team offers care to patients with acute or chronic diagnoses that fall under the realm of sports medicine, such as joint instability, concussion, and ligament injuries. We continue to provide the latest techniques in both operative and non-operative management, including advanced procedures in ACL reconstruction, cartilage injuries, meniscus transplantation, and patellar instability. Under the direction of Imran Hafeez, MD, we have worked to continue to expand concussion care into Fairfield County, utilizing telemedicine to improve convenience for our patients.

In 2021, we started to see a rebound in volume as sports resumed and we emerged from our extended COVID downtime. We welcomed Matthew Brown, MD, to the team in October. He is a dual fellowship-trained orthopedic surgeon with specialization in both pediatric orthopedics and sports medicine. He is excited to return "home" to the Harford area where he previously completed his undergraduate studies at Trinity College. He has a particular interest in rugby after his many years of playing and coaching.

The Sports Medicine team, along with our colleagues in the Center for Motion Analysis and Sports Medicine Physical Therapy, has been hard at work improving rehabilitation and safer return-to-sport protocols after ACL reconstruction. Multiple research projects are in progress, including collaborations with other motion labs around the country to standardize a protocol using motion analysis for testing patients who have had an ACL reconstruction to determine when they are safe to return to sports. The Division of Sports Medicine also is involved in multiple large national studies on juvenile osteochondritis dissecans (JOCD) of the knee and elbow.

HONORS & ACHIEVEMENTS

Notable achievements in the Division of Orthopedic Surgery during 2021 include the following:

Dr. Lee was named the new division head of Orthopedic Surgery as of December 2021.

Dr. Chaudhry was promoted to associate professor. She was appointed to the Pediatric Orthopedic Society of North America (POSNA) QSVI UE Committee for a term running from May 2021 through May 2023, and to the Connecticut Children's Physician Leadership Council for a term that began March 2021. Additionally, she was elected to the American Society for Surgery of the Hand (ASSH) Young Leader's Council.

Ms. Õunpuu and Drs. Pierz and Acsadi were recognized for their paper, "The Impact of Orthoses on Gait in Children with Charcot-Marie-Tooth Disease." It was selected as one of the top three papers at the annual meeting of the Gait Society.

Pam Masella, MA, was the recipient of a 2021 Angel Award.

PUBLICATIONS

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OTOLARYNGOLOGY – HEAD AND NECK SURGERY

The Division of Otolaryngology – Head and Neck Surgery provides cutting edge and innovative clinical care of infants, children and adolescents. We are national leaders in our field and educate the next generation of pediatric otolaryngologists. We continue to have active outpatient offices in Hartford, Farmington, and Glastonbury, and to perform surgical procedures in Hartford and Farmington.

Over the past year, we expanded our services to new locations in South Hadley, MA, and Westport, CT, to better serve the communities of western Massachusetts and Fairfield County, CT. We also continue to have an active telehealth presence, which enables our division to expand access to subspecialty care while maintaining convenience for patients and families. In the past fiscal year, we evaluated 10,758 outpatients and performed 1,495 surgeries. We also remained productive academically. Our faculty won numerous teaching awards, created new modules for resident and staff wellness, established new medical simulation models for otolaryngology resident education, and presented virtually at meetings locally, regionally, nationally and internationally.

Christopher Grindle, MD, was named the medical director of the division of Otolaryngology in October 2021. In this role, he helps oversee the continued development of the division and its growth into more satellite locations. In addition, this past year, he was promoted to the academic rank of associate professor. He continues to work on developing telehealth and, together with colleagues from the division of Pediatric Biomedical Informatics, he presented on strategies to improve telehealth equity at meetings of the American Academy of Pediatrics and the American Medical Informatics Association. For his role as an educator, Dr. Grindle was honored in June 2021 with a Didactic Teaching Award from the University of Connecticut Pediatric Residency Program.

Katherine Kavanagh, MD, continued in her role as director of simulation for the University of Connecticut Otolaryngology residency program. She is the chair-elect for the Simulation Education Committee for the American Academy of Otolaryngology – Head and Neck Surgery where she co-directed a simulation course entitled "Worst Case Scenarios." At the same meeting, she presented her experiences in simulation education and also moderated a panel to address workplace bullying. She serves as secretary of the Connecticut ENT Society. She has expanded our Voice Clinic services and continues as director of the monthly multidisciplinary Airway Conference.

Nicole Murray, MD, continues to expand the collaborative Connecticut Children's Aerodigestive Team. Over the past year, the Center for Airway, Voice, and Swallowing became a distinct division and Dr. Murray was named the division head. Under her leadership, the division continued to expand the program, which now sees patients at three locations across the state of Connecticut. Additionally, she was elected as ENT representative to the national Aerodigestive Society, and is serving a two-year term for curriculum development. She co-chaired the PICU chief search committee, and is co-chair of the Connecticut Children's COVID PPE Task Force. In this capacity, she represented Connecticut Children's on three media news interviews. She was elected vice president of the Connecticut Children's Medical Staff Executive Committee. She also serves as the chair of the Clinical Competency Committee for the University of Connecticut Otolaryngology residency program.

Amy Hughes, MD, continues to focus on growing the Sialorrhea (drooling) program. The number of outpatient visits for drooling in 2021 more than doubled from the year prior, with an increase from 34 outpatient visits to 73. She continues her outreach efforts. Among them was a featured presentation at the November 2021 Connecticut ENT Society meeting that was designed to help area providers improve care for this population of complex patients. Dr. Hughes is evaluating and developing resources to make information for this group of patients more accessible. She is involved in a multi-institutional review of tympanostomy tube placement following cleft palate repair. On a national level, she was involved in an oral presentation at the American Society

of Pediatric Otolaryngology on the utility of airway fluoroscopy.

Nancy Grover, MD, founded a multidisciplinary sleep apnea clinic in collaboration with sleep medicine, sleep psychology and weight management for children with persistent sleep apnea after conventional management. She has been successfully seeing patients both virtually and in-person with planned expansion of services despite SARS-CoV-2. Dr. Grover was awarded a $10,000 grant from the ResMed Foundation for her study on children with mild obstructive sleep apnea and its impact on the child's quality of life and on parental decision-making. She is chief investigator for the study's ongoing multicenter randomized control trial. She also has co-authored a chapter on "Diagnosis and Management of Pediatric Sleep Disorders" in the upcoming *Bailey's Otolaryngology Head and Neck Surgery 6th edition*. She presented at the November 2021 Connecticut ENT Society meeting on management and outcomes of obstructive sleep apnea in children beyond conventional treatment. Finally, expanding her role in resident education, Dr. Grover was named the newest member of the University of Connecticut Otolaryngology Residency Program's Clinical Competency Committee.

Division head Scott Schoem, MD, MBA, FAAP, continues in his role as associate director for Surgical Clinical Affairs working closely with the Surgeon-in-Chief Christine Finck, MD, on clinical operations, budgets, mentoring, and marketing at Connecticut Children's. He is on the national board of directors for ENT PAC, the specialty's non-partisan, issue-driven political action committee. He is co-editor of *Pediatric Otolaryngology for Primary Care, 2nd edition*, published by the American Academy of Pediatrics and designed for practicing pediatricians and primary care clinicians. He served as a national oral board examiner for the American Board of Otolaryngology in October 2021.

Dr. Schoem was the recipient of the 2021 Model Faculty Award from the UConn Otolaryngology Residency Program. He is the current President of the Connecticut Chapter of the American Academy of Pediatrics serving a two-year term. Dr. Schoem's main goals for advocacy are anti-vaping strategies, overcoming parental vaccine hesitancy for SARS-CoV-2 and HPV vaccination, and education of both professionals and parents on choking hazards and button battery ingestion. He is the PI on a $21,000 national AAP grant to the Connecticut Chapter of the AAP on overcoming parental HPV vaccination hesitancy.

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Scott Schoem, MD, MBA, FAAP,
Division Head

Christopher Grindle, MD, FAAP
Nancy Grover, MD
Amy Hughes, MD, FAAP
Katherine Kavanagh, MD, FAAP
Nicole Murray, MD, FAAP

Rebecca Strong, APRN
Christine Harrington, PA-C
Elizabeth Oblon, PA-C

PEDIATRIC SURGERY

The mission of the Pediatric Surgery division is to provide high quality family-centered surgical and trauma care. The Division of Pediatric Surgery offers a full range of clinical services for pediatric patients from newborns to young adults. This includes prenatal consultations, the treatment of congenital anomalies, head and neck surgery, surgery of the chest and abdomen, pediatric gynecology, non-reconstructive urology, surgical oncology, bariatric surgery, treatment of chest wall deformities, and trauma including burn care. Pediatric surgeons see patients in Hartford, Farmington, Danbury, and Westport, allowing easier access for the convenience of our patient families. The Pediatric Surgery team performs outpatient procedures at the Connecticut Children's Ambulatory Surgery Center in Farmington. Same-day outpatient visits are available at our Hartford office for urgent problems, and at our satellites on days when a pediatric surgeon is there. We are committed to offering families outpatient appointments within one week of referral.

The second year of the COVID-19 pandemic presented many challenges, but the Division of Pediatric Surgery adapted and evolved, devising new and innovative ways to provide high quality acute and elective surgical care for a broad range of surgical conditions.
The division remains steadfastly committed to our vision statement: To provide compassionate, family-centered, evidence-based care of the highest quality, together with innovative research, and education of future leaders. Our respectful collaboration, internally and externally, leads us to be a foundational part of the Connecticut Children's network and the field of pediatric surgery.

There were many exciting new developments in the division in 2021, including being verified by the American College of Surgeons as Connecticut's first Level I Children's Surgery Center, and one of only two Level I Children's Surgery Centers in New England. Additionally, the division was one of five Connecticut Children's specialties to be nationally ranked by *U.S. News & World Report* for excellence in Pediatric Gastroenterology and Gastrointestinal Surgery, highlighting the high quality multidisciplinary care our pediatric surgeons provide across the spectrum of pediatric alimentary tract diseases.

The division's Bariatric Surgery Program continues to grow in both volume and scope under the leadership of Christine Finck, MD, FACS, Melissa Santos, PhD, and James Healy, MD, MHS. Over the last three years, the volume of laparoscopic sleeve gastrectomies has increased from an average of five operations per year to 38 cases during 2021. The program is accredited by the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP), which is the combined accreditation program of the American College of Surgeons (ACS) and the American Society for Metabolic and Bariatric Surgery (ASMBS). Connecticut Children's is the first and so far only pediatric program in Connecticut to receive this distinction.

W. Edwards Deming (1900-1903) was an American engineer and innovator who once said, "Uncontrolled variation is the enemy of quality." The Pediatric Surgery division has heeded Deming's advice and developed 10 clinical pathways for common surgical problems including appendicitis, animal bite injuries, burn care, ovarian torsion, solid organ injury, and child abuse, to assure that pediatric surgery patients with common clinical conditions receive evidence-based, highly standardized care, where important outcome measures are monitored and refined over time.

Brendan Campbell, MD, MPH, FACS, FAAP, who holds the Donald W. Hight Endowed Chair in Pediatric Surgery, took over the role of medical director for the Division of Pediatric Surgery this past year from Richard Weiss, MD, FACS, FAAP, who will focus his efforts on spearheading clinical growth in Fairfield County. Dr. Campbell successfully led Connecticut Children's through the reverification process to maintain our status as a Level I Pediatric Trauma Center. Connecticut Children's was initially verified by the American College of Surgeons in 2008. He serves as the Surgeon Champion for the American College of Surgeons' Pediatric National Surgical Quality Improvement Program (NSQIP), which provides risk-adjusted outcomes data that allows us to benchmark our care against other institutions and has provided many opportunities for us to improve the quality of children's surgical care we provide.

Dr. Campbell continues to be involved nationally in the American College of Surgeons through both their Committee on Trauma and the National Surgical Quality Program (NSQIP). Since 2020, he has been one of 100 surgeons nationally chosen to serve on the American College of Surgeons Committee on Trauma, and he chairs the Injury Prevention and Control Committee. In June, he was honored by the University of Connecticut Integrated General Surgery Residency Program, which presented him with the Joseph M. Civetta Best Faculty Teacher Award "in recognition for outstanding contributions to Surgical Resident Education" for the second year in a row.

Christine Rader, MD, FACS, continues in her role as assistant dean for Academic Affairs at Connecticut Children's which involves the educational oversight of both the medical and surgical house staff. It has been especially important during the pandemic to develop creative ways to provide all UConn residents with top-notch postgraduate educational opportunities. Dr. Rader continues in her role as the surgical director of the Extracorporeal Membrane Oxygenation Program (ECMO), which cares for critically ill patients with cardiac and respiratory failure, and she leads the Chest Wall Deformities Program, which provides state-of-the-art treatment for *pectus excavatum* and *pectus carinatum.*

The Multidisciplinary Thyroid Group, led by Drs. Finck, Weiss, Nordie Bilbao, and Rebecca Riba-Wolman, enables children with thyroid diseases to be rapidly and simultaneously evaluated by a surgeon and an endocrinologist.

The Multidisciplinary Prenatal Evaluation Program continues to be co-directed by Dr. Weiss. This program

is a joint effort with the departments of Obstetrics and Gynecology, and Maternal Fetal Medicine at Hartford Hospital, and multiple medical and surgical divisions at Connecticut Children's. This multidisciplinary program will be expanded in the future.

Dr. Healy now serves as both the UConn surgical residency site director and the co-site director for the Quinnipiac Medical School medical student clerkship, which includes both an inpatient pediatrics rotation, and an outpatient rotation in the Pediatric Surgery clinic. Additionally in 2020, he developed a series of educational lectures for advanced practice providers (APPs) to improve competency for new hires. He was awarded a Surgical Innovation Grant for his study on "Improving and Tracking Peri-operative Activity for Pediatric Bariatric Patients Using Wearable Fitness-tracking Technology." This year, Dr. Healy continued to work with the multidisciplinary weight management program to increase safety and efficiency of care for the bariatric patients presenting for weight loss surgery. This included collaboration on novel development of a "Procedure Pass" system in Epic and weekly multidisciplinary meetings to review the details of all the patients who are scheduled for upcoming procedures. The Division of Pediatric Surgery also initiated a quality improvement program aimed to prevent re-admission due to vitamin deficiency, and implemented an Enhanced Recovery After Surgery (ERAS) protocol to avoid post-operative narcotic use and reduce recovery time for our patients.

Dr. Weiss continues as an *ex officio* member of the American Pediatric Surgical Association (APSA) Practice Committee, which monitors the practice of pediatric surgery in North America, reports trends in practice patterns, and offers guidance to APSA members for improvements and optimization of care delivery. He also serves on the APSA History Committee preserving the rich history of pediatric surgery in the United States and Canada. He continues his role as an advisor for the American Pediatric Surgical Association to the AMA/Specialty RVS Update Committee (RUC), and is a member of the executive council of the Connecticut Chapter of the American College of Surgeons.

J. Leslie Knod, MD, continues to cultivate her passion for advocacy as a member of the American Pediatric Surgical Association Health Policy and Advocacy Committee, and locally through Connecticut Children's Public Policy Council. She remains involved in Connecticut Children's Injury Prevention Center and trauma program as well as in efforts to improve the standardization and quality of care for trauma patients. At an institutional level, Dr. Knod has been involved with our NICU antimicrobial stewardship project as well as an esophageal atresia working group to standardize the care of this patient population in a multidisciplinary setting, and she also has created a surgical bowel management guideline. Dr. Knod has spearheaded several multi-institutional studies through the Eastern Pediatric Surgery Network including long-gap esophageal atresia, central line-associated bloodstream infection (CLABSI), telemedicine, and surgical bowel preparation in pediatric surgical patients. Dr. Knod is also a member of the International Pediatric Endosurgery Group's Education Committee.

Katerina Dukleska, MD, completed her pediatric surgery fellowship at Connecticut Children's and was recruited to join our division in September. She stepped right into the role of site co-director for the Quinnipiac University medical student inpatient pediatrics rotation and the director for the UConn pediatric surgery rotation. On a national level, she continues to be involved on the Education and Industry committees of the American Pediatric Surgical Association. In addition to her broad interests in clinical pediatric surgery, she will continue to develop her interest in surgical quality and health services research.

Among the main goals of Pediatric Surgery division head Christine Finck is to promote gender equality and increase diversity across the surgical department. A new Women in Surgery group has been instrumental in creating opportunities for discussing the challenges of being a woman in a predominately male field. A new podcast was launched called "Women in Surgery" that discusses topics such as "imposter syndrome" and "wellness." The Women in Surgery group participated in a Stop the Bleed event held during a game at Dunkin' Donuts Park, and created several podcasts. Several members are joining the American College of Surgeons Connecticut Chapter of Women in Surgery. Dr. Finck also serves as the chair of the Connecticut Chapter of the American College of Surgeons Women in Surgery Committee, and Dr. Dukleska leads the Junior Faculty Women in Surgery Committee for the chapter.

EDUCATION

One of the core missions of the division is to educate future physicians and surgeons, and learners play a key role on the pediatric surgical team, which provides both inpatient and outpatient surgical care for a diverse array of clinical conditions and injuries.

We welcome General Surgery and subspecialty residents from the University of Connecticut School of Medicine, along with general surgery residents from Stamford Hospital, Waterbury Hospital, St. Mary's Hospital, and Danbury Hospital. Each year several UConn Pediatric residents participate in elective rotations on the pediatric surgery service. We also host medical students from UConn and Quinnipiac University. A fellowship program in pediatric surgery has been offered at Connecticut Children's since 2011, and we have successfully trained five pediatric surgeons. Our current fellow, Jacob Campbell, DO, MPH, completed his surgical training in UConn's Integrated Surgical Residency and started his fellowship in August of 2021.

All seven pediatric surgeons are Advanced Trauma Life Support (ATLS) Instructors, and participate in ATLS courses that are taught annually for residents, fellows, APs, and physicians from around the region and state. Drs. Campbell and Knod are both instructors for the Advanced Trauma Operative Management (ATOM) course that is a live-animal model course that teaches proper operative techniques for penetrating injuries to the chest and abdomen.

The division had multiple national and regional presentations both in-person and virtually. Dr. Campbell was invited to give the inaugural Samuel D. Smith Lecture in Pediatric Surgery at Arkansas Children's Hospital, and Dr. Healy presented at the Connecticut Trauma Conference.

RESEARCH

Dr. Finck's lab focuses on innovation and tissue engineering of organs including the lungs and the esophagus. Over the last year, the laboratory has engaged in pre-clinical trials around an implantable scaffold to repair the esophagus. The National Institutes of Health (NIH) awarded this project $1.2 million to continue research in collaboration with a small company, Biostage, based out of Boston. In addition, the Finck laboratory received a Department of Defense Grant in collaboration with the University of Vermont to evaluate an alginate sealant for tracheobronchial injuries. These projects were suspended for a time due to COVID-19 but are back on track. A grant focusing on the mechanism of COVID-19 and obesity was submitted to the NIH. In addition, due to the generosity of a board member, bioprinters were purchased for the lab. They are instrumental in tissue-engineering research, however, they were repurposed during the pandemic to produce face shields, masks, ear connections, and testing swabs for our front-line staff members.

Dr. Finck received two grants in 2021 – an NIH R21 focused on bioprinting of airways for use in premature lung disease as well as an American Society of Metabolic and Bariatric Surgery Foundation grant to study the effect of COVID-19 on lipid rafts. We have filed a provisional patent on our work with bioprinting hollow organ scaffolds.

The division is currently participating in several multicenter studies. New this year is our participation in the Eastern Pediatric Surgical Network. This is a consortium of children's hospitals on the East Coast that are working together to examine low-frequency childhood diseases. Connecticut Children's is the lead site for esophageal atresia with Dr. Finck as the lead investigator. Connecticut Children's also is participating in studies on central line infection (Dr. Knod), appendicitis (Dr. Campbell), and pediatric thyroid disease (Dr. Healy). The division continues to participate in a study to determine the optimal timing of inguinal hernia repair in premature infants; and the best treatment for children who sustain blunt injury to their pancreas. The division is active in other IRB-approved studies as well as health services research, injury prevention research under the leadership of Drs. Campbell and Knod, and basic science research from the lab of Dr. Finck.

THE FUTURE

For 2022, we plan to continue to expand the footprint and presence of the Division of Pediatric Surgery in Southern New England, including expanding in Fairfield County with increased satellite clinics in Danbury and Westport. We will continue to develop niche programs that leverage our expertise such as chest wall deformities, pediatric burn care, weight management, and thyroid disease. Finding the optimal balance of telemedicine and in-person visits to best meet our patient and family needs is a priority. Finally, we are continuing to facilitate in-person access for patients by offering evening and weekend clinic options.

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STAFF

Christine Finck, MD, FACS, *Surgeon-in-Chief, Division Head*

Brendan T. Campbell, MD, MPH, FACS, FAAP
Medical Director, Pediatric Surgery Division
Medical Director, Pediatric Trauma Program
Medical Director, Injury Prevention Center

Michael Bourque, MD, FACS, *emeritus*
Katerina Dukleska, MD
James Healy, MD, MHS
Donald W. Hight, MD, *emeritus*
J. Leslie Knod, MD
Christine Rader, MD, FACS
Surgical Director, Extracorporeal Membrane Oxygenation Program
Medical Director, Chest Wall Deformities Program
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Elisabeth Campbell, PA
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Evan Fusaro, PA
Samantha Pelow, APRN
Allison Schilling, APRN
Abby Theriaque, APRN

Fellow
Jacob Campbell, DO, MPH


ULTA
TRIMLINE

PLASTIC SURGERY

The year 2021 was defined by growth for the Division of Plastic Surgery despite the COVID-19 pandemic. Lauren Schmidtberg, PA-C, and Melissa Condren, APRN, shared duty as full-time division advanced practitioners, and they have made a huge impact. The office administration and staff reorganization has allowed the division to provide a more robust service line. Clinical services were expanded, and new clinical pathways, developed by Christopher Hughes, MD, MPH, were introduced. Education is a priority of the division, and two of our resident trainees and one medical student were accepted into plastic surgery residency programs, and an oral and maxillofacial surgery (OMFS) resident was accepted into a craniofacial fellowship program.

The Plastic Surgery division provides clinical services at Connecticut Children's and at Hartford Hospital. Despite patient concerns related to the COVID-19 pandemic, our surgical volume continued to increase at both hospitals, and includes all types of plastic and reconstructive procedures. Our plastic surgeons frequently collaborate with other surgical specialists, providing state-of-the-art multidisciplinary surgical care. Common surgical procedures performed include complex wound closures including flaps and grafts, craniofacial reconstruction, craniofacial fracture repair, cleft lip/palate reconstruction, breast surgery/reconstruction, body contouring, skin/soft tissue tumor excision/repair, upper extremity/hand surgery/reconstruction, and cosmetic surgery/non-surgical cosmetic procedures. We have successfully implemented telehealth visits for consults and follow-up visits whenever necessary and appropriate.

Ms. Schmidtberg, a physician's assistant, and Ms. Condren, an APRN, shared division duties in 2021, and facilitated the expansion of services provided. The division has increased and streamlined the treatment of breast and chest wall deformities, as well as post-bariatric-surgery weight-loss deformities. Ear molding for infants with protruding or malformed ears is now offered. The division is also actively participating in the Vascular Malformations Team. Surgeries for gender affirmation have also become common, including "top surgery" and facial feminization. The office administration and staff were reorganized and expanded to support the new clinical services. The reorganization of the administration and staff has been crucial to expanding clinical services.

The multidisciplinary Craniofacial Team at Connecticut Children's, directed by division head of Plastic Surgery Charles Castiglione, MD, MBA, remains a center of excellence. The team provides comprehensive evaluation and treatment for patients of all ages with congenital or acquired deformities of the head and neck. Active team members come from many disciplines including Plastic Surgery, Pediatric Neurosurgery, Pediatric Otolaryngology, Pediatric Dentistry, Orthodontics, Oral and Maxillofacial Surgery, Pediatric Development, Social Work, and Speech and Language Pathology. Clinical pathways for cleft lip and palate patients have been updated and modified with excellent results. Clinical research protocols have been established for the common cleft lip and palate surgeries. Craniosynostosis reconstruction, performed by Drs. Hughes and Castiglione, and by Jonathan Martin, MD, Markus Bookland, MD, and David Hersh, MD, of Pediatric Neurosurgery, is also common. Virtual surgical planning for cranial reconstruction and for mandibular distraction is now routine. In addition, the multidisciplinary Craniofacial Trauma Team, under the leadership of Drs. Castiglione and Norman Cavanagh, MD, DMD, provides cutting-edge treatment for all craniomaxillofacial injuries at both Connecticut Children's and Hartford Hospital.

Four plastic surgeons, Duffield Ashmead, MD, Alan Babigian, MD, David Bass, MD, and Steven Smith, MD, are fellowship-trained hand surgeons, and they perform all types of upper extremity and hand surgery. This includes trauma surgery and reconstruction for acquired and congenital deformities. These surgeons also provide coverage for hand call at Hartford Hospital and Connecticut Children's.

Plastic surgeons are involved in volunteer activities, including surgical mission trips. Unfortunately, all mission trips in 2021 were canceled due to the COVID-19 pandemic. Dr. Babigian is director and Dr. Hughes is an active member of Hartford Hospital's Global Health program.

Education is a large component of our division's activities. Residents from General Surgery, Orthopedic Surgery, Urology, Otolaryngology, Oral and Maxillofacial Surgery, and Emergency Medicine rotate on the service. Medical students also elect rotations on Plastic Surgery, and a large Plastic Surgery interest group has been created. Active teaching occurs during daily patient rounds, in the clinic/office setting, the emergency room, the operating room, and during planned teaching conferences. Several residents and medical students have expressed interest in a career in plastic surgery, and two residents and a medical student were matched at premier plastic surgery residency programs in 2021. This brings to 62 the number of our residents and students who have moved on to plastic surgery since 1988 when Dr. Castiglione first began practice. Several residents and medical students are involved in research projects with Drs. Babigian, Hughes and Castiglione. In addition to publishing, Drs. Babigian, Hughes and Castiglione presented papers locally and regionally. Presentations focused on the management of complex upper extremity trauma, the use of small mobile operating room spaces for surgical mission trips, and analysis of global health initiatives. Dr. Hughes is the new plastic surgery editor for *Connecticut Medicine: The Journal of the Connecticut State Medical Society*. Dr. Castiglione is a reviewer for three journals: the *American Journal of Cosmetic Surgery, Craniomaxillofacial Trauma & Reconstruction*, and the *Journal of Oral and Maxillofacial Surgery*. Some department members are involved in local, regional and national professional societies. Dr. Babigian and Orlando Delucia, MD, are members of the executive council of

the Connecticut Society of Plastic and Reconstructive Surgeons. Drs. Babigian and Castiglione are members of the executive council of the New England Society of Plastic and Reconstructive Surgery. Dr. Babigian is an active member of the Northeast Region COVID-19 Coalition Workgroup for Plastic Surgery.

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PEDIATRIC UROLOGY

The Division of Pediatric Urology provides comprehensive and cutting-edge care to the children of Connecticut and is the only urology division in the state ranked by U.S. News & World Report, *an honor we have received for the third year. Despite transitions due to the pandemic in 2021, we anticipate a growth year in 2022 as we recruit staff and continue to expand our presence at satellite locations including Farmington, Glastonbury, and Danbury.*

In autumn of 2021, Courtney Rowe, MD, stepped into the role of interim division head. Among the year's other highlights, she received the Growth and Gratitude Award from the University of St. Joseph in West Hartford, CT, for her leadership during the pandemic and a Presidential Citation from the Society of Pediatric Urology for her advocacy work. Dr. Rowe's translational research in urethral healing was awarded support from the National Institutes of Health (NIH) Loan Repayment Program and was accepted to the Early Career Investigators Workshop run by the American Urologic Association.

Anne Dudley, MD, serves as the Pediatric Urology site director for the University of Connecticut Urology Residency Program. She continues to grow the multidisciplinary Spina Bifida Clinic. As the only clinic in the state that is a Spina Bifida Association Clinic Care Partner, Connecticut Children's provides multidisciplinary and transdivisional care for children with myelomeningocele. Dr. Dudley's dedicated work earned this designation, which is only given to clinics that adhere to validated guidelines for caring for this complex population while working closely with patient advocates and improving the lives of people with spina bifida.

CLINICAL CARE

The Division of Urology is a leader in providing the full range of next generation urologic care to our community. We offer robotic surgical procedures with a dedicated pediatric da Vinci Xi, and have partnered with

our colleagues in the Division of Radiology to provide the most advanced option including MR Urogram using a dedicated 3T MRI and Contract Enhanced Voiding Ultrasound (CEVUS) for radiation-free diagnosis of vesicoureteral reflux. We formed Connecticut's first multi-institutional regional partnership focused on care for children with bladder and cloacal exstrophy. We provide families with the latest collaborative care within multidisciplinary clinics. These include the GUPPE Clinic for patients with variations of sexual development, the ROCKS Clinic for patients with kidney stones, the Prenatal Clinic for patients noted to have urologic conditions on prenatal ultrasound, and the PUV Clinic for patients with posterior urethral valves. We also offer the Connecticut Children's Continence Program for the management of non-neurogenic voiding issues, and it now offers expanded visits with both a physician and an advanced practice provider (APP). Our division embraced telehealth during the pandemic, successfully providing high quality care for nearly all conditions remotely. We continue to leverage telehealth to maximize consultations such as prenatal visits. Nick Rodrigue, NP, stepped in to primarily manage our advanced video urodynamics suite. We invested in updated equipment this year to provide the most cutting-edge technology for evaluating neurogenic and non-neurogenic voiding. Erin Floridia, PA-C, is an invaluable resource as a first assist in the operating room, and both of our APPs are beloved by the patients and families who see them for non-surgical urologic concerns.

EDUCATION

Our division is dedicated to providing education to the next generation of surgeons. We work with residents from the University of Connecticut, providing experience in basic and advanced pediatric urology for our junior residents and opportunities for our senior residents to serve as mentors and teachers to rotating juniors. We are delighted to now welcome interns as the program has shifted to increase urologic exposure in the first year.

As the residency pediatric site director, Dr. Dudley has streamlined evaluations for trainees, and she serves as an examiner for mock oral boards. She works closely

with University of Connecticut medical students, serving as a Capstone mentor for research and a Clinical Longitudinal Immersion in the Community (CLIC) flex instructor for surgical experience and training. Dr. Dudley is also involved in national educational efforts, authoring the core curriculum for American Urologic Association Resident Reference on cryptorchidism.

RESEARCH

Dr. Rowe's lab continues its work in translation research and regenerative medicine. With the strong support of Christopher Foster, MS, our advances in urethral healing produced one preliminary patent and multiple abstract presentations at national and local meetings. Our collaboration with the University of Connecticut on post-surgical pain has progressed to another preliminary patent with the support of William Zempsky, MD.

Dr. Dudley is the site director for the Society of Fetal Urology Prenatal Hydronephrosis Registry. This national multi-institutional collaboration has produced a number of abstracts and publications in 2021. She serves as co-principal investigator of the testicular tissue cryopreservation protocol, which preserves fertility options for children undergoing oncologic treatment.

Kathy Herbst, MS, remains an influential member of the pediatric urology research community. She serves on the Research Committee for the European Society for Paediatric Urology and on the Board of Statisticians for the *Journal of Urology*. She continues to be a valued lecturer on research methodology and statistics to national and international audiences.

DIVISIONAL CHANGES

After five years at our institution, Carlos Medina, MD, moved on in autumn to another opportunity. Prior to his departure, he worked tirelessly to coordinate the Howard Hochman Lectureship in Pediatric Urology in honor of our former senior partner who retired in 2020. This visiting lectureship was successfully funded through generous donations from grateful former trainees and will begin in 2022. It is a fitting and durable legacy for both of these dedicated educators.

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Anne Dudley, MD, Residency Pediatric Site Director

Erin Floridia, PA-C
Katherine Herbst, MSc
Nick Rodrigue, NP

CENTERS

ASTHMA CENTER

The Asthma Center is the region's leader in pediatric asthma research and its premier resource for evidence-based asthma programs. We are dedicated to improving the health and well-being of children and families through community-based collaborative research and programs, and we work to encourage, facilitate, and deliver a mechanism for program dissemination and outcomes assessment of clinical and translational research conducted by investigators within community settings, including schools, homes, community organizations, hospitals and ambulatory practice settings. The Asthma Center is committed to the training of investigators and community stakeholders in community-based research.

In 2021, the Asthma Center merged with the Division of Pediatric Pulmonology to better align clinical programs and research initiatives. With this merger, Melanie Collins, MD, became the co-director of the Asthma Center. Dr. Collins will provide clinical subject matter expertise for all asthma-related programs, services, and studies. Together, the Division of Pediatric Pulmonology will collaborate with the Asthma Center in its vision of developing and disseminating innovative approaches to improving the health and well-being of children, families, and communities. Using a public health approach, the Asthma Center continued to work to reduce health disparities and their determinants by conducting multifaceted, interdisciplinary collaborative research on critical contemporary health issues facing children with asthma, and to establish optimal models of health management and best practices.

The year 2021 began with the long-awaited focused update to the 2007 National Asthma Education and Prevention Program's asthma guidelines. Chaired by the founder of the Asthma Center, Michelle Cloutier, MD, *professor emerita*, the update focused on six priority areas. There are significant changes to asthma management, and staff and investigators in the Asthma Center have worked closely with the primary care community to implement these changes to create the next phase of the guidelines-adherent Easy

Breathing© program. Future work will focus on training pediatricians throughout Connecticut in our award-winning asthma management program.

The Asthma Center completed its third and final year of Cigna Foundation funding to continue its pilot feasibility study of its innovative digital Easy Breathing program. Traditionally paper-based, Easy Breathing is an evidence-based asthma management program that translates national asthma guidelines into a usable format for pediatricians and family medicine practitioners. It is now more accessible to clinicians thanks to a new, tablet-based format currently being tested among pediatricians in one federally qualified health center (FQHC). Results from this pilot indicate that the digital version is feasible, acceptable, and appropriate especially during the COVID-19 pandemic as clinics have transitioned to telemedicine visits. Remarkably and without hesitation, the FQHC had the ingenuity to fold digital Easy Breathing into their telehealth visits. We are confident that program digitization facilitated this seamless transition from in-person to telehealth. The significant increase in program activity during COVID-19 was astonishing as it allowed providers to continue to provide state-of-the-art asthma care in unforeseen times. Providers using Easy Breathing before the pilot conducted fewer follow-up visits using the Asthma Control Test/Childhood Asthma Control Test compared to after the digital implementation (mean two ACTs per month versus 14 ACTs per month, $p<0.05$).

The Asthma Center's Easy Breathing for Schools program is a multipronged asthma education toolkit that reduces asthma-related school absenteeism and improves both asthma control and inhaler technique. In 2021, the Asthma Center continued to implement a $25,000 Environmental Protection Agency (EPA) grant to implement Easy Breathing for Schools in the Hartford area where asthma disproportionately affects low-income African-American and Latino children. A designated bilingual Certified Asthma Educator (AE-C) from the Asthma Center (Sigrid Almeida) provided training to school nurses during the academic year and facilitated screening, survey administration, and data collection. Due to restrictions posed by the COVID-19 pandemic, the program was modified to Zoom-based professional education modules for school nurses.

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Kailee Martin, *Data Entry/Research Intern*

CENTER FOR AIRWAY, VOICE & SWALLOWING

The Center for Airway, Voice and Swallowing, also known as the Aerodigestive Center, provides state-of-the-art care for children with complex disorders affecting airway, breathing, feeding, swallowing, and growth.

Our multidisciplinary Aerodigestive Center consists of pediatric specialists from Otolaryngology, Pulmonology, Gastroenterology, Speech and Language (Swallow) Pathology, and Pediatric Surgery. Appointments with our team include a coordinated visit with pertinent specialists and concurrent diagnostic tests or interventions. For many patients, coordinated surgical endoscopy (also called a "triple scope") is the next step in evaluation and treatment.

Our synchronized approach offers many advantages for patients and families, including fewer doctor visits and missed days of school/work; fewer exposures to anesthesia; less time to effective treatment; and, by combining surgical procedures and minimizing off-target testing, families generally see fewer out-of-pocket medical costs. Ultimately, our collaboration yields more comprehensive, sophisticated, and effective treatment for this vulnerable population.

We offer specialty care centers in Farmington, Glastonbury, and Hartford. Full aerodigestive team clinics are held four times monthly (Hartford, Farmington). Focused specialty clinics are also offered: Airway clinics are held twice weekly (Hartford), voice clinics are held twice monthly (Glastonbury, Farmington), and swallow clinics are held twice monthly (Hartford, Farmington). We now offer telemedicine for these visit types as well.

The year 2021 remained challenging for us all as we continued to face the biggest health-care crisis of our lifetimes. Our team is dedicated to caring for children with airway problems, and SARS-CoV-2 is an airway virus. Our director, Nicole Murray, MD, is co-chair of Connecticut Children's PPE Task Force and helped ensure Connecticut Children's front line health-care workers were safe by developing protocols for the use and reprocessing of N95's and other PPE; a job that has changed over the course of the pandemic depending on the availability of testing, vaccination, and ever-changing supply chain availability.

Despite the pandemic, our team concentrated on growth this year, for while many common pediatric ailments decreased with the advent of masking and distancing, the complex aerodigestive problems did not. In 2021, we expanded with demand and added one more monthly Aero team day, and we increased surgeries and airway appointments. We expanded our inpatient services and began providing complex swallow services and Aero team services to our NICU West patients at John Dempsey Hospital in Farmington, CT.

Lastly, we welcomed several new participants to our team this year, including Leslie Knod, MD, from Pediatric Surgery, Jaime Harris, MD, from Pediatric Pulmonology, and Alexis Cascone, RD, our pediatric nutritionist.

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Claribel Vega, MA
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Renee Grenier, MA
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Katie McLoughlin, MS, CCC-SLP
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Jodi Urzua, MS, CCC-SLP
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Mandatory Masking in place
We're Listening

THE PEDIATRIC OBESITY CENTER FOR TREATMENT, RESEARCH & EDUCATION

The mission of the Pediatric Obesity Center is to be at the forefront of the care of families with obesity by providing innovative clinical service, cutting-edge research initiatives, and tailored education of the next generation of providers. As we enter our second decade of providing care, we reflect on the tremendous challenges and achievements of 2021.

CENTER OVERVIEW

The Pediatric Obesity Center comprises an interdisciplinary team of surgeons, pediatric psychologists, pediatricians, endocrinologists, dietitians and physical therapists. Our team members are clinicians, researchers with funding at national and local levels, and educators in service to trainees, colleagues, and the community. We are dedicated to improving and creating new treatment options for youths and their families. Our team addresses health care disparities with the families we are fortunate to serve, and we publish our work and findings to expand the reach of our care. As educators, we lead the new generation of providers.

CLINICAL HIGHLIGHTS

The COVID-19 pandemic impacted families in many ways. Many experienced being at home for extended periods, and too many were unable to find or afford healthy foods. As clinicians, we saw and continue to see significant health disparities in outcomes for our families as the COVID pandemic continues, and this disparity increases the sense of urgency we bring to our work. With COVID impacting so many in terms of their overall health, our center saw a record number of referrals in 2021, an increase from 1,275 in 2020 to 2,491 in 2021.

With these increased referrals came tremendous opportunities. Our team grew as we welcomed Elena Gandiaga, PA, and Darlene Abbate, APRN. As part of Connecticut Children's upcoming expansion in Fairfield County, which is scheduled for the fall of 2022, we welcomed pediatric psychologist Vanessa Laurent, PhD. We are excited to be providing more services outside of Hartford and will launch our Farmington office in January 2022. Our program continues our national accreditation as a Center of Excellence for Adolescent Bariatric Surgery with a record number of 37 surgeries in 2021 (an increase from 14 in the prior year).

We continued our close partnership with Hartford Hospital and their surgeons Darren Tishler, MD, and Pavlos Papasavas, MD. We are working on the development of a family centered clinic, which will offer a one-of-a-kind treatment program to care for both children with obesity and their parents. In addition, we continued other innovative clinical programming through telehealth to remain connected to our families through the second year of the pandemic. Connecticut Children's Surgeon-in-Chief Christine Finck, MD, FACS, Priya Phulwani, MD, and clinical director of the Obesity Center Melissa Santos, PhD, worked on a care pathway for transgender youth with obesity. We also looked to improve our outcomes after bariatric surgery through the initiation of an Enhanced Recovery After Surgery (ERAS) protocol.

RESEARCH

Throughout 2021, our program remained committed to its research mission. The Pediatric Obesity Center maintains 12 IRB-approved studies targeted at improving care for children and adolescents with obesity. Dr. Finck was awarded a grant from the American Society of Metabolic and Bariatric Surgery for her work entitled, "Evaluation of Increased Susceptibility of Obese Pediatric Patients to SARS CoV-2 Infection." Dr. Santos continues work on her clinical trial of a cognitive behavioral intervention for youth with comorbid obesity and chronic pain, research that is funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)/the National Institutes of Health (NIH). Dr. Santos was awarded an innovation grant from Connecticut Children's Department of Surgery to examine pain, mood, activity, and eating in the immediate time periods following bariatric surgery.

Our team remained active both regionally and nationally through research, collaboration and work groups. Team members presented throughout the year at national conferences including Obesity Week and the Society of Pediatric Psychology Annual Conference. Dr. Santos serves on the governance board of the Pediatric Obesity Weight Evaluation Registry (POWER), a national registry for childhood obesity. She chairs the organization's communications committee and is co-leading the development of a Maintenance of Certification (MOC) project on mental health screening in weight management programs. Dr. Santos is leading the national work group that is writing guidelines for

the psychological evaluation of adolescents undergoing bariatric surgery. Our staff has been asked to serve on data safety monitoring boards for large NIH studies (Finck and Santos) as well as on an NIH study section (Santos). Dr. Santos continues her work on the board of directors for the Society of Pediatric Psychology and was elected president for a three-year term that begins in January 2022. Our clinical staff members serve as ad hoc reviewers for relevant journals. James Healy, MD, was elected to the Childhood Obesity Committee through the American Pediatric Surgeon's Association (APSA) to increase pediatric surgeons' awareness and understanding of obesity.

EDUCATION

Despite COVID, our center continued its mission to train the next generation of obesity providers. In both clinical and research placements, students were present throughout our clinics and were instrumental in the advancement of our work. We look forward to seeing more graduates of our training and are working toward securing national funding to create a consortium for the education of the next generation of obesity providers.

SUMMARY

Our Pediatric Obesity Center entered its second decade of operation with a record number of referrals and families served, and our highest level of academic output to date. While the pandemic continues to present extraordinary challenges, we view them as an opportunity to impact our families in new ways.

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Micaela Sturm, PT, DPT

DEPARTMENTS

PATHOLOGY & LABORATORY MEDICINE

It was another productive and busy year for the Department of Pathology and Laboratory Medicine. There was a 6.7 percent increase in testing volume from 2020 to 2021. The most significant changes were seen in Anatomic Pathology as well as Molecular Pathology and Special Hematology.

In Anatomic Pathology, we continue to recruit for pathologists with subspecialty training. We welcomed Robert Pantaleon Vasquez, MD, a fellow in breast pathology at Mt. Sinai Hospital, NY, who joined us in July 2021. Recruitments in the recent past also have been successful, with Krzysztof Glomski, MD, and Ronald Araneta, MD, successfully integrated into the department. We continue to recruit for other subspecialty pathologists and additionally are recruiting for an associate director in Molecular Pathology.

Surgical specimen volume, including dermatology specimens, also increased over fiscal year 2020. There was a total increase of 3,346 cases, which represents 18 percent growth. Renal tissue triage was performed for 27 patients in fiscal year 2021, a small increase over 2020.

As in past years, the Department of Pathology and Laboratory Medicine (DPLM) at Hartford Hospital provided Pathology Services for Connecticut Children's, including on-site frozen sections; handling of anatomic and clinical pathology specimens including neuropathology and cytopathology; hematopathology services; performance of pediatric autopsies; and pathology support for multiple interdisciplinary conferences including the Pediatric Solid Tumor Board, Pediatric Neuropathology Tumor Board, Pediatric Hematopathology conference, Pediatric GI pathology conference, Pediatric Thyroid Program meeting, and the Neonatal/Perinatal conference. In addition, our department performs triaging of pediatric tumors for the Children's Oncology Group (COG), and assessment and triaging of pediatric medical renal biopsies, and we provide samples of pediatric tumors for the Connecticut Children's Biorepository Bank. We continue to support the cytology Fine Needle Aspiration (FNA) needs of Connecticut Children's. Fiscal year 2021 cytology volume for the medical center increased significantly over 2020, 37 percent in fiscal year 2021 with a total volume of 134 cytology specimens. Of those, there were 26 rapid onsite evaluations performed, representing a 30 percent increase in those procedures over 2020.

We continue to expand the laboratory offerings in immunohistochemistry and molecular pathology, expanding markers used for diagnostic pathology and also ones that have therapeutic implications.

NEW PROGRAMS

Anatomic Pathology

As part of the standardization across the Hartford HealthCare (HHC) system, weekly meetings have resulted in many changes and improvements across all HHC hospitals. A few examples include:

1. Standardized cutting practices with all affiliates doing them the same way (except breast BX and sentinel nodes)
2. Hartford Hospital Immunohistochemistry (IHC) department doing almost all affiliate testing
3. Charlotte Hungerford Hospital (CHH) consolidation completed with Hartford Hospital
4. SharePoint updated to show the current guide for ordering different tests in CoPath
5. Standardization procedure in place with affiliates on cutting their specimens for molecular studies
6. Standardized outside vendors contracts across the HHC system
7. Continuing a research study collaboration with a vendor (Cytoveris) and the HHC Breast Surgery Division to use spectroscopy in evaluation of gross margins intraoperatively. This is being evaluated for genitourinary tumors.

Further, there are collaborative studies ongoing with the Jackson Laboratory (JAX) in Farmington, CT, in the area of digital pathology and correlating those results with molecular data. Additionally, we have an approved IRB study for evaluating an AI tool in the pathologic diagnosis of breast cancer. This is in collaboration with a vendor and HHC innovation.

Hematopathology

The Hematopathology division has implemented state-of-the-art 12-color flow cytometers for clinical use, which has created an opportunity to enhance our existing multicolor antibody panels. Related projects include:

1. Optimization of technical performance and establishment of standard operating procedures for FACSLyric 12-color flow cytometers in collaboration with BD Biosciences and peer clinical laboratories (University of Washington, and Vanderbilt University). These data are being collated for publication to facilitate clinical implementation by new users.
2. Development, validation, and implementation of a multicolor assay incorporating T Cell Receptor Beta Constant 1 (TRBC1) to permit identification of phenotypically abnormal monoclonal T-cell populations.
3. Development and ongoing validation of high-dimensional multicolor antibody panels for myeloid neoplasia, to facilitate detection of measurable residual disease (MRD) in acute myeloid leukemia.
4. Development and ongoing validation of a multicolor antibody panel incorporating vs38 to permit detection of neoplastic plasma cells in myeloma patients who have been treated with daratumumab.
5. Development of a multicolor antibody panel to permit high-sensitivity detection of monocyte and granulocyte paroxysmal nocturnal hemoglobinuria (PNH)-type clones.

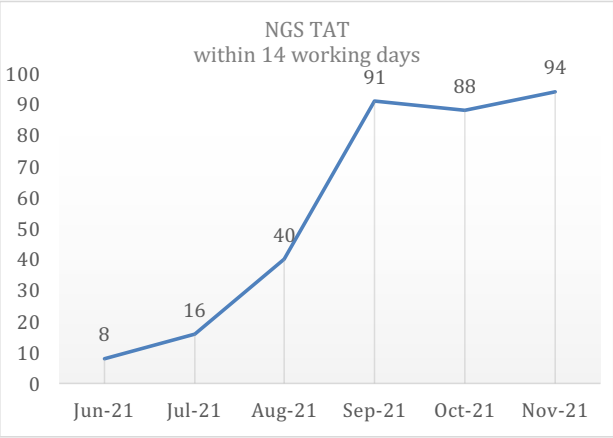
Informatics

A lot of background work got put into implementation of expanding the scope and capability of whole-slide digital scanning. Various vendors were evaluated, information technology leadership was engaged, and a large capacity scanner purchased. The scanner has been installed and validation is ongoing to implement for clinical use. The above-mentioned collaborative projects will be the first few clinical research studies performed on the slide scanner.

Molecular Pathology and Cytogenetics

Volume, scope of work, and complexity of cases for the Division of Molecular Pathology and Cytogenetics at Hartford Hospital has progressively increased as developments in cancer diagnosis, prognosis, and treatment have become more heavily reliant on the testing performed in these areas. The year 2021 brought a number of improvements in the division, including:

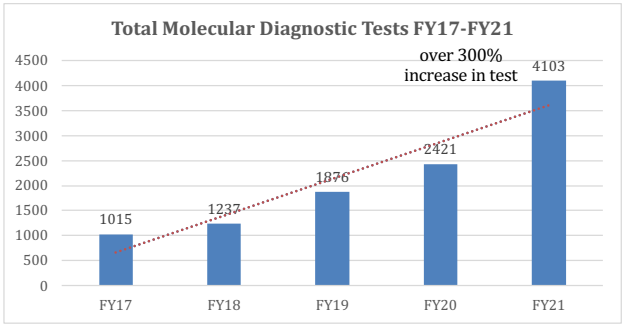
1. Validated the VariantPlex Heme (170 gene) and Pan Heme FusionPlex (207 gene) Next Generation Sequencing panels to expand the hematology test menu.
2. Received approval for an associate division director position and additional instrumentation to support the expansion of molecular testing.
3. Streamlined the workflow for variant analysis and result reporting, which led to a significant improvement in the Next Generation Sequencing (NGS) turn-around time and provider satisfaction.



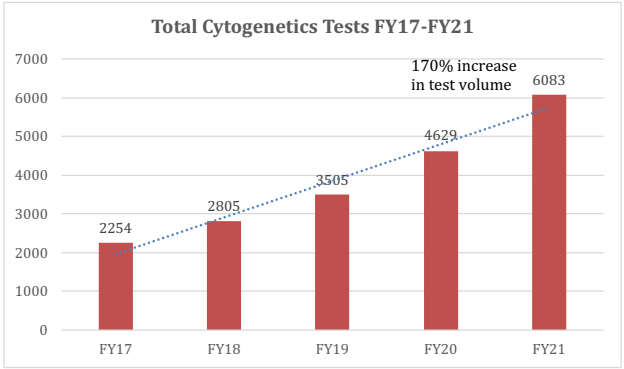
NGS TESTING EVOLUTION AT HHC:

2017	49-gene Hematology Panel
	50-gene Solid Tumor Panel
2018	*added the following:*
	65-gene fusion-plex Solid Tumor Panel
	99-gene variant-plex Solid Tumor Panel
2019	*added the following:*
	26-gene Sarcoma RNA Fusion panel
2020	*added the following:*
	75-gene Hematology Panel
2021	*added the following:*
	170-gene Expanded Hematology Panel
	207-gene fusion RNA Hematology Panel

GROWTH OF MOLECULAR DIAGNOSTIC TESTING AT HHC:



GROWTH OF CYTOGENETICS TESTING AT HHC:



LABORATORY MEDICINE

Microbiology

Over the course of 2021, the HHC Ancillary Microbiology Laboratory at Newington implemented the following instruments and/or assays as well as continued forward with COVID-19 testing initiatives. 236,620 SARS-CoV-2 NAA (PCR) tests and 19,799 multiplex (SARS-CoV-2, Influenza A&B, RSV) were performed in-house during fiscal year 2021.

1. The HSV 1 & 2 (herpes simplex virus) PCR and VZV (varicella-zoster virus) PCR for CSF specimens was validated on the Luminex Aries, allowing in-house performance of these assays starting October 19, 2021.
2. Cryptococcus antigen with reflex to titer for CSF and serum replaced the Cryptococcus antigen latex assay on September 14, 2021, reducing subjectivity and improving accuracy.
3. The Biofire® Torch Respiratory 2.1 panel, which includes SARS-CoV-2, replaced the RP2.0 panel. The RP2.1 was also launched at Hartford Hospital.
4. An additional Panther Plus instrument with expanded MTU module was installed and verified for SARS-CoV-2 in March 2021, expanding COVID-19 Nucleic Acid Amplification (NAA) testing capacity at Newington Hartford Hospital ancillary Laboratory (HHAL) for the Hartford HealthCare system.
5. Alinity i SARS-CoV-2 IgG II assay for Spike IgG detection was implemented on May 11, 2021. It allows for detection of the Spike IgG, which can be positive in natural infection or post-vaccination with the current vaccines.
6. SARS-CoV-2 IgM assay for Nucleocapsid IgM detection went live on March 16, 2021. It allows for detection of early Nucleocapsid IgM production in SARs-CoV-2 infection. This is for natural infection only.
7. Hologic HIV, HCV and HBV viral loads went live on the Panther on March 26, 2021. These assays had previously been performed on the

Abbott m2000 and had to be sent to a reference lab to accommodate COVID-19 Nucleic Acid Amplification (NAA) testing during 2020.

8. A system-wide Hartford HealthCare initiative for standardization of blood culture collection to reduce the number of contaminated blood culture collection events was launched. A standard work document was created and distributed to the phlebotomy and Emergency Department management teams at all hospitals. A blood culture collection brochure was created and has been added to the blood culture collection kits (bags) at each hospital. Implementation and use of chloraprep swabstick as a preferred skin disinfectant as well as use of a red-top discard tube has been communicated at each hospital. All hospitals are at various levels of operationalizing the standard process. Monthly reports are sent with the percent of contaminated blood cultures for each hospital.

9. A Microbiology new discrete-results interface went live on August 31, 2021. This facilitated display of minimal inhibitory concentration values within the antibiotic susceptibility test result, and it allows for future progression to the Epic Bugsy module for infection prevention.

10. Standardization of manual operating-room (OR) order requisition and distribution occurred. The standardized manual OR requisition for Hartford HealthCare was revised to include newly created bone- and joint-specific order codes - new Tissue Joint Culture (hold 14 days) as well as new Tissue Culture (aerobic, anaerobic, and gram), as well as the addition of a recommended collection container guide with PeopleSoft numbers to improve specimen stability and receipt of appropriate transport containers. This was made available to order in PeopleSoft by the OR teams in May 2021.

Core Laboratory (Hematology/Chemistry)

1. The main chemistry analyzers (Roche COBAS 6000), some of which had been in service for twice their expected productive life spans, were replaced by state-of-the-art Roche COBAS 8000 instruments. This upgrade was a complicated and multifaceted process that required physical laboratory modifications and extensive side-by-side validations, all of which had to be accomplished while maintaining the full menu of laboratory assays. The first COBAS 8000 line went live for patient testing on June 17, 2021. The second line is slated for go-live January 11, 2022 (along with serum indices to automate and standardize evaluation of hemolysis, lipemia and icterus).

2. In support of rapid growth of the Hartford Hospital transplant and trauma programs, Heart and Vascular Institute, and Neurosciences Institute, two new Verify Now platelet function analyzers were brought on line. Similarly, the number of thromboelastographic assays, body fluid analyses, and critical care tests increased substantially year-over-year:

	2020	2021
TEGs	3,801	4,871
Lactates	42,404	51,405

Transfusion Services (blood bank)

1. Two important safety initiatives were instituted during fiscal year 2021:

   A. The Epic Blood Product Administration Module (BPAM) was expeditiously operationalized by colleagues in HHC Care Connect. Inherent in interfacing the laboratory computer (Sunquest) with the Epic EMR is the dilemma of matching blood orders with complex ISBT codes for blood products. The BPAM adds a layer of positive identification that affords confirmation that the ordered product is transfused to the intended recipient.

   B. Most "never events" of mismatched transfusion with major side effect incompatibility and acute life-threatening hemolysis are due to mislabeled specimens, where the label on the tube does not correspond to blood sampled from the intended patient. That is why regulations specify that samples for cross-matching must be either:

      i. Collected and labeled at the bedside using a process that assures a positive ID, such as the Sunquest Collection Manager, which is used by lab phlebotomists, or,
      ii. Confirmed to be of the same ABO group by obtaining a second, separately collected sample.

      A practice gap was identified at Hartford Hospital whereby a second independent sample for ABO confirmation was not always performed, as long as the Type and Screen was properly labeled, signed, and dated by the collector (without using a "fail-safe" technique, such as is performed by lab phlebotomists). To this end, our standard operating procedure (SOP) was modified at Hartford Hospital so that any single specimen collected without collection manager that was not corroborated by a historic ABO type would require a second, confirmatory sample to confirm the ABO group. If it was not possible to collect a second sample prior to transfusion, then the patient would receive ONLY group O red cells until their ABO group was confirmed.

2. In concert with the ever-increasing volume and acuity of patients who require, or who may require, transfusion of blood products, the number of type and screens processed by the transfusion service at Hartford Hospital increased from 41,226 specimens in fiscal year 2020 to 45,542 specimens in fiscal year 2021, a 10.4 percent increase. There are established benchmarks for the number of transfusion service full-time employees (FTEs) required for safe operation. We continue to monitor the ratio of T&S samples to FTEs, and address any need for additional staff, if identified.

3. Hartford Hospital is home to a vibrant and nationally renowned trauma program and Level 1 Trauma Center. Initiatives are constantly revisited to optimize resuscitation of the critically injured patient. This includes a comprehensive massive transfusion protocol that is supported and monitored for effectiveness by the laboratory's medical and administrative leadership. At the end of fiscal year 2021, Hartford Hospital's Trauma Program was successfully recertified by the American College of Surgeons. The laboratory and transfusion service participated extensively in the inspection and certification.

In fiscal year 2021, the transfusion service began to provide a standing inventory of Low Titer group O Whole Blood (LTOWB) in the Hartford Hospital Emergency Department's red pod (critical care unit). Evidence-based support is evolving that suggests the superiority of this product for massive transfusion in lieu of "recreating" whole blood from individual components. This initiative is an example of the transfusion service and clinical lab's collaboration with Hartford Hospital's Trauma Program.

DEPARTMENT GOALS

Plans to renovate the frozen section room to meet demand got underway as planned but were delayed due to the COVID-19 pandemic. The renovation and move to the new frozen section room are ongoing.

In Anatomic Pathology, some of the goals include: procedures to improve adequacy of specimen material submitted for molecular studies in tumor cases, updating of gross manuals, and work to rectify the processing of Epic orders for cytology specimens.

COVID/flu testing initiatives include: new tests (molecular and antibody), new instrument platforms (Revogene, Roche 8800, Trax), referral laboratory services (Sema4), and interface development.

In Molecular Pathology, the sequencing panel for solid tumors will be expanded to include tumor mutational burden testing. The validation for the expanded panel for hematologic malignancies will be finalized.

STAFF CHANGES & PLANNED RECRUITMENT

We successfully recruited Robert Pantaleon Vasquez, MD, a surgical pathologist with subspecialty training and expertise in breast pathology.

Pertinent subspecialization

1. There is a wide range of subspecialization in the department broadly as Anatomic and Clinical Pathology. Within Anatomic Pathology there is subspecialization as follows: neuropathology (3), cytopathology (6), pediatric pathology (1), molecular pathology (2), and dermatopathology (1). Additional members within Anatomic Pathology have specialty skills in organ systems for which there is no board certification. These include breast pathology, GI pathology, GU pathology, gynecologic pathology, pulmonary pathology, head and neck pathology, and soft tissue/bone tumor pathology. Additionally four members of the department are board-certified in hematopathology to provide support in Hematology and Hematopathology.
2. In other areas of Clinical Pathology, two staff members provide support in transfusion medicine. One is board-certified in transfusion medicine and the other has specialty expertise in coagulation. There is one PhD board-certified member in each of the following disciplines: microbiology, chemistry, molecular pathology/cytogenetics, and immunopathology.

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STAFF

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Dean Uphoff, MD
Robert Pantaleon Vasquez, MD
Theresa Voytek, MD

The [illegible] guided procedures to all clinical divisions at Connecticut Children's. The department participates in the Image Gently Alliance, seeking to minimize radiation while utilizing best practice standards, and American College of Radiology (ACR) Appropriateness Criteria® to provide optimal diagnostic imaging for children.

Imaging modalities range from digital radiography to state-of-the-art magnetic resonance. The department is accredited through the American College of Radiology in ultrasound, CT and MRI. Image-guided procedures are performed on site at Connecticut Children's with support from the divisions of Anesthesia and Sedation, improving delivery of care in a pediatric-friendly environment. Radiologists perform these diagnostic and interventional services on a 24/7 basis, providing uninterrupted care to the children we treat.

Our priority is always focused on balancing optimal image quality with dose reduction strategies throughout the department. Digital radiography and low-dose imaging equipment, such as the EOS scoliosis technology in our orthopedic department, help us achieve these goals.

The Ultrasound division offers extended appointments at our Hartford campus on weekdays and on the weekends to meet the needs of our patients and their families. Ultrasound imaging by our subspecialty-trained sonographers is also available at our Farmington, Danbury and Westport locations, allowing the community greater access to these expertly performed examinations. Contrast-enhanced ultrasound using microsphere bubbles is a new technique that assists our radiologists in the evaluation of vesicoureteral reflux or characterization of hepatic lesions without the need for radiation or sedation.

Fluoroscopy is an important tool for diagnosis and procedural guidance in a variety of conditions in children. This examination is performed at the Hartford campus using a Siemens flat-panel unit with pulsed fluoroscopy, allowing for significant radiation dose reduction with

improved image quality. This equipment is in alignment with our philosophy to "Image Gently and Step Lightly" to minimize a patient's exposure to ionizing radiation. This goal is facilitated by constant monitoring and technical adjustments with state-of-the-art dose monitoring software.

Computed Tomography continues to have a significant role in the diagnosis of a wide variety of conditions in outpatient, inpatient, and emergency settings. A new scanner installation is in process, providing ultrafast imaging capability which results in rapid coverage of the areas of concern and essentially "freezing" the rapid physiologic motion of the heart and lungs in small children. This helps to minimize the need for sedation and anesthesia and improves image quality. Every child is different, and our CT scanning techniques are monitored to ensure dose optimization for children of all sizes. We continue to participate in the American College of Radiology Dose Index Registry, which enables us to benchmark our CT doses with other facilities.

The MRI department offers state-of-the-art facilities with both 1.5T and 3T field strength units at Connecticut Children's Hartford campus. The 3T MRI system provides advanced cardiac imaging and neurologic imaging, such as functional brain MRI. Other advanced imaging protocols include quantitative liver imaging, whole body MRI, and functional imaging of the urinary tract, all optimized for our pediatric patients. The ability to provide film and music streaming during the examinations allows children to undergo their MRI study comfortably without sedation, as much as possible. For more technically challenging or lengthy studies, the Sedation Service, Department of Anesthesia, and the Child Life Team offer outstanding resources to help our children undergo MRI or CT examinations.

Education is a major component of the activities of the Division of Pediatric Radiology. Radiology residents from Hartford Hospital, University of Connecticut, and St. Vincent's Hospital Bridgeport programs receive pediatric radiology training in our department. We also host elective rotations for UConn pediatric residents and pediatric subspecialty fellows, as well as UConn and Quinnipiac University medical students. Additionally, the department engages in the education of sonography and radiography technology students. Didactic lectures and case presentations provide teaching to our residents, medical students, and radiology staff. Clinical care and teaching conferences are held in collaboration with the divisions of Pulmonary Medicine, Gastroenterology, Endocrinology, Pediatric Surgery, Hematology-Oncology, Orthopedic Surgery, Rheumatology, Urology/Nephrology, and Critical Care. Through these activities, the Department of Radiology seeks to deliver optimized, patient- and family-centered care to the children we serve.

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Molly Mable, PA-C, RT(R)
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ACADEMIC AFFAIRS & RESEARCH

Connecticut Children's strives to encourage, support, and recognize the academic activities and achievements of its Departments of Pediatrics and Surgery faculty and staff. The mission of our Academic Affairs office is to empower faculty, medical learners, and community providers to succeed in their academic endeavors, professional development, research, and quality improvement pursuits by providing critical and timely administrative, technical, and educational support.

The year 2021 was challenging in many aspects of our daily routines, and once again this annual report reflects the professionalism, skill, adaptability, and resilience of our academic teams. Their dedication allowed us to advance our institution's mission to create hope and build healthier futures all while protecting our patients, their families, and our team members from COVID-19.

What resulted from everyone's hard work can be seen in the many successes and achievements listed in the pages that follow. Throughout the three academic pillars across our Departments of Pediatrics and Surgery – Research and Innovation, Medical Education across the continuum, and Faculty Development and Well-being, we moved forward in meaningful ways on our ***Journey to Excellence*** in academic pediatric medicine.

To name just a few accomplishments, our Board of Directors approved moving forward with the Connecticut Children's Research Institute (CCRI); we received the approval of the Accreditation Council for Graduate Medical Education (ACGME) for a new fellowship in Cardiology; and we celebrated 16 new faculty academic promotions. Two of our senior faculty members were granted *professor emeritus* status in the Department of Pediatrics at the University of Connecticut School of Medicine.

The wonderful work detailed throughout this section of our 2021 academic annual report is directly attributable to our team members and to the steadfast support of our leaders over the course of an extremely challenging but deeply rewarding year. My sincere thanks to the following leaders and colleagues for the dedication and hard work that enabled us to achieve so much during a time of prolonged adversity: Elizabeth Anderson, BS, Neal Breen, MBA, Michael Brimacombe, PhD, Stacy Chandna, MS, CIP, Danielle Chenard, MPH, Marianne Custer, BS, C-TAGME, Kim Davey, MBA, James Harnsberger, PhD, Kathy Herbst, MS, Jessica Hollenbach, PhD, Garry Lapidus, PA-C, MPH, Esperanza Lesmes, Hendriana Nielsen, RD, RN, Alison Oville, CCRC, CHRC, James Santanelli, MS, MPH, Julie Vigil, MS, MPH, FACHE, CHC, CHRC, and Carrie Zevetchin, MS. Individually and collectively, this leadership team guided our academic teams with confidence, empathy, and focus. Of course, for guiding and inspiring all of us, my sincere thanks to Surgeon-in-Chief Christine Finck, MD, FACS, and Physician-in-Chief Juan Salazar, MD, MPH, for their exemplary leadership, expertise, and compassion during a year we will always remember.

My pride in the work that was accomplished this past year is never-ending. I hope as you read this annual report, you will be equally proud of the dedication of this team.

Annamarie Beaulieu, MPH, BBA
Senior Director, Academic Affairs, Sponsored Programs, Research Operations and Development, Continuing Medical Education

ACADEMIC ADMINISTRATION

The Department of Pediatrics is fortunate to have a very strong presence and administrative support on both the University of Connecticut Health Center (UConn Health) and Connecticut Children's campuses. With faculty based at multiple institutions, administration of the Department of Pediatrics is comprised of centrally managed academic functions for affiliated faculty, and decentralized business and research management functions for all faculty.

Esperanza Lesmes, senior program manager, in collaboration with the offices of both Pediatrics and Surgery Chairs staffed at Connecticut Children's, manages academic appointments, reappointments and promotions; the academic merit plan for affiliated faculty, academic faculty contracts; and in collaboration with a per diem editor and Marianne Custer, senior manager of the Office of Continuing Medical Education and Fellowship Programs, produces the *Departments of Pediatrics and Surgical Subspecialties Annual Report*. In addition, Esperanza collaborates with Francis DiMario, MD, associate chair for Academic Affairs, to produce the *Faculty Resource Guide*. The administrative staff in the chair's office maintains close communication with the Department of Pediatrics Academic Office at UConn Health.

Julie Vigil, administrative director of the Department of Pediatrics and her team at UConn, manage the academic budgets, including in-residence faculty, tenured faculty support, components of the residency budget, discretionary accounts, and UConn Health-based sponsored programs. The Pediatric academic office serves as the support and key logistical link between the decentralized offices within other institutions/departments and UConn Health's administrative and financial offices.

FACULTY PROMOTIONS

Karen Rubin, MD, and Edwin Zalneraitis, MD, awarded *professor emeritus* status. Michael Isakoff, MD, Jonathan Martin, MD, Cliff O'Callahan, MD, and Marianne Pappagallo, MD, promoted to Professor of Pediatrics. Allison S. Cowl, MD, promoted to Associate Clinical Professor. Sonia Chaudhry, MD, Henry Chicaiza, MD, Nancy Dunbar, MD, Patricia Garcia, MD, Christopher Grindle, MD, Eric Hoppa, MD, Vincent Matt Laurich, MD, Jennifer Madan Cohen, MD, and Grael O'Brien, MD, promoted to Associate Professor of Pediatrics. Elliot Melendez, MD, granted an appointment as Associate Professor. Katherine A. Hinderer, PhD, Kelley Maynes, PsyD, and Jennifer Schwab, MD, promoted to Assistant Professor.

FACULTY APPOINTMENTS

New Faculty Members

David Krol, MD, Center for Integrated Care; Laura Caneira, DNP, Suspected Child Abuse and Neglect (SCAN); Anudeep Dodeja, MD, James Enos, MD, Cesar Mesia, MD, Anna Tsirka, MD, Cardiology; Vanessa Laurent, PhD, Child and Adolescent Psychologist; Ruchika Jones, MD, Emergency Medicine; Karen Loechner, MD, Division of Endocrinology and Diabetes; Christine M. Chew, PhD, Primary Care, Division of General Pediatrics; Patrick Kwok Shing Ng, PhD, Hematology/Oncology; Ashley Howard, DO, Division of Infectious Diseases and Immunology; Adam Czynski, DO, Emily Gritz, MD, Mishika Malik, MD, Melissa Schwedhelm, MD, Phyllis Wan-Huen, MD, Elaine Wang, MD, Division of Neonatal-Perinatal Medicine; Hanan Tawadrous, MD, Division of Nephrology; Matthew Brown, MD, Division of Orthopedic Surgery; Ross Cleveland, MD, Preeti Sandhu, PsyD, Division of Pain and Palliative Medicine; Jamie Harris, MD, Division of Pulmonary Medicine; Tze Chao Chiam, PhD, Division of Patient Safety and Quality Improvement; Katerina Dukleska, MD, Department of Surgery. Our 2021-22 chief residents, Brooke E. Bohn, MD, Divya Harpalani, DO, and Gabriela Izzo, MD, were granted faculty appointments in the Department of Pediatrics.

Joint Appointments

David S. Hersh, MD, Neurosurgery; Wendy Henderson, PhD, School of Nursing, UConn; Fumiko Hoeft, MD, PhD, Psychological Sciences, UConn; Lovejit Kaur, MD, Child and Adolescent Psychiatry; Jonathan Martin, MD, Neurosurgery.

Community-based Faculty

Patricia Joyce, MD; Kasia Koziol-Dube, MD; Lauren Melman, MD, Middlesex Hospital; Melissa Schwedhelm, MD; Phyllis Wan-Huen, MD, NICU - New York Children's Medical Provider Services; Alison Sturm, MD, Emergency Department (Fast Track); Jonathan Uhl, MD, Urgent Care; April Joy G. Damian, PhD, Johns Hopkins Bloomberg School of Public Health; Katelyn R. Cusmano, MD; Philip T. Knight, MD, and Barbara Zsajda, MD, Clinical Longitudinal Immersion in the Community (CLIC), UConn.

CONTINUING MEDICAL EDUCATION

The world of continuing medical education (CME) continues to be an exciting one, and the Office of CME at Connecticut Children's certainly had its share of accomplishments in 2021.

Our CME portfolio increased by 20 percent compared to the 2020-21 academic calendar with 69 available conferences, the largest to date that our office has ever accredited. Our Maintenance of Certification (MOC) Part 2 offerings increased by 30 percent in 2021 with 25 conferences offering MOC Part 2 credit and a 72 percent increase of enduring materials with 18 conferences offering that option for those learners who are not able to tune in live. Our office's joint providership efforts continued to grow as well. In the academic year 2021-22, Connecticut Children's Office of Continuing Medical Education became the accreditor for the 2021 Children's Hospital Neonatal Consortium (CHNC) Annual Conference, International Lactation Consult Association (ILCA) Annual Conference, and the Step 2 Education International Inc: Breastfeeding Essentials for Physicians online modules.

Our Pediatric Grand Rounds podcast was updated and branded with a new intro and exit that bookends each presentation while enhancing the listener's experience. Our Traveling Grand Rounds efforts expanded to reach our Nuvance™ Health partners in Poughkeepsie, NY, (at the hospital formerly known as Vassar Brothers Medical Center). Our Traveling Grand Rounds Speaker Bureau increased its presenters by 8 percent over the last academic calendar, and all area hospital calendars were booked as early as July 31, 2021, another new record for our office as historically we are not fully booked until Halloween. In November, we wrapped up the fall session of our Biannual Joint Pediatric Symposium with our Nuvance partners. Due to COVID, the symposium transitioned from a live event to a virtual one. We are looking forward to our 2nd Annual Diversity, Equity & Inclusion (DEI) Symposium. We will be offering an in-person experience in April of 2022, at the Pondhouse Café in Hartford, CT, in addition to live and on-demand virtual options for remote participants. Last year we collected $1,800 from our DEI symposium efforts, and the funds helped support a Hartford Public High School graduate's first year of nursing studies at the University of Hartford. We hope to continue to support our community with similar efforts with funds from the 2022 symposium.

Our staff registered achievements on a national level as well. Nicole Capsolas, CME coordinator III, and CME manager Liz Anderson, BS, CHCP, hosted a session entitled "CME Metrics" at the Annual Accreditation Council for Continuing Medical Education (ACCME) spring conference. The event had the highest attendance of the peer-to-peer sessions with over 101 participants. The session received a 100 percent poll score for providing help. In the words of one participant, the session offered "Excellent information for managing and then communicating metrics. Lots to think about with streamlining ours!" The enthusiasm didn't stop there. Members of the Connecticut Children's CME office continued to meet with staffers from other

medical centers to share best practices and offer additional tips and tricks.

Last but certainly not least, our Maintenance of Certification Practice Quality Improvement (MOC 4) program rolled out an updated website showcasing a new digital application for submissions. We are portfolio sponsors for 16 available American Board of Pediatrics projects and two available American Board of Medical Specialties (ABMS) projects. In October, we submitted and were approved for our first ABMS project. The Office of CME looks forward to its first reaccreditation under the ACCME, which is scheduled to take place in 2022.

The best part about education is there is always something new, exciting, and life-changing to learn. At Connecticut Children's, there is room for the continued growth of our programs along with the opportunity to support our medical learners as this digital COVID era presses on.

DEPARTMENTAL HIGHLIGHTS OVER THE LAST YEAR INCLUDE:

- Elizabeth Anderson attained Certification of Healthcare Continuing Professional Development (CHCP).
- Nicole Capsolas was promoted to Continuing Medical Education program coordinator III.
- Amanda Ross, BS, C-TAGME, was promoted to senior program coordinator, Fellowship Programs.
- Kierstyn Callahan and Amanda Ross achieved the rank of Certification-Training Administrators for Graduate Medical Education (C-TAGME).
- Nicole Capsolas, CME coordinator III, and CME manager Liz Anderson, BS, CHCP, hosted a session entitled "CME Metrics" at the Annual Accreditation Council for Continuing Medical Education (ACCME) spring conference April 2021.
- Amanda Ross, BS, C-TAGME, senior program coordinator, was awarded the T. Stewart Hamilton Scholarship Fund by the Capital Area Health Consortium and the UConn School of Medicine to support her participation in the Leadership Empowerment for Advancing Pediatric Education Specialists (LEAPES) program.
- Ms. Ross celebrated her first publication: Ross A, Hernandez F, Shorter C. Introduction to mentoring. HCPro Residency Program Alert. 2020 Feb;18(2):9-12.
- Julie Vigil, MS, FACHE, CHC, CHRC, Administrative Director of the Department of Pediatrics for UConn Health, has received her Master's in Public Health (MPH).

STAFF

Annamarie Beaulieu, MPH, BBA
Senior Director, Academic Affairs, Sponsored Programs, Research Operations and Development, Continuing Medical Education

Staci Brown
Administrative Assistant III

UConn Health

Julie Vigil
Administrative Director, Department of Pediatrics

Laurie Papacs
Administrative Officer, Department of Pediatrics

Gina Saccone
Administrative Fiscal Assistant

Allyson S. Martincheck
Administrative Assistant, Department of Pediatrics

Connecticut Children's

Esperanza Lesmes
Senior Program Manager

Elizabeth Anderson
Continuing Medical Education Operations Manager

Nicole Capsolas
Continuing Medical Education Operations Coordinator III

Marianne Custer
Senior Manager Office of CME and Fellowship Programs

Amanda Ross
Senior Fellowship Program Coordinator

Kierstyn Callahan
Fellowship Program Coordinator II

Allison Williams
Fellowship Program Coordinator

RESEARCH OPERATIONS & DEVELOPMENT DEPARTMENT

For the Research Operations & Development Department (RODD), the fiscal year 2021 was marked by the dramatic, organic growth of our core services and the enhancement of our team's skills to embrace the ongoing digital transformation of the Connecticut Children's research enterprise.

Historically, we have served our clinical divisions with regulatory support, protocol development, study start-up to study close-out, study logistics (recruitment, consenting, standardized operating procedures), database builds, and database management. RODD also has been responsible for the University Research Assistant Program (URAP) for University of Connecticut undergraduates, giving them the research design skills and a clinical setting for their inaugural investigations. The URAP program is under the medical direction of Sharon Smith, MD (Emergency Medicine), with Danielle Chenard, MPH, and research associate Mary-Kate Nowobilski providing management and coordination support.

In fiscal year 2021, all of these services experienced dramatic expansion to meet the growing needs of our productive principal investigators. [See Table 1.] We successfully recruited six new research assistants: Kristen Volz, Noah Schulman, Celina Porcaro, Chris Theriault, Vaishali Belamkar, and Megan Anderson. Each brings a unique educational and experience background and all are committed to helping their PIs successfully implement and complete their research studies. Our URAP program branched out beyond its historic relationship with our Emergency Department to 10 total clinical divisions. [See Table 2.] Finally, we expanded our capacity to communicate persuasively and with precision by the recruitment of a new scientific grant writer, James Harnsberger, PhD. He is tasked with increasing the number and quality of our research grant applications, with an emphasis on submissions to federal research agencies (e.g., the National Institutes of Health). Since his start in October 2021, he has collaborated with a number of our Tier 1 investigators to better understand their research portfolios and upcoming research grant submissions. In addition, Dr. Harnsberger serves as the chair of the Scientific Review Committee (SRC) and has already contributed to the Connecticut Children's Research Institute Growth Plan, which charts the path forward to elevating Connecticut Children's to join the ranks of our nation's top pediatric research and clinical service centers.

To properly address the needs of our stakeholders, RODD had to go beyond personnel growth to enhance the skills of our division and staff. Upskilling entails not only acquiring new skills – it embraces a cultural shift to hyper-collaboration, continuous learning, and data-driven improvement. In fiscal year 2021, we implemented continuous training programs in eight key areas to improve customer access and experience: 1) literature review, 2) regulatory documents, 3) database development/management, 4) study implementation, 5) data abstraction/collection, 6) coding data, 7) analyzing data, and 8) abstract/manuscript preparation. This led to a focused effort to increase our staff's skills in designing REDCap surveys, a vital tool for many of our investigators. Team members participated in an online REDCap training program to advance their skills from novice to intermediate to advanced.

On the analytics side, RODD now offers novel data visualization technology via the June 2021 launch of the UConn GIS (Geographic Information Systems) Health Lab at Connecticut Children's. GIS provides exceptional tools that hold the promise to revolutionize our understanding of disease etiology, injury epidemiology, and health promotion. GIS analysis allows visualization, management, and reporting of thematic data (e.g., demographic, epidemic, socioeconomic, environmental, and clinical data) under different geographic contexts. Such analyses can be employed to identify spatial patterns and associations within the built environment.

The GIS Health Lab is a collaboration with the University of Connecticut's Department of Geography. Connecticut Children's will benefit by expanding its capabilities to model geographic health data and continue its history of policy initiatives and research insights using GIS. The UConn Geography department will benefit from

the addition of health-related student internships and collaborative opportunities for GIS and health research. Three initial projects have been identified for spatial analysis: Emergency Department youth suicide screening (Steve Rogers, MD); firearm violence (Brendan Campbell, MD); and cardiology (Brooke Davey, MD). In support of these PIs, eight Connecticut Children's team members received GIS training to ensure the highest level of

service in our fast-paced, fluid research space. Finally, our department is leading and managing the Scientific Review Committee (SRC). The SRC provides a structured review of investigator-submitted study protocols to enhance their scientific quality. In FY21, we reviewed 40 study protocols. With support from Connecticut Children's Physician-in-Chief Juan C. Salazar, MD, MPH, and Surgeon-in-Chief Christine Finck, MD, FACS, we upskilled the SRC staff with help from content-area experts from each clinical division, each of whom was nominated by their respective division chiefs. We now have an SRC whose members can provide a full spectrum of support for junior faculty by contributing their expert content knowledge, and they simultaneously are enhancing their own research methods, design, and analytic skills – all of which contributes to research excellence at Connecticut Children's.

Our organic growth and training efforts are already paying dividends. This past fiscal year our investigators published 208 articles. In addition, our investigators have submitted 80 grant applications resulting in $72,051,701 in grant awards. We are also pleased to announce the promotion and awards of several of our team members, including:

- Drew Cohen was promoted to research engineer. He has been instrumental in streamlining and managing the multifaceted operations of the Center for Motion Analysis (CMA), as well as supporting research efforts in Orthopedics and Sports Medicine.
- Mary-Kate Nowobilski was promoted to research associate. She has been instrumental in the URAP expansion, supporting the Injury Prevention Center's surveillance system, and the Hematology/Oncology department's efforts to provide sexual health education for their patients and families.
- Kathy Herbst, MS, was presented with the NICHD award for her outstanding efforts related to the study of multi-inflammatory syndrome in children (MIS-C).
- Danielle Chenard, MPH, successfully completed the Leadership Greater Hartford Quest Program.

TABLE 1:

Principal Investigator and Research Support Staff

Principal Investigator	Research area	Support staff
Juan Salazar	COVID, syphilis	Celina Porcaro Noah Schulman
Jeff Hyams	IBD	Kristen Volz
Steven Rogers	Suicide Prevention	Danielle Chenard Kristen Volz
Kevin Borrup/Amy Hunter	Injury Surveillance	Mary-Kate Nowobilski
Sharon Smith	Undergraduate Research Assistant Program	Danielle Chenard Mary-Kate Nowobilski
Chris Carroll	Pediatric intensive care	Makayla Murphy
Sylvia Õunpuu	Gait lab	Drew Cohen
Thyde Dumont-Mathieu	Autism; racial/ethnic disparities	Rosalie Lyons
Bill Zempsky	Pain management	Chris Theriault Vaishali Belamkar
Emily Wakefield	Chronic pain in sickle cell disease	Vaishali Belamkar Chris Theriault
Chris Finck	Tissue reengineering	Shefali Thaker
Markus Bookland	Neurosurgery	Megan Anderson
Brooke Davey/Olga Salazar	Congenital heart defects	Aaron Adams Noah Schulman
Brendan Campbell	Gen Surgery, Trauma, Injury prevention	Shefali Thaker Aaron Adams

TABLE 2:

URAP support expanded to PI's across Institution

Principal Investigator	Research area
Christine Baldi, RN	Nursing
Corey Baker, MD	Gastroenterology
Kevin Borrup, DrPH, JD, MPA	Injury Prevention
Whitney Fairchild, APRN	Cardiology
Damion Grasso, PhD	Psychiatry (UCHC)

Principal Investigator	Research area
Kathy Herbst, MS	COVID: MIS-C
Katie Hinderer, PhD	Nursing
Naveed Hussain, MD	Neonatology
Elliot Melendez, MD	Pediatric Critical Care
Juan Salazar, MD	Infectious Diseases
Melissa Santos, PhD	Obesity

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TEAM MEMBERS

Garry Lapidus, PA-C, MPH, *Director*

Megan Anderson, *Research Assistant 1*

Vaishali Belamkar, *Research Assistant 1*

Michael Brimacombe, PhD, *Senior Biostatistician*

Danielle Chenard, MPH, *Research Program Manager*

Andrew Cohen, *Research Engineer*

James Harnsberger, PhD, *Scientific Grant Writer*

Katherine Herbst, MS, *Senior Research Manager*

Rosalie Lyons, BS, *Research Associate 2*

Maua Mosha, MS, *Biostatistician*

Makayla Murphy, *Research Assistant 2*

Mary-Kate Nowobilski, *Research Associate*

Celina Porcaro, *Research Assistant 1*

Rosa Rodrigues, *Administrative Project Coordinator*

Noah Schulman, *Research Assistant 1*

Shefali Thaker, CCRP, MPH, *Research Associate Team Lead*

Christopher Theriault, BA, *Research Assistant 2*

Mabeline Velez, MS, *Research Associate*

Kristen Volz, MS, *Research Assistant 1*


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OFFICE FOR SPONSORED PROGRAMS

The Office for Sponsored Programs (OSP) supports Connecticut Children's investigators and staff by applying for, procuring, and managing extramural funding, and ensures compliance with the policies and regulations of Connecticut Children's, its sponsors, and federal and state oversight agencies. In addition, OSP Contracts office negotiates and processes all agreements related to research and sponsored programs, and issues all contracts for research-related collaborations, material transfers, and data sharing.

OSP sustained continued growth in 2021 and managed over $20 million in related funding, submitted 78 proposals, and processed several hundred contracts. In a structural shift, OSP made the formal transition from *departmental* and *central* to *pre-award*, work that is dedicated to the administrative oversight and project management of grant proposal development, and *post-award*, work that focuses on the management of a grant once it is awarded. This transition has allowed for more concentrated support to Connecticut Children's investigators. OSP partnered with other stakeholders, such as Information Systems, Finance, and Supply Chain to optimize business operations and the use of Lawson Financial System. OSP has assumed some financial responsibility from Connecticut Children's Accounting department, allowing our staff to maximize efficiency of daily operations.

Throughout 2021, OSP celebrated well-deserved promotions, welcomed new team members and bid farewell to a departing staff member. During this past year, OSP persevered through and continued to provide high quality service to all of our clients and each other.

OSP TEAM

Kimberly Davey, MBA, *Director, Office for Sponsored Programs and Research Finance*

Neal Breen, MBA, *Senior Manager Post Award and Research Finance*

Zach Andrews, BS, *Post-Award Specialist*

Alixandra Borgert, MRA, CRA, *Lead Pre-Award Specialist*

Gena Dixon, MS, CRA, *Senior Pre-Award Specialist*

James Gallagher, Esq., *Assistant General Council*

Kathy Lawrence, *Administrative Project Coordinator*

Karen Long, BS, *Clinical Trials Finance*

Steffi Ramos, MBA, *Lead Post-Award Specialist*

Aubree Siebert, MS, *Clinical Trials Finance*

Lana Soh, MS, *Post-Award Specialist*

Marlene Tzickas, *Senior Post-Award Specialist*

OFFICE OF FACULTY DEVELOPMENT (OFD)

The Office of Faculty Development's purpose is to champion the personal and professional growth of faculty at each stage of their career while promoting a culture of well-being and resilience.

The Office of Faculty Development (OFD) celebrated definition and growth in 2021. We began the year with clarification of the name and purpose of the office, created a "Roadmap 2021" of strategic initiatives, and began to define metrics of success. A steering committee comprised of physicians from the departments of Pediatrics and Surgery, advanced practice providers (APPs), psychologists, and staffers from Human Resources and Pediatric administration met regularly to shape and define the office name, purpose, and metrics and to provide input on ongoing educational initiatives. While the OFD is focused on academic faculty, we define our target audience as all providers (physicians, APPs, and psychologists) regardless of academic standing. OFD addresses key issues facing faculty – such as well-being, burnout, personal effectiveness, gender disparities, diversity and inclusion – through innovative educational offerings.

A primary focus of OFD in 2021 included conceptualization, design, and implementation of the innovative Transition into Practice (TiP) program, a year-long, peer-based course supporting faculty physicians who are joining the institution in their first job out of training. Rebecca Moles, MD, Hayley Wolfgruber, MD, and Lisa Marella designed the program to foster and maintain faculty engagement and retention, assure a solid foundation and career trajectory for new faculty, and promote interdisciplinary collaboration and communication. The program launched in October 2021 with an inaugural class of 20 participants from across the institution. TiP lays the foundation for additional faculty support and mentorship programs. Outcomes will be studied and presented for publication at the conclusion of this first pilot year.

OFD OFFERINGS TO FACULTY IN 2021 INCLUDED:

- Dr. Moles and Ms. Marella partnered with the new Pediatric Women Relate (PoWeR) group to provide a three-part workshop series on emotional intelligence.
- Dr. Moles and Ms. Marella continued to provide educational sessions to faculty on feedback, influencing without formal authority, insightful decision-making, speed coaching, and listening generously. Dr. Moles provided a similar session on feedback to a national audience at a child abuse pediatrics national meeting in April 2021.
- Dr. Moles and Ms. Marella continued our successful Virtual Faculty Lounge, a monthly open Zoom meeting where faculty gather for connection and support. This platform has fostered connections across the institution that positively impact patient care and provider well-being.
- Melissa Santos, PhD, led a faculty book club in the spring of 2021 focused on diversity, equity, and inclusion. The book club created a safe and intentional space for co-workers to discuss these issues in confidence while promoting awareness and a further understanding of common experiences. For 2021, the members of the book club read "Why Are All the Black Kids Sitting Together in the Cafeteria?" by Beverly Daniel Tatum.
- Dr. Moles and Ms. Marella provided individual coaching to faculty to support personal and professional growth.
- Ms. Marella provided leader onboarding, team effectiveness, and engagement consultation to division leaders and faculty.
- Ms. Naja spearheaded the creation and launch of the Office of Faculty Development internal webpage. The OFD Intranet page brings together all relevant Connecticut Children's programs and initiatives to ensure effective faculty development. The page is ever-evolving as it aims to stay current and resourceful for our faculty.
- Ms. Naja partnered with Briggs Wealth Management to provide our faculty with tailored informational sessions on key topics related to finance management. In addition to these virtual sessions, Connecticut Children's chief financial officer Bridgett Feagin provided an array of valuable sessions to faculty covering an in-depth overview of hospital finances.

The OFD looks forward to continued innovation and definition in 2022 and beyond as we strive to support faculty across the institution.

STAFF

Rebecca Moles, MD
Katherine Kavanagh, MD
Hayley Wolfgruber, MD
Jeanie Naja, *Executive Assistant*
Lisa Marella, *Director of Organizational Effectiveness and Learning*

Transition into Practice (TiP) Program
Lead: **Rebecca Moles, MD**
Core faculty: **Lisa Marella & Hayley Wolfgruber, MD**

OFFICE FOR COMMUNITY CHILD HEALTH


THE HARTFORD

OFFICE FOR COMMUNITY CHILD HEALTH (OCCH)

In 2021, Connecticut Children's received its largest grant ever when the U.S. Department of Education selected the organization as one of seven grantees across the country to receive funding as part of the Promise Neighborhoods Program. Under the five-year grant, Connecticut Children's Office for Community Child Health (the Office) will receive $30 million to lead a multi-partner, cross-sector effort designed to improve the lives of children in North Hartford.

Under the grant, the Office will oversee an effort to design, implement, and evaluate the North Hartford Ascend Pipeline (Ascend) in collaboration with the City of Hartford, Hartford Public Schools, and additional partners. The pipeline will serve as a comprehensive cradle-to-career effort designed to help children in North Hartford reach their full potential by improving academic outcomes, developmental trajectories, long-term well-being, and quality of life.

Ascend is now the newest program in the Office's portfolio, which also includes 17 other community-oriented initiatives that work to promote the optimal health, development and well-being of children. The Office is recognized for its pioneering efforts to utilize a cross-sector approach to build stronger child-serving systems, strengthen families and advance equity. Under the leadership of Paul H. Dworkin, MD, the Office helps shape federal, state and local policy regarding child services; builds partnerships between internal and external programs across all sectors that influence child health and development; and cultivates innovations to support children and families that are at risk for adverse health and life outcomes.

In 2021, the Office supported its programs in meeting the basic and mental health needs of families in the second year of the COVID-19 pandemic. In addition, the Office continued serving as a leader at Connecticut Children's in making the workplace more welcoming and inclusive as part of our organization's overall diversity, equity and inclusion journey.

Among the highlights of that effort, members of the Office's Pathways to Action team played a leading role in drafting an organization statement on racism, discrimination and bias.

In addition to the above-mentioned work, the Office is excited to share the following updates from its programs during 2021:

OCCH PROGRAMS

Childhood Prosperity Lab (the Lab) collaborates with changemakers to cultivate and advance social innovations that improve outcomes related to social determinants of health and help all children reach their full potential. During 2021, the Lab:

- Facilitated five consultation sessions with external changemakers.
- Supported the Help Me Grow National Center's Pediatrics Supporting Parents project.
- Began facilitating a work group to develop a goal-concordant care framework for early childhood in partnership with the Help Me Grow National Center.
- Led the development of a $30 million Department of Education Promise Neighborhoods Programs grant application in partnership with the City of Hartford and other stakeholders from across the community to design, implement, and evaluate the North Hartford Ascend Pipeline. The grant was funded and begins January 1, 2022.

The **Children's Center on Family Violence** represents a partnership between the Suspected Child Abuse and Neglect (SCAN) program at Connecticut Children's, the Injury Prevention Center (IPC) at Connecticut Children's, and the Connecticut Coalition Against Domestic Violence (CCADV). These partners have continued their work together throughout the pandemic, and in 2021 their work included:

- Collaboration between CCADV advocates and Connecticut Children's child life and protective factors experts to help CCADV advocates support children entering shelter or motels during the pandemic
- Piloting universal education on domestic violence for caregivers in the SCAN outpatient clinic
- Participation in a joint presentation on Child Abuse and Domestic Violence Practice in the Global Pandemic presented by Connecticut Children's and CCADV staff to the American Public Health Association Annual Meeting

The **Co-Management Program's** digital platform serves as a guide for primary care providers to manage common lower-severity conditions independently, thereby freeing up specialists' schedules for patients who need timely access to specialty level care. The platform, called CLASP (**C**onnecticut **C**hildren's **L**eaders in **A**dvanced **S**olutions in **P**ediatrics), incorporates an easy-to-use, algorithmic approach to outline the circumstances under which a patient is safely managed in primary care or when they should be referred to specialists. Links to the community/online resources, clinical decision tools, and family centered materials are provided as needed. This past year, CLASP broadened its reach by 16 percent with 508 verified provider users statewide. We co-authored the promising results of our prior collaboration with a large Connecticut Federally Qualified Health Center in which we combined CLASP with a complementary strategy, e-Consults. We leveraged this experience to fund the build of an e-consult platform in Connecticut Children's EpiCare link and to plan an e-Consult pilot that expands access to behavioral health services.

Connecticut Children's Center for Care Coordination is developing a targeted care coordination program to support the Connecticut Children's/Signify Health partnership, which is working to implement value-based payment programs. This program targets State of Connecticut employees and dependents and provides chronic disease care management for diabetes, asthma, depression and anxiety, and trauma/stress disorders. We hope to improve the quality of care and reduce overall health care expenses by minimizing avoidable adverse events, services and emergency department visits, while also increasing the patient and family experience. In addition, the Center is also providing targeted care coordination to families whose children screen positive for rare conditions during the newborn screening process. As the Newborn Diagnosis and Treatment Network identifies gaps in care for children ages 0-5 as well as infants who may be high risk, they connect those families to the Center for comprehensive and culturally competent care coordination services. The Center also has an embedded care coordinator on the hospital's medical and surgical floors, as well as in the emergency department in response to the escalating mental health crisis.

Connecticut Children's Center for Global Health (CGH) strives to improve the health of children living in resource-limited settings through the development and maintenance of high-quality, sustainable, collaborative capacity-building health care partnerships. The Center partners with medical facilities and organizations around the world to increase the capacity of local pediatric physicians, nurses and other team members to ensure they offer high-quality pediatric health care. These efforts include in-person visits where students, staff and faculty affiliated with the Center work with local pediatric leadership to develop mission goals based on the needs of partners and prepare trainings to help them achieve their self-determined goals. The Center's work also includes remote sessions, which have been critical to maintaining partnerships and outreach during COVID-19. The Center's partners include St. Damien Pediatric Hospital in Taberre, Haiti; Hospital Bernard Mevs in Port-au-Prince, Haiti; Justinien University Hospital in Cap-Haitian, Haiti; NICE Institute in Hyderabad, India; University Teaching Hospital of Rwanda – CHUK in Kigali, Rwanda; Korle Bu Teaching Hospital in Accra, Ghana, and Mengo Hospital in Kampala, Uganda. (See the complete CGH report on page 168.)

Even with the issues of supply chain delays and labor shortages stymieing the construction trade, **Connecticut Children's Healthy Homes Program** (Healthy Homes) continued delivering innovative and effective ways to make homes safe and healthy for

families across Connecticut. Healthy Homes set a new milestone in 2021 by making more than 160 housing units lead safe and healthy. During 2021, Healthy Homes continued to expand across Connecticut by serving property owners in 51 towns. Healthy Homes is proud to be a key partner in the North Hartford Ascend Pipeline, which is funded by a $30 million grant from the U.S. Department of Education. As part of that, we will bring the resources of our Building for Health program to scale to help residents in North Hartford's Promise Zone live in safe, healthy and energy-efficient housing.

In 2021, the **Easy Breathing©** asthma management program underwent an expansive revision in response to the release of the 2020 Focused Updates to the Asthma Management Guidelines. This report was developed by an expert panel working group under the leadership of Michelle Cloutier, MD, panel chair, and founder of the Asthma Center at Connecticut Children's. Because Easy Breathing adheres to these guidelines, we have been diligently working with the pediatric primary care community to adopt and implement the 2020 updates in a format that is usable and effective. The adaptation of Easy Breathing began with the announcement of our new co-director of the Asthma Center, Melanie Collins, MD, from the Division of Pediatric Pulmonology. Then, over the course of several working groups, the program was refined to include the new, evidence-based asthma management strategies outlined in the focused update to the guidelines. We were also able to engage a new Easy Breathing physician champion, Caleb Wasser, DO, a pediatrician practicing at Community Health Center. We are indebted to all our colleagues in primary care for providing their time and valuable feedback on how to integrate the focused updates into Easy Breathing.
In October, Dr. Collins and Jessica Hollenbach, PhD, co-director of the Asthma Center, conducted an Evening Lecture Series on the new asthma guidelines, sponsored and organized by Connecticut Children's Office of Continuing Medical Education. More than 40 pediatricians from around Connecticut participated, with several requesting follow-up trainings for Easy Breathing.
The **Educating Practices** program was placed on a pause starting in March 2021 after its transition from the Child Health and Development Institute to Connecticut Children's. During the year, we have been negotiating with the Department of Public Health for financial support of the program and potential support for the development and spread of specific modules focused on breastfeeding and school-based health services. The Educating Practices program is expected to restart in early to mid 2022.

Prior to March 2021, the Educating Practices program presented four modules to practices around the state. They were:

- Breast Feeding
- Substance Use Prevention Identification & Brief Intervention (presented twice)
- Suicide Prevention

The **Hartford Youth HIV Identification and Linkage Consortium** (HYHIL) enhances the well-being and quality of life of patients/clients and their families and prevents the spread of HIV through a multidisciplinary approach to health service delivery. HYHIL is part of Connecticut Children's Pediatric, Youth and Family HIV Program, which consists of child/adolescent medical specialists, nutritionists, recovery support specialists, and other professionals who offer medical and additional support services to families.

HYHIL has been able to provide uninterrupted HIV prevention services for women, infants, children and youth throughout COVID-19. The program partnered with the San Juan Center to successfully increase COVID-19 vaccinations and HIV testing in Hartford communities. Forty-five residents received housing assistance in the program's new housing initiative and 96 percent of those served through the housing program now have affordable permanent housing. HYHIL's HIV and Hepatitis C testing and pre-exposure prophylaxis (PrEP) navigation services, funded by the Connecticut Department of Public Health, help adolescent women of color and Black and Latino men who have sex with men.
In addition to 16 new communities in affiliate states beginning Help Me Grow (HMG) implementation, the **Help Me Grow National Center** led its National Affiliate Network in a number of strategic initiatives. Such initiatives include:

- National, state, and local level response to COVID-19, including the provision of more than 2.6 million basic needs items for babies through support from The JPB Foundation
- A national work group to consider innovative modernizations to the HMG Centralized Access Point
- Professional development for HMG staff, offered at no cost through partnership with Start Early
- A community of practice to promote collaboration between HMG and providers of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC)
- The development of tools that allow HMG affiliates to calculate and communicate the return on investment associated with implementing the HMG Model
- The development and piloting of a novel, integrated pediatric technology platform that supports pediatrician-family partnerships and promotes social-emotional development of young children
- Engagement in a strategic planning process to articulate and accelerate growth and impact priorities of the National Center over the next five years

The Injury Prevention Center (IPC) works to reduce the occurrence of preventable and predictable injuries in children and adults through research, program implementation, education and training, and policy advocacy. IPC faculty are active researchers in the Department of Pediatrics with 11 publications in peer review journals and multiple professional presentations of their work at conferences in 2021. Our Safe Kids Connecticut program with statewide outreach continued to be active throughout the COVID period, providing

training and implementing school-based programming and direct services. The IPC's signature fellowship program for matriculating college students, the Hayley Petit Injury & Violence Prevention Fellowship program, hosted 15 women over the past year, providing each with education and training in the science of injury prevention. The IPC has a long history of advocacy. The program lent its voice to the developing 2025 State Health Improvement Plan and participated in a coalition of hospital-based violence intervention programs that successfully advocated for Medicaid reimbursement for violence intervention services.

The **Newborn Diagnosis and Treatment Network** expanded family access to genetic counseling services by launching telehealth. In collaboration with PATH CT, the Network started one of the nation's first newborn screening family advisory groups, which resulted in improved workflows and educational initiatives. The Network progressed toward a seamless integration with Yale New Haven Hospital including the streamlining of clinical workflows and enhancement of data-sharing for newborn screening patients receiving long-term follow-up (LTFU) care at Yale, enabling the Network to track all diagnosed infants statewide in the LTFU Newborn Screening Registry.

The latest horizon is to implement and evaluate a comprehensive family-centered LTFU newborn screening model. This project leverages evolving electronic data-sharing platforms for input and merging of indicators of preventive primary care with the already tracked specialty condition-specific quality and outcome indicators. The goal is to improve LTFU outcomes by addressing family needs, and by identifying and addressing care gaps across the care continuum.

As part of our **Person-Centered Medical Home** (PCMH) program, the National Committee for Quality Assurance recertified our Connecticut Children's Primary Care East (East Hartford) and West (Farmington) locations as Person-Centered Medical Homes in April 2021. In keeping with the PCMH model, we conduct universal screening to identify and evaluate behavioral and developmental concerns. In response to the mental health crisis, amplified by the pandemic, we follow a model of integrated behavioral-medical care, with psychologists and care coordination on site. The pandemic has also negatively impacted children's school readiness. We are active participants in the early literacy promotion program, Reach Out and Read (ROR), and were accepted by the ROR National Center to pilot an early numeracy promotion program, "Math Counts." Primary Care East and West serve as laboratories for many Office programs and participate in Connecticut Children's Care Network.

Our **Practice Quality Improvement** program helps primary care physicians use a data-driven, quality improvement approach to enhance services provided to children. The program has developed about 30 projects that are eligible for Maintenance of Certification and Continuing Medical Education credits for participating providers, which include identifying children with autism and other developmental or behavioral concerns early and connecting them to services; implementing best practices in managing asthma; improving lead screening; and managing obesity co-morbidities in a pediatric primary care setting.

The **Resident Education in Advocacy and Community Health** (REACH) program returned to usual programming in April 2021 and added two new partners – Knox Community Gardens and the American Place. Resident- and medical student-led efforts included written testimony, op-ed pieces, and several independent community projects. Kayla Gonzalez, MD, was a national finalist in the American Academy of Pediatrics (AAP) Advocacy Essay Contest. Faith Crittenden, MD, submitted a resolution to the AAP Leadership Forum that was sponsored by District 1, several AAP state chapters and two subcommittees. Lenora Codrington, DO, and Margret Blondal, MD, were awarded the Capital Area Health Consortium's Community Service award, making it the fourth consecutive win for REACH residents.

The Kohl's **Start Childhood Off Right** (SCOR) program experienced limitations in implementation due to COVID-19 restrictions. However, we were able to distribute 325 toolkits and feeding guidelines to pediatric practices for distribution to families with young children at well child visits. Our community wellness events included: virtual prenatal yoga in collaboration with Stronger Families, Stronger Futures and WHY yoga; "grab 'n go" reading and activity kits for families in collaboration with the Hartford Public Library; and a SCOR information table at the Connecticut Children's-Hartford Hospital World Breastfeeding Week event. Nancy Trout, MD, MPH, gave talks on childhood and adolescent obesity prevention and treatment for the American Academy of Pediatrics Connecticut Chapter school health conference and for the Tristate Obesity Society. In addition, the program laid the groundwork for opening a food pantry in the Connecticut Children's Emergency Department to help families with acute food insecurity. The program finished the fourth and final year of its Kohl's grant at the end of September.

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Administration

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Co-Management

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Easy Breathing

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Simoneau T, **Hollenbach JP**, Langton CR, Kuo CL, **Cloutier MM.** Smoking cessation and counseling: a mixed methods study of pediatricians and parents. PLoS One. 2021 Feb 9;16(2):e0246231. doi: 10.1371/journal.pone.0246231. eCollection 2021.

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Help Me Grow National Center

Hand in Hand Framework

The Model Convening Project is a multi-year initiative, with leadership and facilitation from ZERO TO THREE and funding from the Pritzker Children's Initiative. Four national early childhood models – Family Connects International, HealthySteps, Help Me Grow and Nurse-Family Partnership – explored ways to have a greater impact on young children and their families in communities where their programs overlap. In 2021, the Model Convening Project published its Hand in Hand framework, which aims to ensure families receive the services they need in a coordinated manner by strengthening highly collaborative early childhood systems.

Help Me Grow: Building Impact 2020 Annual Report

The Help Me Grow: Building Impact 2020 report synthesizes information collected from more than 100 HMG systems across the country. It captures the:

- Breadth and scope of HMG system implementation and progress since 2019
- Capacity to reach children, families, community partners, and child health-care providers
- Novel approaches and system enhancements currently explored by HMG affiliates

Help Me Grow Centralized Access Point Work Group Recommendations

Nine HMG affiliates participated in a Centralized Access Point Work Group along with the Alliance of Information and Referral Systems (AIRS) and Childhood Prosperity

Lab in 2021. The goal of the work group was to identify strategies and make recommendations to enhance the durability and responsiveness of Centralized Access Points across the HMG National Affiliate Network. The work group produced a final report detailing 11 recommendations to enhance, strengthen, and modernize HMG Centralized Access Points.

Injury Prevention Center

Doucette ML, Tucker A, Auguste ME, Gates JD, Shapiro D, Ehsani JP, **Borrup KT.** Evaluation of motor vehicle crash rates during and after the COVID-19-associated stay-at-home order in Connecticut. Accid Anal Prev. 2021;162:106399.

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GRANTS, GIFTS & AWARDS

Co-Management

Karen Rubin PI: Children's Health Fund, Child Health Development Institute CT. Expanding Behavioral Health Services in Primary Care Through Co-Management and Implementation of a Learning Community. Award

notification: 9/29/20, $75,000.

Connecticut Children's Center for Care Coordination

The Center for Care Coordination (the Center) was awarded its third consecutive, five-year Department of Public Health grant for Children and Youth with Special Health Care Needs. These state and federal dollars, $418,001 awarded yearly to the Center, allowed for the expansion of community-based supports including a pivot to remote support focused on COVID-related needs for community members as well as a steady increase in behavioral health care coordination. The DPH grant award, along with smaller grant and endowment dollars, support efforts to engage in pediatric practices through Connecticut Children's Care Network. Total grant award (5-year): $2,090,005.

Easy Breathing

Jessica Hollenbach, PI: Environmental Protection Agency 2020 Healthy Communities Grant Program. Easy Breathing for Schools. This study proposes the expansion of an efficacious school-based asthma program that focuses on healthy indoor environments among school-age children with asthma. 10/1/2020-9/30/2022.

Jessica Hollenbach, PI: Cigna Foundation World of Difference Grant. Creating an Asthma Network: Improving Asthma Management for Children in the North Hartford Promise Zone. This study examines the feasibility and acceptability of electronically transmitting a child's asthma treatment plan from pediatricians to school nurses. The results will be used to determine whether electronic communication of the asthma treatment plan can be integrated into a federally qualified health center's and school nurse's workflow, and whether delivery can improve asthma case identification and management. 8/27/2018-10/31/2021.

Jessica Hollenbach, PI: Robert E. Leet and Clara Guthrie Patterson Trust Mentored Clinical Research Award. Interrogating the Placental Microbiome Among Pregnant Women with Asthma. This study compares the placental microbiome among urban-dwelling Hispanic/Latina women with asthma to those without asthma to better characterize and understand the role that in utero microbiome exposure may have in the origins of asthma. 7/1/2017-12/31/2020.

Hartford Youth HIV Identification and Linkage Consortium

In commemoration of World AIDS Day 2021, sponsored by AIDS Servicing Agency's across the state, HYHIL program director Danielle Warren-Dias received the "Trailblazer Award" in honor of her service to children and families.

Help Me Grow National Center

UMMC/HRSA (DHHS): Help Me Grow National Technical Assistance – Mississippi Thrive! Child Health and Development Project. Award date: 3/01/2020.

Pritzker Children's Initiative: COVID-19 Response Innovation Dissemination. Award date: 4/01/2020.

The JPB Foundation: Essential Basic Needs for Infant Care in Response to the COVID-19 Crisis. Award date: 5/25/2020.

Pritzker Children's Initiative: Strategic Planning for Accelerated Scaling and Impact of Help Me Grow. Award date: 7/01/2020.

Silicon Valley Community Foundation: Pediatrics Supporting Parents II. Award date: 11/1/2020.

Pritzker Children's Initiative: Help Me Grow National Center Strategic Growth Plan. Award date: 6/1/2021.

The JPB Foundation: Embedding Goal-Concordant Care in Help Me Grow Affiliate Systems. Award date: 11/1/2021.

CDC/AUCD: Coordinated and Integrated Data System for the Early Identification (CIDSEI) of Young Children with Developmental Delays or Disabilities. Award date: 9/1/2021.

Injury Prevention Center:

Connecticut Elks Association, $100,000
Connecticut Department of Transportation, Watch for Me CT, $350,000
Connecticut Department of Transportation, Child Passenger Safety, $75,000
Connecticut Department of Children and Families, $240,000
Child Health and Development Institute, $50,000
Connecticut Department of Public Health, $50,000

Newborn Diagnosis and Treatment Network

Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) Award. Project title: CT's Newborn Screening System: An Integrated Approach to Improving Long-Term Health Outcomes. Grant period: 8/1/21-7/31/22. Award total $998,785; current year $474,408.

Connecticut Department of Public Health Award for the Provision of a Diagnostic and Treatment Network for Connecticut's Newborn Screening Program Utilizing a Population Health Approach. Grant period: 7/1/18-6/30/22. Award total: $2,396,708, current year $599,000.

Federal Grant – Association of Maternal and Child Health Programs (AMCHP) Cares Act: Leveraging Telehealth and the Family Voice to Deliver on the Promise of Newborn Screening. Grant period: 9/29/20-4/30/21, award totaling $100,000.

September 2021: Selected as winner of the inaugural GRACE Award, which is a national award for family engagement in newborn screening. GRACE stands for "generating real action by cultivating engagement."

September 2021: Selected as "cutting-edge practice" and will be featured on Maternal and Child Health (MCH) Innovations Database for our work on developing a telehealth platform for newborn screening.

Resident Education in Advocacy and Community Health

American Academy Rome Visiting Professorship (Patricia Garcia, MD, and Melanie Rudnick, MD)

CORE FACULTY

Childhood Prosperity Lab
Jacquelyn Rose, MPH, *Program Manager*

Co-Management
Karen Rubin, MD, *Program/CLASP Founder & Director, Professor Emeritus Pediatrics, Pediatric Endocrinology*

Ilana Waynik, MD, *Associate Professor Pediatrics, Pediatric Hospital Medicine*
Grace Hong, AP, *Pediatric Infectious Diseases*
Michele Krivickas, *Program Coordinator*

Children's Center for Care Coordination
Allison Matthews-Wilson, LCSW, *Director, Center for Care Coordination*

Katherine Ramirez, MS, Manager, *Center for Care Coordination*

Ann Riley, MSN, RN, *Lead, Care Coordination Team*
Nancy Caperino, LCSW
Courtney Downs, BS
Christina Stoner, BS
Damaris Rodriguez
Jacqueline Rodriguez
Rachelle Tirrell, BSN, RN
LaKisha Thomas, BS
Nidia Rivas
Kerri Zimmerman, LMSW

Connecticut Children's Center for Global Health
Adam Silverman, MD, *Director*

Hareem Park, MD, *Associate Director*
Stephen Mahier, BSN, RN, *Associate Director*
Naveed Hussain, MD, *Associate Director*
Lisa LeBon, *Associate Director*
Christopher Hughes, MD, MPH, *Associate Director*
Lisa Roberts, *Administrative Assistant*

Connecticut Children's Healthy Homes Program
Chris Corcoran, *Manager*
Esther Figueroa, *Program Manager*
Olga Fruster
Maria Guzman
Thomas Rotchford
Taysha Thompson, BA

Easy Breathing©
Jessica P. Hollenbach, PhD, AE-C, *Assistant Professor, Co-director, Asthma Center at Connecticut Children's*

Melanie Sue Collins, MD, *Medical Director, Division of Pediatric Pulmonary and Sleep Medicine; Director, Cardiopulmonary Function Laboratory; Program Director, Pediatric Pulmonology Fellowship; Co-director, Asthma Center at Connecticut Children's; Associate Director, Central Connecticut Cystic Fibrosis Center; and Associate Clinical Professor, UConn School of Medicine*

Kasia Saar, DO, *Pulmonary Fellow*
Sigrid Almeida, BS, AE-C, *Research Assistant*
Brian Lesmes, BA, *Administrative Assistant*
Iris Becene, BS, *Research Intern*
Kailee Martin, *Research Intern*

Educating Practices
David Krol, MD, MPH, FAAP, *Adjunct Assistant Professor, UConn School of Medicine*

Cabrini Merclean, MSR
Sarina Bosco

Hartford Youth Identification and Linkage Consortium
Danielle Warren-Dias, MS, HS-BCP, *Program Co-leader*

Nilda Fernandez, LMSW, *Program Co-leader*

Wanda Henriquez
Gail Karas, RN
Ryan Manthey, RN
Myrna Millet-Saez, MS, HS-BCP
Consuelo Munoz, MS
Angel Ruiz, BS

Help Me Grow® National Center
Paul H. Dworkin, MD, HMG *National Center Founding Director, Connecticut Children's Executive Vice President for Community Child Health, and Professor of Pediatrics at UConn School of Medicine*

Kimberly Martini-Carvell, MA, *HMG National Center Executive Director, Associate Director for Capacity Building, Organizational Learning & Professional Advancement for Connecticut Children's Office for Community Child Health*

Sara Sibley, MBA, *HMG National Center Associate Director of Business Development & Operations*
Sarah Zucker, BA, *HMG National Center Manager of Communications & Network Relations*
Cassandra Therriault, MPH, *HMG National Center Program Specialist*
Noshin Ahmed, MPH, *HMG National Center Program Coordinator*
Aedra Jones, MEd, *HMG National Center Program Coordinator*

Injury Prevention Center
Kevin Borrup, DrPH, JD, MPA, *Program Executive Director, Assistant Professor of Pediatrics*

Rebecca Beebe, PhD, *Assistant Professor*
Bruce Bernstein, PhD, *Research Scientist*
Brendan Campbell, MD, MPH, *Professor*
Meghan Clough, MA, *Research Associate*
Susan DiVietro, PhD, *Assistant Professor*
Mitchell L. Doucette, PhD, MS, *Research Scientist*
Jessica Escobar, *Program Coordinator*
Damion Grasso, PhD, *Associate Professor*
Amy Hunter, MPH, PhD, *Assistant Professor*
J. Leslie Knod, MD, *Assistant Professor*
Mayra Pino, *Research Assistant I*
Steven C. Rogers, MD, MS-CTR, *Associate Professor*
Amy Watkins, MPH, *Program Specialist*

Newborn Diagnosis and Treatment Network
Karen Rubin, MD, *Medical Director*

Debra Ellis, RN BSN, *Program Coordinator*

Katie Raboin, RN, MSN, *Senior Analyst*
Ginger Nichols, MSN, LCGC, *Genetic Counselor*
Meghan Criscuolo, RN, BSN, *RN Coordinator*

Person-Centered Medical Home

Catherine Wiley, MD, *Program Manager, Associate Professor of Pediatrics*

Yazmin Hernandez, *Program Manager*
Chinyere Okoronkwo, MD, *Assistant Professor*
Marie Sanford, MD, *Assistant Professor*
Larry Scherzer, MD, MPH, *Assistant Professor*
Latesha Dawson Thomas, MD, *Assistant Professor*
Nancy Trout, MD, MPH, *Assistant Professor*
Christine Chew, PhD
Elinor Coloccia, PsyD
Amy Signore, PhD
Amy Dempsey, *Care Coordinator*

Resident Education in Advocacy and Community Health

Patricia Garcia, MD, MPH, *Associate Professor of Pediatrics*

Jonah Mandell, DO, *Assistant Professor Pediatrics*

Start Childhood Off Right (SCOR)

Nancy Trout, MD, MPH, *Program Co-director, Assistant Professor of Pediatrics, UConn School of Medicine*

Stacey Chandna, MS, CIP, *Program Co-director*

Aedra Jones, MEd


A
LIFE CYCLE
A FROG

CENTER FOR GLOBAL HEALTH

Our mission is to improve the lives of children living in resource-limited settings by collaborating with our partners in the development of sustainable capacity-building activities. Through the volunteer efforts of trainees, staff and faculty, the Center for Global Health (CGH) creates a culture at Connecticut Children's that acknowledges that we are world citizens and our knowledge and skills change the lives of children around the world. We engage in influential activities that increase global health participation and appreciation. And our activities increase cultural humility, resilience and engagement within our community resulting in healthier children locally and internationally.

The CGH continues to be led by Adam Silverman, MD, as director, and its work is significantly enhanced by the associate directors Hareem Park, MD, who is responsible for general pediatric capacity-building and medical student/resident activities, Stephen Mahier, RN, who is responsible for nursing activities, Naveed Hussain, MD, who is responsible for newborn/neonatal capacity-building and research, Lisa LeBon, RRT, who is responsible for allied health professionals and Christopher Hughes, MD, who is responsible for surgical activities. All of the activities are supported by Lisa Roberts who provides administrative assistance to the team. In 2021, the CGH became a program of the Office for Community Child Health (OCCH) in order to share innovations and methods developed in resource-limited settings with local programs in Connecticut as well as benefit from the resources, structures and methodologies developed by OCCH programs so that these concepts can be utilized to improve the health of children around the world.

The year 2021 was unique in that we were unable to participate in global health activities abroad, but the CGH continued to increase global health appreciation locally while supporting partners internationally. This year the University of Connecticut-wide Global Health Symposia occurred as a collaboration with the student-led Global Health Spaces on Campus organization in Storrs, CT, the leaders in global health at the UConn Health Center in Farmington, and the Center for Global Health. Turnout at the symposia, which focused on "Decolonizing Global Health," was unprecedented and has resulted in continued efforts on all three campuses to develop procedures and policies that will ensure that international partnerships are created and maintained with an understanding of

past inequalities and strategies for future meaningful collaboration.

The CGH's annual Global Health Film Festival leveraged past success for another wonderful week of impactful film screenings. Once again films were screened remotely via Zoom during the week and the final film was screened in-person with space for appropriate for social distancing at Real Art Ways in Hartford. All of the screenings were hosted by local global health leaders, and we were able to hold our best-attended event since the inception of this activity.

Support for our partners continued this year despite the inability to travel. Remote lectures and interactive sessions were held at pediatric training programs in Haiti, Ghana, and Rwanda. New strategies and technologies were leveraged so that despite a year in which we couldn't work side-by-side with our partners, the number of educational sessions held overall significantly increased. Because we were able to maintain relationships and teaching efforts, the CGH's volunteers are in an optimized position to continue the sustained collaborative capacity-building efforts in person when international travel resumes. The foundation of these capacity-building activities includes collaborations, partnerships, and sustainable volunteering opportunities with several organizations including:

- Justinien University Hospital as volunteers with Konbit Santé in Cap-Haitian, Haiti
- St. Damien Pediatric Hospital as members of the St. Damien Collaborative in Port-au-Prince, Haiti
- Hôpital Sacré Coeur Pediatric Diabetes Program as volunteers with CRUDEM in Milot, Haiti
- NICE Foundation "Cool the Kids" program in Hyderabad, India
- The University Teaching Hospital of Kigali (CHUK) in Kigali, Rwanda
- The Faith Mulira Health Care Centre as volunteers with the Masooli Project, in Masooli, Uganda
- Mengo Hospital in collaboration with the Friends of Mengo Hospital, USA, and in Kampala, Uganda

OUR TEAM

Adam Silverman, MD, FAAP – *Director, Connecticut Children's Center for Global Health, Emergency Medicine and Critical Care physician*

Brendan Campbell, MD, MPH, FACS – *Director of Trauma, Pediatric Surgeon, Pediatric Surgical Quality and Safety Officer*

Nancy Dunbar, MD, MPH, FAAP – *Endocrinologist*

Christine Finck, MD, FACS – *Connecticut Children's Surgeon-in-Chief, Division Head, Pediatric Surgery*

Melissa Held, MD – *Infectious Diseases & Immunology Physician*

Victor Herson, MD – *Neonatologist*

Christopher Hughes MD, MPH – *Pediatric Plastic Surgery & Global Surgery and Associate Director of the CGH*

Naveed Hussain, MD – *Neonatologist and Associate Director of the CGH*

Lisa LeBon, RRT – *Respiratory Therapist and Associate Director of the CGH*

Cliff O'Callahan, MD, PhD, FAAP – *Pediatric faculty and Director of Nurseries, Middlesex Hospital; Associate Professor, Pediatrics, University of Connecticut School of Medicine; Assistant Professor, Family Medicine, Frank H. Netter MD School of Medicine, Quinnipiac University*

Andrea Orsey, MD – *Director, Cancer Supportive Care Program, Oncologist*

Hareem Park, MD – *Pediatric Hospital Physician and Associate Director of the CGH*

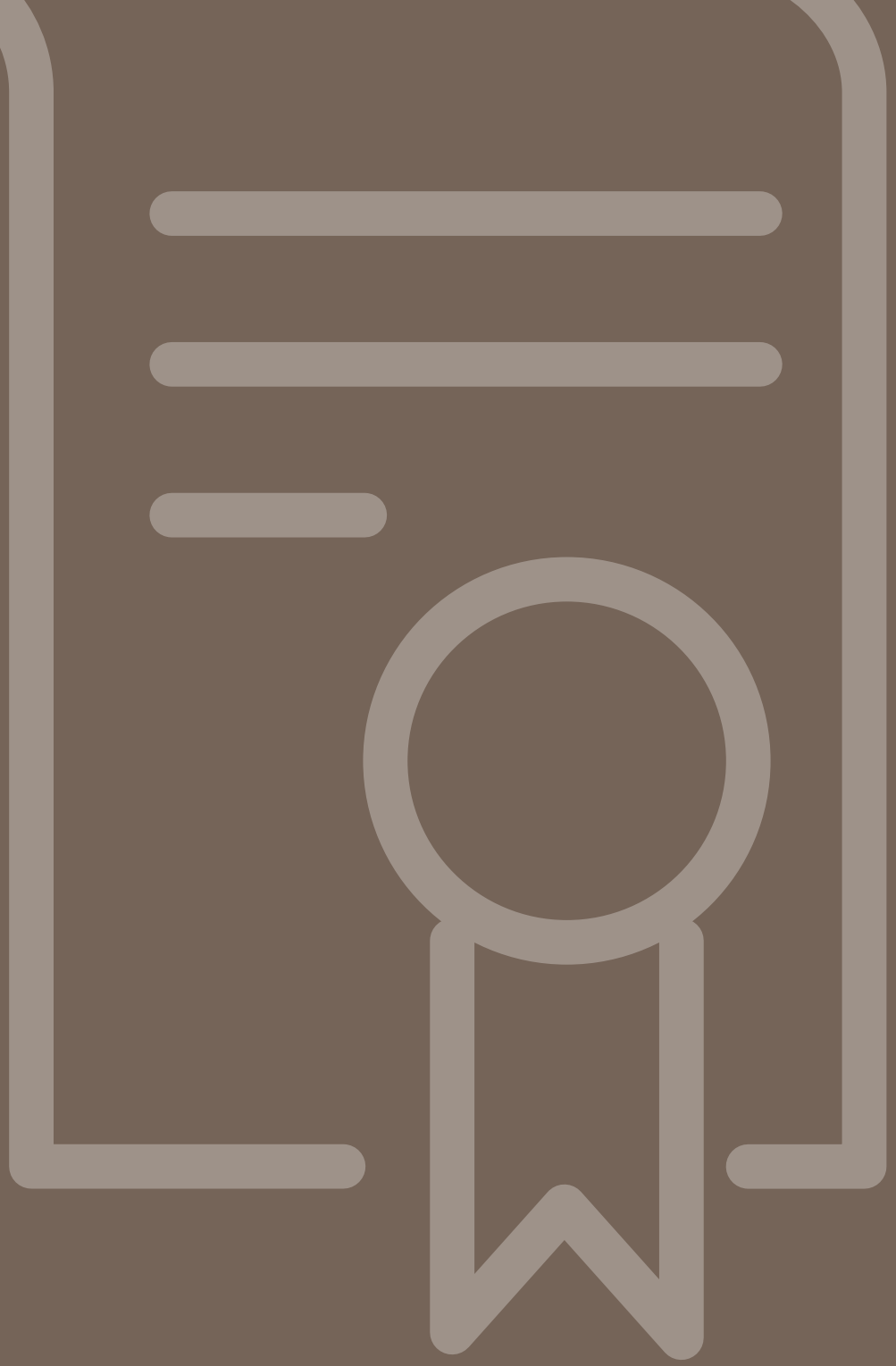
Juan C. Salazar, MD, MPH, FAAP – *Physician-in-Chief and Executive Vice President, Academic Affairs, Connecticut Children's*

Raina Sinha, MD, MPH – *Congenital Heart Surgeon*

Kristin Welch, MD – *Emergency Medicine Physician*

Stephen Mahier, BSN, RN – *Pediatric Intensive Care Unit (PICU) Nurse and Associate Director of the CGH*

GRANTS



PRINCIPAL INVESTIGATOR	AWARD / STUDY TITLE	FUNDING SOURCE PRIMARY / SECONDARY	AWARD	START DATE	END DATE	YEAR_ OF_	SUBCONTRACT TO UCHC/CCMC?	AMOUNT OF SUBCONTRACT	PRIMARY SITE
Acsadi, Gyula	4045-32	Sarepta Therapeutics, Inc.		4/8/21	4/8/22				Connecticut Children's
Acsadi, Gyula	An Intermediate Access Protocol for AVXS-101 Gene Therapy of Spinal Muscular Atrophy (SMA)	AveXis	15,565						
Acsadi, Gyula	An Open-label Extension Study for Patients with Duchenne Muscular Dystrophy Who Participated in Studies of SRP-5051	Sarepta Therapeutics, Inc.	15,396	7/15/20	9/30/50				
Acsadi, Gyula	An Open-label Extension Study for Patients With Spinal Muscular Atrophy Who Previously Participated in Investigational Studies of ISIS 396443	Biogen MA Inc	107,709						
Acsadi, Gyula	An Open-label Extension Study for Patients With Spinal Muscular Atrophy Who Previously Participated in Investigational Studies of ISIS 396444	Biogen MA Inc	107,709						
Acsadi, Gyula	Care Center Grant	Muscular Dystrophy Association	79,522	1/1/17	6/30/21				
Acsadi, Gyula	Care Center Grant	Muscular Dystrophy Association	80,500	1/1/17	6/30/21				
Acsadi, Gyula	Care Center Grant	Muscular Dystrophy Association	218,411	1/1/17	6/30/21				
Acsadi, Gyula	Cure SMA	CURE SMA	30,000	4/1/21	3/31/22				Connecticut Children's
Acsadi, Gyula	DCS 14/2357/51	National Pediatric Cancer Foundation		7/29/20	9/30/50				Connecticut Children's
Acsadi, Gyula	Open-label, Long-term Safety, Tolerability, and Efficacy Study of GIVINOSTAT in All DMD Patients Who Have Been PreviouslyTreated in One of the Givinostat Studies.	Italfarmaco	20,715						
Acsadi, Gyula	Open-label, Long-term Safety, Tolerability, and Efficacy Study of GIVINOSTAT in All DMD Patients Who Have Been Previously Treated in One of the Givinostat Studies.	Italfarmaco	80,877						
Acsadi, Gyula	Randomised, Double-blind, Placebo-controlled, Multicenter Study to Evaluate the Efficacy and Safety of Givinostat in Ambulant Patients with Duchenne Muscular Dystrophy	Italfarmaco	31,681						
Acsadi, Gyula	Randomised, Double-blind, Placebo-controlled, Multicenter Study to Evaluate the Efficacy and Safety of Givinostat in Ambulant Patients with Duchenne Muscular Dystrophy	Italfarmaco	31,681						

PRINCIPAL INVESTIGATOR	AWARD / STUDY TITLE	FUNDING SOURCE PRIMARY / SECONDARY	AWARD	START DATE	END DATE	YEAR_ OF_	SUBCONTRACT TO UCHC/CCMC?	AMOUNT OF SUBCONTRACT	PRIMARY SITE
Acsadi, Gyula	Sarepta 4658-403 EVOLVE	Sarepta Therapeutics, Inc.		11/11/20	9/30/50				Connecticut Children's
Acsadi, Gyula	SMA Care Center Network	Cure SMA	-	10/1/19	3/31/21				
Acsadi, Gyula	SMA Care Center Network	Cure SMA	60,000	10/1/19	3/31/21				
Bezler, Natalie	Protocol # 54767414ALL2005 An Open-label, Multicenter, Phase 2 Study Evaluating the Efficacy and Safety of Daratumumab in Pediatric and Young Adult Subjects Greater Than or Equal to 1 and Less Than or Equal to 30 Years of Age With Relapsed/ Refractory Precursor B-cell or T-cell Acute Lymphoblastic Leukemia or Lymphoblastic Lymphoma	Janssen Research & Development LLC	55,098						
Bookland, Markus	CT Brain Tumor Alliance	CCMC-MOU	39,782	10/1/16	9/30/21				
Bookland, Markus	CT Brain Tumor Alliance	CCMC-MOU	39,782	10/1/16	9/30/21				
Bookland, Markus	Mobile Screening of Pediatric Cranial Deformities Using Artificial Intelligence and Image Recognition Software	UConn Storrs	9,999	6/15/21	6/20/22				Connecticut Children's
Borrup, Kevin	Fresh Check Day	Jordan Porco Foundation	20,000	2/1/21	1/31/22				
Borrup, Kevin	Intimate Partner Violence	CT DCF	720,000	7/1/20	6/30/24				
Borrup, Kevin	Judge Sexual Violence Training	CDC / CT DPH	50,000	2/1/21	1/31/22				Connecticut Children's
Borrup, Kevin	Mapping Dimensional Aspects of Biobehavioral Threat Reactivity in Young, Violence-Exposed Children: Linkages to Fear and Distress	NIH / UCHC	917,550	7/1/18	6/30/23				
Borrup, Kevin	Mapping Multi-level Aspects	NIH / UCHC		7/1/21	6/30/22				Connecticut Children's
Borrup, Kevin	Mapping Multi-level Aspects	NIH / UCHC		7/1/20	6/30/21				Connecticut Children's
Borrup, Kevin	Rape Prevention and Education (RPE) Program: Using the Best Available Evidence for Sexual Violence Prevention	CT/DPH	250,000	6/28/19	1/31/24				
Borrup, Kevin	Safe States Driver Safety	Safe States Alliance / NHTSA	34,999	3/2/20	12/31/21				
Borrup, Kevin	Violent Death Reporting System	CDC / CT DPH	54,320	9/1/20	12/31/20				Connecticut Children's

PRINCIPAL INVESTIGATOR	AWARD / STUDY TITLE	FUNDING SOURCE PRIMARY / SECONDARY	AWARD	START DATE	END DATE	YEAR_ OF_	SUBCONTRACT TO UCHC/CCMC?	AMOUNT OF SUBCONTRACT	PRIMARY SITE
Borrup, Kevin	Violent Death Reporting System	CDC / CT DPH	642,430	2/15/16	12/31/20				
Boruchov, Donna	A Natural History Cohort Study of the Safety, Effectiveness, and Practice of Treatment for People with Severe Von Willebrand Disease (VWD)	American Thrombosis and Hemostasis Network (ATHN)	1,590						
Boruchov, Donna	A Phase III Open-label, Multicenter, Extension Study to Assess the Safety and Efficacy of Recombinant Coagulation Factor VIII (rVIII-SingleChain, CSL627) in Subjects with Severe Hemophilia A	Behring	1,495						
Boruchov, Donna	A Randomized, Open-label, Active-controlled, Safety and Descriptive Efficacy Study in Pediatric Subjects Requiring Anticoagulation for the Treatment of a Venous Thromboembolic Event	Pfizer	13,316						
Boruchov, Donna	Baxalta 261203 - Phase 3, Prospective, Multicenter, Open-label Study to Investigate Safety, Immunogenicity, and Hemostatic Efficacy of PEGylated Factor VIII (BAX 855) in Previously Untreated Patients (PUPs) <6 Years with Severe Hemophilia A (FVIII <1%)	Baxalta Inc	22,500						
Boruchov, Donna	Community Counts 2021-22	CDC ATHN / Boston Children's	22,891	9/30/20	9/29/21				Connecticut Children's
Boruchov, Donna	Data Quality Counts 12	American Thrombosis and Hemostasis Network (ATHN)		9/1/20	8/31/21				Connecticut Children's
Boruchov, Donna	Data Quality Counts 13	American Thrombosis and Hemostasis Network (ATHN)		9/1/21	8/31/22				Connecticut Children's
Boruchov, Donna	Sickle Cell Disease UCH 2020-2	CT DPH / UCHC	30,000	7/1/20	6/30/21				Connecticut Children's
Boruchov, Donna	Sickle Cell Disease UCH 2021	CDC / CT DPH	15,000	7/1/21	6/30/22				Connecticut Children's
Boruchov, Donna	Single-dose Study to Evaluate the Pharmacokinetics, Pharmacodynamics, Safety, and Tolerability of Apixaban in Pediatric Subjects at Risk for a Venous or Arterial Thrombotic Disorder	Bristol-Myers Squibb	5,080						
Carroll, Christopher	Penn State University's Translational Center for Child Maltreatment Studies TCCMS	Penn State	10,125	4/20/17	3/31/21				

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Carroll, Christopher	Penn State University's Translational Center for Child Maltreatment Studies TCCMS	DHHS/NIH/NICHHD / (Pennsylvania State University)	15,000	4/1/20	3/31/21				
Carroll, Christopher	Penn State University's Translational Center for Child Maltreatment Studies TCCMS	DHHS/NIH/Penn State	55,061	4/20/17	3/31/21				
Carroll, Christopher	Understanding COVID-19 Among Critically Ill Children in the Pediatric Acute Lung Injury and Sepsis Investigator (PALISI) Network	CDC/Boston Children's	21,625	4/6/20	10/8/21				
Cohen, Jennifer Madan	A Multimodal Biomarker-Based Predictive Model for Infantile Spasms	The Pediatric Epilepsy Res Foundation / Children's Hospital of Orange County		9/1/21	8/31/22				Connecticut Children's
Cowl, Alison	PROSpect – Prone and Oscillation Pediatric Clinical Trial	NIH/Univ of Penn	25,500	6/15/18	0731/2021				
Cowl, Alison	ASCEND	NIH NHLBI / University of Michigan		9/5/20	6/30/21				Connecticut Children's
Czynski, Adam	ECHO IDeA	NIH / University of Arkansas for Med Science	15,143	6/1/21	8/31/21				Connecticut Children's
DiVietro, Susan	Pediatric Firearm Deaths	NIH / UCHC	5,199	6/1/21	5/31/22				Connecticut Children's
DuMont-Mathieu, Thyde	Bridging the Gap: Early Intervention for Underserved Children Within the Medical Home	Connecticut Health Foundation	50,000	1/1/20	12/31/20				
DuMont-Mathieu, Thyde	Bridging the Gap: Providing Equitable Early Treatment of ASD by Finding Children, Wherever They Are	DHHS / OEC / UConn Storrs	15,825	2/1/20	8/31/20				
DuMont-Mathieu, Thyde	Connecting the Dots: An RCT-Relating Standardized ASD Screening, Intervention Access, and Long-term Outcomes	DHHS/NIH (Drexel Univ) / UConn Storrs	58,686	9/7/17	5/31/21				
DuMont-Mathieu, Thyde	New OEC - Bridging the Gap	Office of Early Childhood	100,000	3/1/21	2/28/22				Connecticut Children's
DuMont-Mathieu, Thyde	New OEC - Bridging the Gap	Office of Early Childhood		1/1/21	12/31/21				Connecticut Children's
Dunbar, Nancy	An Observational, Longitudinal, Prospective, Long-term Registry of Patients with Hypophosphatasia	Alexion	12,295						
Edelheit, Barbara	Observational Study of Pediatric Rheumatic Diseases: The CARRA Registry	Childhood Arthritis and Rheumatology Research Alliance (CARRA) / Duke University	27,755	11/18/15	9/30/50				

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Edelheit, Barbara	PRINTO	The Istituto Giannina Gaslini		7/2/20	9/30/50				Connecticut Children's
Emerick, Karan	A 5-year Longitudinal Observational Study of Patients with Nonalcoholic Fatty Liver or Nonalcoholic Steatohepatitis (NASH)	TARGET PharmaSolutions, Inc.	375						
Emerick, Karan	An Open-label, Multicenter Study to Evaluate the Pharmacokinetics, Safety, and Efficacy of Glecaprevir/ Pibrentasvir in Pediatric Subjects with Genotypes 1 – 6 Chronic Hepatitis C Virus (HCV) Infection (DORA)	AbbVie Ltd	20,461						
Finck, Christine	A Retrievable Autologous Bioengineered Esophageal Implant as a Novel Treatment for Long-gap Esophageal Atresia	SBIR/Biostage	789,287	4/1/18	9/30/21	3 OF 3	X		
Finck, Christine	Biostage Supply Funds	CCMC-MOU	462,560	8/1/18	N/A				
Finck, Christine	Clinical Development of a Novel Pleural and Trachael Sealant	Department of Defense/ University of Vermont	289,237	7/1/19	6/30/22	3 OF 3	X	11,544	
Finck, Christine	Evaluation of the Increased Susceptibility of Obese Pediatric Patients to SARS CoV-2 Infection	American Society for Metabolic & Bariatric Surgery	25,000	7/1/21	6/30/23	1 OF 2			
Finck, Christine	Ex Vivo Bioengineering of Functional Biomimetic Airways for Treatment of Neonatal and Pediatric Respiratory Conditions	NIH / UCHC	20,189	4/1/21	3/31/23				Connecticut Children's
Finck, Christine	Ex Vivo Bioengineering of Functional Biomimetic Airways for Treatment of Neonatal and Pediatric Respiratory Conditions	NIH	231,527	4/1/21	3/31/23	1 OF 2	X	20,189	
Finck, Christine	Glenn Greenberg Fund	CCMC-MOU	70,000	1/1/19	N/A				
Finck, Christine	Nixon Family Fund	CCMC-MOU	42,700	10/1/16	N/A				
Flores, Glenn	APA Research in Peds (RAPID)	DHHS / NIH / (APA)	25,548	5/1/20	4/30/21				
Frederick, Natasha	Distress in the Pediatric Oncology Setting: Intervention Versus Natural Adaptation – A Multicenter Study	AFLAC / Children's Healthcare of Atlanta	20,319	7/1/20	9/30/21				
Garcia, Patricia	REACH Program	Amercian Academy of Pediatrics	2,900	9/1/21	5/15/22				Connecticut Children's
Grover, Nancy	OSA 18 in Children	RESMED Foundation	10,000	2/1/21	1/31/23				Connecticut Children's

PRINCIPAL INVESTIGATOR	AWARD / STUDY TITLE	FUNDING SOURCE PRIMARY / SECONDARY	AWARD	START DATE	END DATE	YEAR_ OF_	SUBCONTRACT TO UCHC/CCMC?	AMOUNT OF SUBCONTRACT	PRIMARY SITE
Hagadorn, James	Preterm Infant Outcomes Following Changes in Oxygen Saturation Targets in California Neonatal ICUs	NIH / NICHHD	100,764	4/1/20	3/31/21				
Haile, Jennifer	Childhood Lead Poisoning Prevention Program - Hospital	CT DPH	134,229	7/1/21	6/30/22				
Hersh, David	Low Intensity Pulsed Ultrasound	Thrasher Research Fund	16,284	1/1/21	12/31/22				Connecticut Children's
Hersh, David	Low Intensity Pulsed Ultrasound to Mitigate Skull Flap Resorption Following Cranioplasty	Thrasher Foundation	12,438	1/1/21	12/31/21	1 OF 1	X		
Hollenbach, Jessica	Creating an Asthma Network: Improving Asthma Management for Children in the North Hartford Promise Zone	The CIGNA Foundation	100,000	11/1/20	10/31/21				
Hollenbach, Jessica	Easy Breathing in Schools	Enrivonmental Protection Agency	25,000	10/1/20	9/30/22				
Hyams, Jeffrey	A Long-term Non-interventional Registry to Assess Safety and Effectiveness of Humira® (Adalimumab) in Pediatric Patients with Moderately to Severely Active Crohn's Disease (CD) – CAPE	AbbVie Ltd	26,158						
Hyams, Jeffrey	A Multicenter, Prospective, Long-term, Observational Registry of Pediatric Patients with Inflammatory Bowel Disease, DEVELOP®	Janssen Biotech, Inc.	138,745						
Hyams, Jeffrey	A Phase 2, Randomized, Double-blind, Dose-ranging Study to Determine the Pharmacokinetics, Safety and Tolerability of Vedolizumab IV in Pediatric Subjects With Ulcerative Colitis or Crohn's Disease	Takeda Development Center Americas, Inc	21,119						

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Hyams, Jeffrey	A Phase 2b, Extension Study to Determine the Long-term Safety of Vedolizumab IV in Pediatric Subjects With Ulcerative Colitis or Crohn's Disease	Takeda Development Center Americas, Inc	30,905						
Hyams, Jeffrey	A Phase 3, Randomized, Open-label Study to Assess the Efficacy, Safety, and Pharmacokinetics of Golimumab Treatment, a Human Anti-TNFa Monoclonal Antibody, Administered Subcutaneously in Pediatric Participants with Moderately to Severely Active Ulcerative Colitis, PURSUIT 2	Janssen Research & Development LLC	30,750						
Hyams, Jeffrey	A Phase 3, Multicenter, Open-label Continuation Study with Budesonide Oral Suspension (BOS) for Adolescent and Adult Subjects with Eosinophilic Esophagitis (EoE)	Shire Development	25,250						
Hyams, Jeffrey	A3921210 (Ovation)	Pfizer INC / ICON Clinical Research LLC		4/9/21	9/30/50				Connecticut Children's
Hyams, Jeffrey	CAMEO	NIH NIDDK	391,223	9/7/21	8/31/22				Connecticut Children's
Hyams, Jeffrey	COVID Research Fund			8/1/20	7/31/21				Connecticut Children's
Hyams, Jeffrey	Development and Evaluation of the TUMMY CD-index: A Patient-reported Signs and Symptoms Index for Pediatric Crohn's Disease	Izaak Walton Killam Health Centre	4,851	10/27/16	9/30/50				
Hyams, Jeffrey	Development and Evaluation of the TUMMY-UC Index: Patient Reported Signs and Symptom Index for Pediatric Ulcerative Colitis	Shaare Zedek Medical Center	3,825	3/26/19	9/30/50				
Hyams, Jeffrey	Dosing and Pilot Efficacy of 2'-Fucosyllactose in Inflammatory Bowel Disease	NIH / NIDDK / Cincinnati Children's Hospital Medical Center	347,233	7/1/18	3/31/21				
Hyams, Jeffrey	I6T MC AMAM	Lilly USA LLC		8/13/21	9/30/50				Connecticut Children's
Hyams, Jeffrey	Pathogenic Heterogeneity in Mucosal Stem Cells in Pediatric Crohn's Disease	NIH / NIDDK / University of Houston	46,953	7/1/20	6/30/21				
Hyams, Jeffrey	Pharmacodynamic Targets to Enrich a Personalized Infliximab Dosing Dashboard (RADAR Study)	Crohn's & Colitis Foundation / Cincinnati Children's Hospital Medical Center	7,320	1/1/19	12/31/21				

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Hyams, Jeffrey	Pharmacodynamic Targets to Enrich Personalized Anti-TNF Dosing (RADAR)	Crohn's & Colitis Foundation of America	6,620						
Hyams, Jeffrey	Pilot and Feasibility Study of 2'-FL as a Dietary Supplement in Pediatric and Young Adult IBD Patients Receiving Stable Maintenance Anti-TNF Therapy	NIH	36,189						
Hyams, Jeffrey	Precision Crohn's Disease Management Utilizing Predictive Protein Panels (ENvISION)	The Leona M. and Harry B. Helmsley Charitable Trust	2,000						
Hyams, Jeffrey	Precision Crohn's Disease Management Utilizing Predictive Protein Panels	Helmsley Charitable Trust / Cincinnati Children's Hospital Medical Center	47,843	3/1/20	2/28/21				
Hyams, Jeffrey	Precision Crohn's Disease Management Utilizing Predictive Protein Panels - Per Patient Enrollment	Helmsley Charitable Trust / Cincinnati Children's Hospital Medical Center	2,000	3/1/20	2/28/21				
Hyams, Jeffrey	Protocol I6T-MC-AMBU(a) – A Multicenter, Open-label PK Study of Mirikizumab in Pediatric Patients with Moderately to Severely Active Ulcerative Colitis SHINE-1	Eli Lilly & Co.	26,500						
Hyams, Jeffrey	R01 University of Houston	NIH NIDDK / University of Houston	93,298	7/1/20	6/30/22				Connecticut Children's
Hyams, Jeffrey	R21 University of Texas	NIH NIDDK / University of Texas Health Sci Ctr	19,986	7/8/21	6/30/22				Connecticut Children's
Hyams, Jeffrey	Risk Stratification and Identification of Immunogenetic and Microbial Markers of Rapid Disease Progression in Children with Crohn's Disease, Version 12.17.09	Crohn's & Colitis Foundation of America	34,528						
Isakoff, Michael	A Phase 2 Study of the JAK1/ JAK2 Inhibitor Ruxolitinib With Chemotherapy in Children With De Novo High-Risk CRLF2-Rearranged and/or JAK Pathway–Mutant Acute Lymphoblastic Leukemia	Incyte Corp / COG	1,000						
Isakoff, Michael	A Phase III, Randomized, Open-label, Multicenter Study of the Safety and Efficacy of Apixaban for Thromboembolism Prevention Versus No Systemic Anticoagulant Prophylaxis During Induction Chemotherapy in Children with Newly Diagnosed Acute Lymphoblastic Leukemia (ALL) or Lymphoma (T or B cell) Treated with Asparaginase	Bristol-Myers Squibb	28,162						
Isakoff, Michael	AAML 1831	Astella Pharmaceuticals / CHOP		2/5/21	1/1/50				Connecticut Children's

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Isakoff, Michael	ALTE07C1	NIH / CHOP		5/18/21	9/30/50				Connecticut Children's
Isakoff, Michael	CHOP - St. Baldrick's	COG	11,250						
Isakoff, Michael	Eisai E7389-G000-223, ADVL1722, A Phase 2, Multicenter, Open-label Study to Assess Safety and Preliminary Activity of Eribulin Mesylate in Pediatric Subjects with Relapsed/refractory Rhabdomyosarcoma (RMS), Non-rhabdomyosarcoma Soft Tissue Sarcoma (NRSTS) and Ewing Sarcoma (EWS)	Eisai Inc	2,000						
Isakoff, Michael	Expansion of the Sunshine Project	National Pediatric Cancer Foundation	24,080	7/1/20	6/30/21				Connecticut Children's
Isakoff, Michael	HTC 340B Program	DHHS/HRSA		7/1/20	9/30/50				Connecticut Children's
Isakoff, Michael	MCC 20320	Italfarmaco S.P.A.		7/29/20	9/30/50				Connecticut Children's
Isakoff, Michael	MCC 20339	National Pediatric Cancer Fdn / H Lee Moffitt Cancer Ctr		3/23/21	3/23/50				Connecticut Children's
Isakoff, Michael	MCC Protocol 19487, A Phase Ib/ II Study to Evaluate the Safety, Feasibility and Efficacy of Nivolumab or Nivolumab in Combination with Azacitidine in Patients with Recurrent, Resectable Osteosarcoma	National Pediatric Cancer Foundation (NPCF) / BMS	12,294						
Isakoff, Michael	MCC20320, Blood-based Biomarkers for Minimal Residual Disease Detection in Pediatric Sarcomas	National Pediatric Cancer Foundation (NPCF)	4,955						
Isakoff, Michael	Neuroblastoma and Meduloblastoma Translational Research Collaborative	NMTRC	4,000						
Isakoff, Michael	OST31-164-01	COG / CHOP		8/20/21	9/30/50				Connecticut Children's
Isakoff, Michael	Phase II Study of Nab-Paclitaxel in Combination with Gemcitabine for Treatment of Recurrent/Refractory Sarcoma in Teenagers and Young Adults	Moffitt Cancer Center and Research Institute	750						

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Isakoff, Michael	REAL HLH SOBI NA RWE 101	SOBI INC		9/12/21	9/30/50				Connecticut Children's
Keller, Mary	End of Treatment Transition	APHON		1/1/21	12/31/22				Connecticut Children's
Lainwala, Shabnam	Multi-omics Analysis of Pain/Stress Impact on Neurodevelopment in Preterm Infants	DHHS / NIH / NINR / UConn Storrs	415,981	9/14/17	7/31/21				Connecticut Children's
Lapin, Craig	Controlling and Preventing Asthma Progression and Severity in Kids (CASK)	NIAID	12,072						
Lapin, Craig	2020 CF Center Award: CC117	Cystic Fibrosis Foundation	93,210	7/1/20	6/30/21				
Lapin, Craig	2021 CF Care Center Award: CC1	CF FDN	93,210	7/1/21	6/30/22				Connecticut Children's
Lapin, Craig	CASK - Controlling and Preventing Asthma Progression and Severity in Kids	NIH / NIAID / Boston Children's Hospital	112,072	5/1/18	6/30/21				
Lapin, Craig	CF Center Grant CC117	CF FDN	93,210	7/1/20	6/30/21				Connecticut Children's
Lee, Youngmok	Development of Kidney Direct Gene Theray and Research to Improve the Efficacy of AAV-Mediated Gene Therapy in GSD-Ia Mice	The Children's Fund for Glycogen Storage Disease Research	553,512	12/1/19	6/30/22	2 OF 2			
Lee, Youngmok	Evaluation of the Efficacy of Gene Therapy to Arrest or Abrogate Preexisting HCA/HCC in Glycogen Storage Disease Type Ia	The Children's Fund for Glycogen Storage Disease Research	199,056	12/3/19	6/30/21	2 OF 2			
Lee, Youngmok	Evaluation of the Efficacy of Gene Therapy to Arrest or Abrogate Preexisting HCA/HCC in Glycogen Storage Disease Type Ia	The Children's Fund for Glycogen Storage Disease Research	352,067	12/1/18	12/31/20	2 OF 2			
Livingston, Nina	Child Abuse Centers of Excellence (CACE)	CT DCF	52,852	7/1/20	6/30/21				
Livingston, Nina	Child Abuse Centers of Excellence (CACE)	DHHS / CT DCF	220,500	7/1/20	6/30/21				
Livingston, Nina	Child Abuse Centers of Excellence (CACE)	CT DCF	518,671	7/1/20	6/30/21				
Livingston, Nina	Connecticut Children's Sexual Abuse Medical Services for Northern Connecticut	U.S. DEPT OF JUSTICE / CT JUDICIAL	389,178	7/1/20	6/30/21				
Livingston, Nina	DCF-CACE 2020-21 SID 16064	CT/DCF	518,671	7/1/20	6/30/21				Connecticut Children's

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Livingston, Nina	DCF-CACE 2020-21 SID 16135	CT/DCF	52,852	7/1/20	6/30/21				Connecticut Children's
Livingston, Nina	DCF-CACE 2020-21 SID 20139	DHHS / CT DCF	220,500	7/1/20	6/30/21				Connecticut Children's
Livingston, Nina	DCF-CACE 2021-22 SID 16064	CT/DCF	518,671	7/1/21	6/30/22				Connecticut Children's
Livingston, Nina	DCF-CACE 2021-22 SID 16135	CT/DCF	52,852	7/1/21	6/30/22				Connecticut Children's
Livingston, Nina	DCF-CACE 2021-22 SID 20139	DHHS / CT DCF	220,500	7/1/21	6/30/22				Connecticut Children's
Livingston, Nina	OVS - SA Services	US DOJ / CT Judicial	389,178	7/1/21	6/30/22				Connecticut Children's
Livingston, Nina	OVS - SA Services	US DOJ / CT Judicial	389,178	7/1/20	6/30/21				Connecticut Children's
Mathews-Wilson, Allison	Certified Behavioral Health CI	SAMHSA / The Village	285,000	7/1/20	4/30/22				Connecticut Children's
Matson, Adam	Multi-Omics Analysis of Pain/Stress Impact on Neurodevelopment in Preterm Infants	NIH/Storrs	5,271	9/14/17			FEE FOR SERVICE		
Matson, Adam	Neonatal Microbiome Project	Stevenson Fund (CCMC MOU)	270,500	12/31/19	N/A				
Mulchan, Siddika	Mulchan - Health Research Program	UCONN Storrs	500	9/1/21	9/30/50				Connecticut Children's
Orsey, Andrea	Care Pathways for Children	NIH / Hospital for Sick Children		8/1/20	4/30/21				Connecticut Children's
Õunpuu, Sylvia	A Study of the Correlation Between Gait Abnormalities, Activity-monitoring Parameters, CMTPedS, and a Biomarker in Children with Charcot-Marie-Tooth Disease	Harold and Rebecca Gross Foundation	19,872						
Õunpuu, Sylvia	A Study of the Correlation Between Gait Abnormalities, Activity-monitoring Parameters, CMTPeds, and a Biomarker with Charcot-Marie-Tooth Disease	The University of Pennsylvania - Orphan Disease Center	60,330	2/1/20	7/31/21				
Õunpuu, Sylvia	Analysis of Disease Progression	Harold and Rebecca Gross Foundation	50,000	9/16/20	9/16/21				Connecticut Children's
Õunpuu, Sylvia	Analysis of Disease Progression and Treatment Outcomes in Children with CMT	Harold and Rebecca Gross Foundation	50,000	9/16/20	9/16/21				
Õunpuu, Sylvia	Disease and Progression Treatment	Harold and Rebecca Gross Foundation	60,000	8/27/21	8/27/22				Connecticut Children's

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Õunpuu, Sylvia	Long-term Follow-up of Individuals with Cerebral Palsy Who Underwent Gait Analyses	Shriners Hospitals for Children	5,103	12/7/18	9/30/20				
Ramirez, Katherine	Health Care Needs SID 12126	CT DPH	177,807	7/1/21	6/30/22				Connecticut Children's
Ramirez, Katherine	Health Care Needs SID 12126	CT DPH	177,807	7/1/20	6/30/21				Connecticut Children's
Ramirez, Katherine	Health Care Needs SID 12126	Connecticut Department of Public Health	177,807	7/1/20	6/30/21				
Ramirez, Katherine	Health Care Needs SID 21531	HRSA / CT DPH	240,194	7/1/20	6/30/21				Connecticut Children's
Ramirez, Katherine	Health Care Needs SID 21531	Connecticut Department of Public Health	240,194	7/1/20	6/30/21				
Ramirez, Katherine	Health Care Needs SID 21531	HRSA / CT DPH	296,144	7/1/21	6/30/22				Connecticut Children's
Riba-Wolman, Rebecca	A Long-term Follow-up Study to Evaluate the Safety and Efficacy of Adeno-associated Virus (AAV) Serotype 8 (AAV8)-mediated Gene Transfer of Glucose-6-Phosphatase (G6Pase) in Adults with Glycogen Storage Disease Type Ia (GSDIa)	Ultragenyx Pharmaceuticals, Inc.	1,242,236	7/15/19	11/30/24	2 OF 5			
Riba-Wolman, Rebecca	A Phase 1/2, Open-label Safety and Dose-finding Study of Adeno-associated Virus (AAV) Serotype 8 (AAV8)-mediated Gene Transfer of Glucose-6-Phosphatase(G6Pase) in Adults with Glycogen Storage Disease Type 1a	Ultragenyx Pharmaceuticals, Inc.	929,889	5/18/18	11/30/20	2 OF 2			
Riba-Wolman, Rebecca	A Phase 3, Randomized, Double-blind, Placebo-controlled Study of Adeno-associated Virus Serotype 8-mediated Gene Transfer of Glucose-6-phosphatase in Patients with Glycogen Storage Disease Type Ia	Ultragenyx Pharmaceuticals, Inc.	1,024,663	7/26/21	10/31/24	1 OF 3			
Rogers, Steve	A Systems Analysis of Mental Health Care from the Perspective of Pediatric Primary Care	DCF	50,000	3/1/20	2/28/21				
Rogers, Steve	An Interprofessional Approach to Pediatric Behavioral Health Acuity Assessment in the Emergency Department	CHDI	40,000	12/1/19	9/30/21				
Rogers, Steve	Enhanced Care Coordination	Kenworthy Smith Foundation	18,000	7/1/20	6/30/21				Connecticut Children's
Rogers, Steve	Enhanced Care Coordination Evaluation	Kenworthy Smith Foundation	18,000	7/1/20	6/30/21				

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Rogers, Steve	Grants for Expansion and Sustainability of the Comprehensive Community Mental Health Services for Children with Serious Emotional Disturbances	CHDI/DHHS	49,000	10/1/20	9/30/21				
Rogers, Steve	Pediatric Behavioral Health	CT DCF / CHDI of CT, Inc.	49,000	10/1/20	9/30/21				Connecticut Children's
Rose, Jacquelyn	Innovations Deployed in Primary Care in Response to the COVID-19 Pandemic	Children's Fund of Connecticut / (Child Health & Development Institute of Connecticut)	15,000	7/20/20	11/30/20				
Rose, Jacquelyn	Primary Care Response to COVID	CFC / CHDI OF CT, INC.	15,000	7/20/20	11/30/20				Connecticut Children's
Rubin, Karen	Connecticut Newborn Screening	CT DPH	599,177	7/1/20	6/30/21				Connecticut Children's
Rubin, Karen	Diagnostic and Treatment Center Services for the Connecticut Newborn Screening Program	CT / DPH	1,856,531	7/1/18	6/30/21				
Rubin, Karen	Expanding Behavioral Health	Children's Fund of CT, Inc.	75,000	1/1/21	6/30/22				Connecticut Children's
Rubin, Karen	Federal - CT Newborn	HRSA / CT DPH	11,000	7/1/20	6/30/21				Connecticut Children's
Rubin, Karen	Federal - CT Newborn Screening	HRSA / CT DPH	24,000	7/1/20	6/30/21				Connecticut Children's
Rubin, Karen	Leveraging Telehealth	DHHS / AMCHP	100,000	10/1/20	4/30/21				Connecticut Children's
Rubin, Karen	Leveraging Telehealth and the Family Voice to Deliver on the Promise of Newborn Screening	AMCHP	100,000	10/1/20	4/30/21				
Rubin, Karen	Long-term Follow-up for SCID a	HRSA	477,408	8/1/21	7/31/22				Connecticut Children's
Rubin, Karen	Newborn Screening 21-22	CT DPH	599,177	7/1/21	6/30/22				Connecticut Children's
Rubin, Karen	Telehealth Network Grant Program	DHHS / HRSA (Community Health Center, Inc)	57,150	9/1/16	8/31/20				
Salazar, Juan	2019nCoV-301	ICON Clinical Research LLC		9/22/21	9/30/50				Connecticut Children's
Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum - Project 1	NIH	16,713	5/1/19	4/30/24	3 OF 5	X		

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Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum - Project 1	NIH	16,820	5/1/19	4/30/24	2 OF 5	X		
Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum - Project 2	NIH	69,021	5/1/19	4/30/24	3 OF 5	X		
Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum - Project 2	NIH	750,866	5/1/19	4/30/24	2 OF 5	X		
Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum - Project 3	NIH	50,120	5/1/19	4/30/24	3 OF 5	X		
Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum - Project 3	NIH	50,441	5/1/19	4/30/24	2 OF 5	X		
Salazar, Juan	A Global Syphilis Vaccine Targeting Outer Membrane Proteins of Treponema pallidum	NIH / NIAID / UConn Health	79,096	5/1/20	4/30/21				
Salazar, Juan	Department of Public Health HIV Prevention	DHHS / CDC / CT DPH	25,000	1/1/20	12/31/20				
Salazar, Juan	Department of Public Health HIV Prevention	CT DPH	75,000	1/1/20	12/31/20				
Salazar, Juan	DPH HIV Prevention	DHHS / CT DPH	25,000	1/1/21	12/31/21				Connecticut Children's
Salazar, Juan	DPH HIV Prevention	CT DPH	75,000	1/1/21	12/31/21				Connecticut Children's
Salazar, Juan	DPH HIV Prevention	DPH	108,927	1/1/19	12/31/21	3 OF 3	X		
Salazar, Juan	Expanded Access IND Program to Provide Stamaril® Vaccine to Persons in the United States for Vaccination Against Yellow Fever	Sanofi Pasteur Inc.	13,455						

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Salazar, Juan	Glycogen Storage 1B Disease Research Fund	Foundation	45		N/A				
Salazar, Juan	Glycogen Storage Disease Program Fund	Foundation	700	11/1/16	N/A				
Salazar, Juan	Glycogen Storage Disease Type 1a Research Fund	Foundation	300		N/A				
Salazar, Juan	MIS-C	NIH NICHHD	877,921	1/1/21	11/30/21				Connecticut Children's
Salazar, Juan	Nina Contreras D'Agosto Fund	Foundation	1,470	8/27/18	N/A				
Salazar, Juan	Registry of Patients With Primary Immune Deficiency Disorders	United States Immunodeficiency Network	700	9/30/14					
Salazar, Juan	RW Cares Act COVID Response	HRSA / City of Hartford	12,425	4/1/21	3/31/22				Connecticut Children's
Salazar, Juan	Ryan White A	HRSA/CCSG	8,282	9/18/20	2/28/21	1 OF 1			
Salazar, Juan	Ryan White A 2021-22	HRSA / City of Hartford	85,867	3/1/21	2/28/22				Connecticut Children's
Salazar, Juan	Ryan White B	DPH	97,607	4/1/21	3/31/23	1 OF 2	X		
Salazar, Juan	Ryan White D	HRSA/CCSG	183,117	8/1/16	7/31/22	5 OF 5	X		
Salazar, Juan	Ryan White D 2020-21	HRSA	357,831	8/1/20	7/31/21				Connecticut Children's
Salazar, Juan	Ryan White D 2021-22	DHHS/HRSA	357,831	8/1/21	7/31/22				Connecticut Children's

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Salazar, Juan	Ryan White HIV/AIDS Program Part A COVID-19 Response	HRSA / City of Hartford	10,328	4/1/20	3/31/21				
Salazar, Juan	Ryan White HIV/AIDS Program Part D WICY COVID19 Response	HRSA	26,268	4/1/20	3/31/21				
Salazar, Juan	Ryan White Part A and Minority AIDS Initiative (MAI) for Fiscal Year 2018-2021	HRSA / City of Hartford	113,996	3/1/20	2/28/21				
Salazar, Juan	Ryan White Title IV Women, Infants, Children, Youth and Affected Family Members AIDS Health Care	HRSA	357,831	8/1/20	7/31/21				
Salazar, Juan	Ryan White Title IV Women, Infants, Children, Youth and Affected Family Members AIDS Health Care	HRSA	491,441	8/1/19	7/31/20				
Salazar, Juan	The Jamie Konieczka Fund for Glycogen Storage Disease Type 1B Research	Foundation	450	9/1/17	N/A				
Salazar, Juan	The Jonah Pournazarian Fund for Glycogen Storage Disease Type 1b Research	Foundation	76,758	12/1/16	N/A				
Salazar, Juan	U19 - Clinical	NIH NIAID / UCHC	69,021	5/1/21	4/30/22				Connecticut Children's
Salazar, Juan	U19 - Outer Membrane	NIH NIAID / UCHC	16,694	5/1/21	4/30/22				Connecticut Children's
Salazar, Juan	U19 Immunology	NIH NIAID / UCHC	50,120	5/1/21	4/30/22				Connecticut Children's
Salazar, Juan	VLA15-221	Valneva Austria GMBH / Celerion Icn.		4/1/21	4/1/50				Connecticut Children's
Sandhu, Preeti	Ready for Change	Noonan Mem Research / Boston Children's	19,800	1/1/21	12/31/21				Connecticut Children's
Santos, Melissa	Pain and Weight Treatment: Development and Trial of PAW	DHHS/NIH/NIDDK	463,879	4/1/19	3/31/22				

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Schoem, Scott	A Prospective, Single-arm, Multicenter, Study to Evaluate Effectiveness and Safety of Tympanostomy Tube Placement Using the Tula Iontophoresis and Tube Delivery Systems for Children in an Office Setting (OTTER; in-Office Tympanostomy Tube placemEnt in childRen)	Tusker Medical	5,024						
Schwarz, Katherine	Efficacy, Safety, Tolerability, Immunogenicity and Pharmacokinetic Evaluation of HYQVIA in Pediatric Subjects with Primary Immunodeficiency Diseases	Baxalta Inc	32,342						
Silva, Cynthia	CureGN: Cure Glomerulonephropathy Network	NIH	7,630						
Smith, Sharon	Pediatric Residency Telemedicine	AAMC	15,000	6/14/21	6/13/22				Connecticut Children's
Tory, Heather	A Long-term, Open-label Follow-up Study of Tofacitinib for Treatment of Juvenile Idiopathic Arthritis (JIA)	Pfizer	10,854						
Tory, Heather	Patient and Physician Discordance of Global Disease Assessment in Juvenile Dermatomyositis: Findings from the Childhood Arthritis & Rheumatology Research Alliance Legacy Registry	Childhood Arthritis and Rheumatology Research Alliance (CARRA)	2,755	1/24/20	9/30/50				
Trout, Nancy	Start Childhood Off Right	Kohl's	364,808	10/1/19	9/30/21				
Wakefield, Emily	The Impact of Social Rejection: Investigating Pain-related Stigma in Adolescents with Chronic Widespread Musculoskeletal Pain (K23 Supplement)	DHHS / NIH / NIAMS	54,000	2/1/20	1/31/21				
Wakefield, Emily	The Impact of Social Rejection: Pain-related Stigma in Adolescents with Chronic Widespread Musculoskeletal Pain (K23)	DHHS / NIH / NIAMS	129,828	2/1/20	1/31/25				
Watkins, Amy	Child Passenger Safety Program	DOT / CT DOT	75,000	2/11/21	9/30/21				Connecticut Children's

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Watkins, Amy	Watch for Me CT	DOT / CT DOT	360,000	10/1/20	9/30/21				Connecticut Children's
Waynik, Illana	Nasal MicroRNA During Bronchiolitis and Age 6y Asthma Phenotypes: MARC-35 Cohort	DHHS / NIH / Mass General	25,353	12/1/16	11/30/21				
Waynik, Illana	Prospective Cohort Study of Severe Bronchiolitis and Risk of Recurrent Wheezing	NIAID	3,074						
Weinstein, David	A Comparison of Glycosade® and Uncooked Cornstarch (UCCS) for the Dietary Management of Hepatic Glycogen Storage Diseases (GSD)	Vitaflo International Ltd	22,750						
Weinstein, David	Whole Exome/Genome Sequencing for the Assessment of Unclassified Glycogen Storage Diseases and Disorders of Energy Metabolism	Jewish Community Foundation	82,850	9/1/19	12/31/21	2 OF 2	X	82,850	
Weinstein, David	Whole Exome/Genome Sequencing for the Assessment of Unclassified Glycogen Storage Diseases and Disorders of Energy Metabolism	Jewish Community Foundation	82,850	9/1/19	9/1/21				
Wolkoff, Leslie	A Phase 2/3 Randomized, Double-blind, Palivizumab-controlled Study to Evaluate the Safety of MEDI18897, a Monoclonal Antibody with an Extended Half-life Against Respiratory Syncytial Virus, in High-risk Children (MEDLEY)	AstraZeneca / MedImmune	9,000						
Wolkoff, Leslie	A Randomized, Double-blind, Parallel-group, Placebo-controlled Study to Evaluate the Efficacy and Safety of IBP-9414 in Premature Infants 500-1500g Birth Weight in the Prevention of Necrotizing Enterocolitis – The Connection Study	Infant Bacterial Therapeutics	15,846						
Zempsky, William	Effectiveness of an mHealth Psychosocial Intervention to Prevent Transition from Acute to Chronic Postsurgical Pain in Adolescents (UG3)	NIH / NICHD / Seattle Children's Hospital	22,658	9/30/19	8/31/20				
Zempsky, William	Innovation in the Treatment of Persistent Pain in Adults with NF1: Implementation of the ICanCope Mobile Application	Department of Defense / Yale University	56,534	8/1/19	7/31/21