

Larner College of Medicine Department of Pediatrics
The University of Vermont Children's Hospital



2017 Annual Report

It gives me great pleasure to introduce this year's annual report for the Department of Pediatrics at the Robert Larner, M.D. College of Medicine and the University of Vermont Children's Hospital.



Lewis First, M.D.

IT IS A PRIVILEGE AND pleasure to once again introduce this year's annual report for the Department of Pediatrics at the Robert Larner, M.D. College of Medicine at the University of Vermont and for the University of Vermont Children's Hospital. It summarizes my 23rd year as chair of the department, and highlights a myriad of programs, services, and people that have enabled us to take the great accomplishments of 2016 and move them to even greater accomplishments in 2017.

This report covers the period from January through December 2017 and details in so many ways how we successfully strive to provide the highest quality patient- and family-centered clinical care possible while also strengthening our educational, research, advocacy and philanthropic missions.

We continue to grow in our numbers of faculty and staff, but also in our ability to develop and achieve terrific outcome metrics consistent with the "quadruple aim" of health care—i.e. a superb individual patient experience; a focus on improving the health of

the populations we serve; an ability to be good stewards of cost-effective resources; and our creation of a culture of wellness and resilience for those who make up our department and children's hospital. Key to the success of many of the initiatives you will read about in this report are our more than 50 patient and family advisors who volunteer their time to improve child health.

Most importantly this report, skillfully compiled and edited by our senior administrative coordinator Susan Victory, once again illustrates how we are all working together to further the legacy of department legends like the department's founder, the late Dr. R. James (Jim) McKay. This year we dedicate our annual report to the memory of two of our extraordinary faculty who both passed away late in 2017—Dr. Jerold (Jerry) Lucey, Professor Emeritus of Pediatrics, founder of our neonatal division, and former editor of *Pediatrics*; and Dr. Paula Duncan, Professor of Pediatrics, adolescent and school health champion and co-editor of *Bright Futures*.

The vision of Drs. McKay, Lucey and Duncan was always for us to be a children's hospital and department without walls, involving everyone in our region who has an interest in improving the health of children. It is an honor to be part of the remarkable team of physicians, nurses, staff, and family advisors that make us the highest quality, and most collaborative patient- and family-centered department and children's hospital possible. As you read through our annual report, you'll see what I mean.

LEWIS FIRST, M.D.

The University of Vermont Department of Pediatrics, *Chairman and Professor*
The University of Vermont Children's Hospital, *Chief of Pediatrics*
Children's Health Care Service, The University of Vermont Children's Hospital, *Physician Leader*

Table of Contents

2	Facts and Figures	24	Other Pediatric Specialties
4	Working Together for the Good of Patients		Anesthesiology
6	Empowering Young Adults		Dermatology
8	Training New Docs for 21st Century Medicine		Emergency Medicine
10	Supporting Gender Variant & Transgender Youth		Neurology
12	2017 Year in Giving		Orthopedics
14	Pediatric Divisions and Programs		Pathology
	Primary Care		Psychiatry
	Adolescent Medicine		Psychology
	Child Abuse Program		Radiology
	Cardiology		Women's Care and Pediatric Service
	Developmental Behavioral Pediatrics	29	Pediatric Surgical Specialties
	Endocrinology		General Surgery
	Gastroenterology, Hepatology and Nutrition		Neurological Surgery
	Genetics and Dysmorphology		Ophthalmology
	Hematology/Oncology		Otolaryngology
	Infectious Disease		Urology
	Pediatric Critical Care Medicine	32	Faculty and Community Faculty
	Pediatric Hospitalist Medicine		
	Neonatology		
	Nephrology		
	Palliative Medicine		
	Pulmonology		
	Rheumatology		

On the cover: Jonathan Flyer, M.D.



FACTS & FIGURES

More than **325** admissions per year to the pediatric intensive care unit

8 Child Life Specialists are dedicated to making patient care as child-friendly and family-centered as possible

Diabetes: Approximately **250** patients with diabetes are being followed in our endocrinology program

More than **2,200** babies born yearly

Oncology: Approximately **30** children are newly diagnosed with cancer each year

UVM Children's Hospital hosts **the only level 3 NICU** in Vermont and upstate New York

More than **40** families serve as family advisors, working with staff to insure our care is child-friendly and family-centered

The Children's Specialty Center serves about **25,000** patient visits per year in more than **15** subspecialty programs



I have witnessed the positive outcomes that have come from empowering families to join in their child's health care journey. I find the collaboration between the health care professionals and the patients' families inspiring. Personally, this approach has helped our family in guiding decisions for our son's evolving health care needs."

– Sandy Huber, Co-chair, Type I Diabetes Patient/Family Advisory Council



JESSICA HEATH, M.D.

Working Together for the Good of Patients



IN EXAM ROOMS OF THE Children's Specialty Center at the University of Vermont Medical Center, bright-colored wall murals help distract the young patients from their purpose for coming to the hospital. Flamingos perch among palm trees and umbrellas poke out of a sandy beach in the Tropical Room. The Arctic Room features polar bears; the Sports Room balls and mitts.

Housed under the UVM Children's Hospital, the Children's Specialty Center is an outpatient hub of 21 specialties. It allows patients with multiple medical needs or complicated ailments to see many—if not all—of their specialists and caregivers in one place, rather than scheduling and traveling to appointments in several locations.

In keeping with the patient- and family-centered mission of UVM Medical Center, the Children's Specialty Center strives to provide top-quality care "in a way that is as convenient and easy as possible," explains Michael D'Amico, M.D., a pediatric gastroenterologist and the center's director.

A child with cystic fibrosis would commonly need to see a pulmonologist, gastroenterologist, endocrinologist and nutritionist, as well as social workers and psychologists. A care coordinator from the primary specialty area oversees patient visits.

"So when they come in, they see everybody all at once," says Maureen Leopold, practice supervisor at the Children's Specialty Center.

Since launching in 1996, the center has more than doubled its number of exam rooms to 16, plus another six from the addition of annex space in February. Over time, its programs have expanded to encompass new areas of need.

Recently, the center added outpatient circumcisions and lactation consultations, as well as a new Transgender Youth Program. Child Safe, a child abuse response program, started two years ago to coordinate intervention when the Emergency Department or another hospital area refers cases. Now in the planning stages is a behavioral health program to manage care for children with developmental problems. It's not just logistics that makes the Children's Specialty Center distinctive but its philosophical approach, its sensitivity to the emotions and concerns of a developing person. "They're not just little adults, I always like to say," D'Amico says.

The center's Child Life program incorporates play therapy and other techniques to help young patients understand their diagnoses and navigate the healthcare system. Children with cancer get Specialty Center treatment, too. The three-bed infusion bay provides chemotherapy; hematology, rheumatology, nephrology or gastroenterology treatments; or enzymes for genetic disorders.

During visits there that can last for several hours, youngsters can draw or do crafts at a small table. A freezer provides popsicles on demand. All of it helps take their minds off whatever is ailing them. ■

Celebrating Patient- and Family-Centered Care

In the fall of 2009, Lisa Emerson, nurse manager for inpatient pediatrics, attended a conference hosted by the Institute for Patient- and Family-Centered Care that inspired her to connect with families of pediatric patients and create an action plan for UVM Children's Hospital. Shortly thereafter, the University of Vermont Children's Hospital Patient/Family Advisory Council was created. Since then, the collaboration among leadership, staff, and patients and families has become the solid foundation to improve the quality, safety, and delivery of health care.

Currently, 50 Patient/Family Advisors are actively engaged in advisory councils, quality improvement projects, committees, and workgroups across our Children's Specialty Center, Emergency Department, Inpatient Pediatrics, Neonatal Intensive Care, Pediatric Intensive Care, and Pediatric Primary Care settings.

Improving Care for Children with Neurodevelopmental Disabilities

The Vermont Leadership Education in Neurodevelopmental Disabilities (VT LEND) program collaborates with organizations nationally to improve the health of infants, children and adolescents with or at-risk for neurodevelopmental and related disabilities. Funded through the Maternal and Child Health Bureau, VT LEND is one of 52 LEND programs nationally. The 14-member interprofessional team trains 12 individuals

annually from different health and education disciplines, family members of people with disabilities, and individuals who have a disability.

VT LEND, led by director Maria Mercedes Avila, Ph.D., will benefit from several grants next year. Avila



2017 VT LEND graduates

will be working with Georgetown University on an Administration on Intellectual and Developmental Disabilities grant providing cultural and linguistic competence training and consultation to centers across the country. She is working with Jerry Larrabee, M.D., on a Frymoyer grant to develop a documentary on healthcare disparities in Vermont. To expand LEND opportunities in American Samoa and U.S. Virgin Islands, VT LEND is collaborating with two Health Resources and Services Administration Zika grants in California and Miami.

VT LEND has trained over 150 leaders who are making a difference for children with disabilities and their families. Faculty served 183 children with special health care needs aged 12 months to 24 years in 2017. VT LEND has also implemented the second year of a distance accessible training program. Two online graduate courses and all training days are available via web conferencing.



Empowering Young Adults

THE JOURNEY FROM TEEN

to adult can be fraught with challenge. Even more so for young adults who suffer from chronic illness like diabetes or cystic fibrosis. Not only are these adolescents faced with the inevitable bumps in the road when it comes to growing up, they have to learn how to manage potentially life-threatening illnesses while navigating a complex medical system.

With support from the Vermont Department of Health, the Child Chronic Care Initiative team of the Vermont Child Health Improvement Program (VCHIP) has created an innovative program to help adolescents take charge of their health. Building a partnership with hiCOLab, the UVM Health Network's new innovation lab, and the Children's Specialty Center, they launched a pilot study with 13 pediatric patients to evaluate the effectiveness of several communication initiatives to guide young adults towards health independence. All of the patients suffered from type 1 diabetes, irritable bowel syndrome, or a chronic heart condition.

One arm of the pilot centered on face-to-face communication: a hands-on workshop with peers. The teens, aged 14 to 17 years-

old, mapped out their transition journeys, and identified challenges they have faced in the past and will face in the future.

"It was well-received," says Alyssa Consigli, VCHIP project director. "They learned from each other, giving them a sense of empowerment."

The second component of the pilot focused on the digital space. The pilot introduced a text messaging platform that sends prompting questions, encouraging words and helpful links to help teens stay connected to their health in between visits to their doctor's office.

Key to success was the collaboration with hiCOLab, which focuses on improving the patient experience through human-centered design. Jeremy Beaudry, lead health care experience designer at the medical center, says the goal is to devise solutions that meet patients where they are. For example, the text messaging "chat bot" was designed to have a personality and a voice that resonates with teens. This required delving into questions about how adolescents learn, how they interact with peers and family members, and what support they need to achieve goals.

To that end, Beaudry and Colleen Clark, a user experience design consultant, conducted focus groups and interviews with more than 60 stakeholders including patients, family members, medical center employees and providers, Vermont Department of Health leaders, and others. It's a collaboration that yielded important results beyond the clinic, says Keith Robinson, M.D., a pediatric pulmonologist and director of quality improvement at UVM Children's Hospital.

"They were able to collate and distill all of this information," says Robinson. "They really looked at the system at micro and macro levels."

Next up, after compiling results from the pilot and scaling up, is working with providers on new ways to organize the health care system so that adolescents have a more seamless transition to adult care. For Clark, health care professionals will be key collaborators as they generate ideas for improvements.

"We're giving people permission to think differently," she says. "We're empowering patients but we're also empowering employees to trust their intuition." ■



Adolescent patients with chronic conditions learn how to navigate the healthcare system during a pilot study from the Child Chronic Care Initiative team of the Vermont Child Health Improvement Program.

ImproveCareNow Expands

The ImproveCareNow Network, led by president and executive network director Richard Colletti, M.D., continued to grow in 2017 to more than 100 participating centers, with all nine pediatric inflammatory bowel disease programs in Belgium joining this quality improvement and research network for pediatric Crohn's disease and ulcerative colitis. More than half the children in the United States with Crohn's disease and ulcerative colitis cared for by a pediatric gastroenterologist are at an ImproveCareNow center, including the UVM Children's Hospital. Jillian Sullivan, M.D., leads the UVM ImproveCareNow team. Colletti is co-author of a book chapter titled "Quality Improvement in Inflammatory Bowel Disease" in *Pediatric Inflammatory Bowel Disease*,

published in 2017. He's also given presentations at several national and international meetings.

Antibiotic Stewardship One Focus for Vermont Oxford Network

The Vermont Oxford Network is a collaboration of health professionals from over 1,000 hospitals around the world dedicated to improving the quality and safety of health care for newborn infants and their families. The database the network maintains, which includes two million records over 69 million patient days, now enrolls more than 90 percent of all very low birth weight infants born in the United States each year and a growing proportion worldwide, helping to advance research and quality improvement in neonatal intensive care.

In partnership with the Centers

for Disease Control, Vermont Oxford Network is conducting a collaborative involving over 180 teams from around the world designed to reduce the overuse and misuse of antibiotics for newborn infants. The collaborative is making dramatic progress in implementing the CDC core elements for antibiotic stewardship.

The network has also developed a neonatal quality improvement database for use in the developing world. In partnership with the Ethiopian Pediatric Society, this database is being implemented in hospitals providing specialized newborn care in Ethiopia. Research conducted by Vermont Oxford Network was presented at the 2017 Pediatric Academic Societies Meeting and has appeared in numerous peer-reviewed journals.



Training New Docs for 21st Century Medicine

WHEN THIRD-YEAR MEDICAL students at the Larner College of Medicine attend orientation for their pediatrics clerkship, they don't sit and listen as an administrator explains what they can expect and how their grades are calculated.

Instead, they read a syllabus addressing those questions before they arrive. At that point, they take a quiz, followed by a comparison of their answers as a group. Then, the group gets into a conversation about clerkship objectives, the importance of personal and group reflection, and other topics like the tenets of family-centered care.

"It's not just a quiz and we go on," explains William Raszka, M.D., UVM pediatrics professor and director of the pediatrics clerkship. "We use it to lead to a broader discussion, because we want them to engage with the material."

Orientation sets the stage for what's to come, as the pediatrics clerkship incorporates active learning throughout. It is the first Larner College clerkship to feature an all-active regimen. By 2019, the college plans to shift the entire Vermont Integrated Curriculum to active learning methods. By incorporating small group discussion, flipped classroom exercises, simulation, and other teaching

methods, not only do students apply the medical knowledge they're learning, they also practice how to work in a team and effectively communicate.

The seven-week clerkship focuses on hands-on experience through rotations in pediatric primary care practices, children's hospital units, critical care, and pediatric specialties. It also includes classroom sessions in areas such as fever and rashes, vaccines, abdominal complaints, and child abuse.

With active learning, those sessions start before the students get to the classroom. They receive reading materials, narrated PowerPoint presentations and videos that they review in advance, then come to class and take a "readiness" quiz. After the quiz, they discuss their answers, and an instructor makes sure to "close the gap," as Raszka puts it.

"We want the students to be very comfortable saying, 'I don't understand. I don't know why,'" he says. "That way, everyone has a level of knowledge and how to apply it."

A child with a rash, for example, could have scarlet fever, toxic shock syndrome or Kawasaki disease. Students must not only explain their diagnosis but their reasons for choosing it. In the final

step of active learning, students put the information they learned to real-life case studies.

The pediatrics clerkship includes five locations: UVM Medical Center; UVM Health Network affiliate sites in Vermont and New York; Western Connecticut Health Network in Norwalk, Conn.; St. Mary's Hospital in West Palm Beach, Fla.; and Eastern Maine Medical Center in Bangor, Me.

Previously, all 17 students gathered—either in person or via Zoom video conference—at UVM's Burlington campus for the group sessions. Now, the clerkship uses a "distributed model," keeping students at their own sites for most active learning sessions.

Research shows that active learning improves student engagement, knowledge retention and, ultimately, test scores. Any student today can call up a description of meningitis symptoms on a smartphone, Raszka says. To identify meningitis as the cause of, say, a child's altered mental status—rather than trauma, vasculitis or seizures—requires more than recitation of facts.

"We're trying to foster, in a safe environment, application," Raszka says. "It's a way to apply the knowledge you have." ■



William Raszka, M.D., with medical students and residents at UVM Children's Hospital

Residency Program Incorporates Quality Improvement Projects

The pediatric residency program has a long history of teaching excellent general pediatrics within a collaborative community of pediatricians, and it has developed an outstanding national reputation for the caliber of its graduates. In addition to a comprehensive training program in primary, secondary and tertiary care, the program also includes innovative training in advocacy and quality improvement. Every resident who graduates from the three-year program completes a community-based project. Residents also complete a longitudinal quality improvement project as part of a population health curriculum. The program, which accepts seven residents annually, boasts a faculty who are dedicated to high quality teaching and mentorship.

As a result, graduates are sought after for their leadership aptitude and clinical skills. UVM pediatric residents go on to highly competitive fellowship programs as well as positions in academic health centers and primary care practices across the country.

Neonatal-Perinatal Medicine Fellowship Program Expands

The Neonatal-Perinatal Medicine Fellowship Program combines active clinical and research mentoring with immersion in attending-level activities. This year, the program grew to three fellows and underwent a change in leadership with Dierdre O'Reilly, M.D., named as director. The curriculum expanded to include adult learning methods for competencies, including ethics and professionalism, wellness,

and evidence-based medicine. Fellows receive training in quality improvement and teaching through close relationships with the Vermont Oxford Network and the Larner College of Medicine's Teaching Academy. A one-month rotation at Boston Children's Hospital provides experience with cardiac surgery and extracorporeal membrane oxygenation (ECMO). In cooperation with the Neonatal-Perinatal Fellowship training program at Dartmouth, semi-annual joint fellow conferences and monthly webinars strengthen presentation skills and fundamental knowledge for clinical practice. Fellows tailor research and scholarly activity to career goals; recent efforts have included clinical and outcomes research, quality improvement projects, and family-centered care-based research.



Supporting Gender Variant & Transgender Youth

L to R: Candace Bedard, Martina Drawdy, M.D., Theresa Emery

ABOUT SEVEN YEARS AGO, pediatric endocrinologist Martina Drawdy, M.D., began to notice a growing need in the population she treats. Families would come to her with questions about gender expression and identity, sometimes asking about hormone therapy or other treatment options. With few resources available in Vermont, she'd often refer these patients to medical centers in Boston. But as the years ticked on and more families continued to seek help and advice, she decided it was time to provide care closer to home for children who are questioning their gender identity.

In February of 2016, UVM Children's Hospital launched the Transgender Youth Program with a goal to support gender variant and transgender youth and their families through a multidisciplinary approach. Although four providers form the core of the program—Drawdy along with Jamie Mehringer, M.D., social worker Theresa Emery and nurse coordinator Candace Bedard—roughly 65 health care providers from across the UVM Health Network are involved. About 70 patients, from about five years-old through the late teen years, now seek care through the program, up from about ten when

it first launched. At the heart of their work is an understanding that every child's experience is unique.

"This is much bigger than endocrinology," says Drawdy, emphasizing that the program based in the Children's Specialty Center provides wrap-around care for children and families.

Some patients who are questioning their gender identity may need support as they work through the challenges they're facing. Others may feel extreme discomfort with the sex they were born into or have been assigned, and may benefit from hormone

Healing through Art

Whether it's crafting a clay animal, a paper airplane or a watercolor painting, unleashing creativity can help children cope with the fear and anxiety a visit to the hospital can bring. Art from the Heart—a collaboration between UVM Children's Hospital and Burlington City Arts that dates back to 1994—features a team of about 35 volunteers who are ready to visit the hospital every day throughout the year, to help bring out the creative side of every child. Whether the art happens in a chemotherapy infusion bay, the inpatient unit, or the waiting room, children enjoy moments where they can forget what brought them in for treatment, and help put them on the path to recovery. Patients exhibit their artwork in the hospital and community venues, sharing the art of healing far and wide.

Community Rallies Behind Santa Claus

Santa Claus himself made a dramatic entrance at UVM Children's Hospital a few weeks before Christmas this year, circling the building in a helicopter before coming inside to visit with children gathered to see him. U.S. Customs and Border Protection provided the flight and helped Santa with his multiple red wagons filled with all manner of toys, which came

courtesy of the Target store in Plattsburgh, NY. Now in its 12th year, the event is a perennial favorite. "Helicopter Santa provides a welcome distraction to patients that are hospitalized during the holiday season," says Adam Fortune, a social worker at the UVM Children's Hospital who helps to organize the event. "It also provides a little normalcy for patients who if they were not hospitalized might be seeing Santa in their communities."



therapy or surgery to bring their physical body in line with how they see themselves. Beyond those two examples are a spectrum of treatment options that the team is equipped to handle. The program has pulled together a network of specialists well-versed in the needs of gender variant and transgender youth, and the group meets twice annually to share new knowledge and best practices. Mehringer and Erica Gibson, M.D., are leading a workshop at a national conference this year to educate providers about how to provide gender affirming services for trans youth

in rural and under-resourced areas. The Transgender Youth Program Advisory Council—an all-volunteer group comprised of patients, families, and children's hospital staff—has been key to the program's success. The council has provided leadership in an effort to make the medical center's electronic health record system more inclusive by allowing patients to designate their preferred name and identified gender. Their work is leading to national recognition: an abstract on creating opportunities for

collaborative care for transgender youth and families has been accepted for presentation at an international meeting in June.

In the future, the Transgender Youth Program hopes to offer on-site support groups or half-day events for families, says Emery.

"The visibility of the program helps families and especially the youth population know that they can get the services they need in a safe way," she says. "I like to think we create some hope." ■



2017 YEAR IN GIVING

Recognizing Local Talent, Outstanding Patient Care

From left to right: UVM Foundation President and CEO Shane Jacobson; Larner College of Medicine Dean Rick Morin, M.D.; Kenneth Sartorelli, M.D.; Department of Pediatrics Chair Lewis First, M.D.; UVM President Tom Sullivan, J.D.

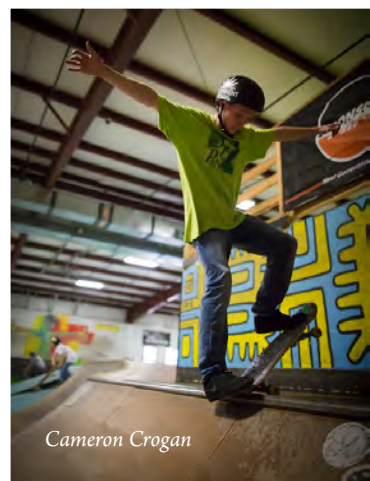
THE SURGEON-IN-CHIEF at the UVM Children's Hospital received one of the highest honors bestowed by the University of Vermont when he became the inaugural Green and Gold Professor of Pediatric Surgery in the spring of 2017.

The endowed professorship was established in 2013 through the generosity of faculty in the Department of Surgery, who collectively established 14 Green and Gold Professorships in each of their divisions to demonstrate their high regard for resident and medical student training, research and innovation as well as patient care. Sartorelli, a professor in the Department of Pediatrics and the

Department of Surgery at the Larner College of Medicine as well as division chief of pediatric surgery, has been serving patients at the UVM Children's Hospital since 1995. A native Vermonter from Barre, Dr. Sartorelli received his undergraduate degree in zoology from the University of Vermont in 1982 and his medical degree from UVM in 1987. He completed residencies at UVM and at the University of Colorado Health Sciences Center/Denver Children's Hospital. This professorship will provide Dr. Sartorelli with endowed financial support to advance patient care and education in pediatric surgery. ■

Beating the Odds

When 14 year-old Cameron Crogan was transported to the UVM Children's Hospital with life-threatening injuries after a dirt bike accident, his family was relieved to find pediatric surgeon Kenneth Sartorelli, M.D., at their side within ten minutes. Sartorelli had cared for Cameron's brother, Noah, over a number of years, and the deep rapport he built through that challenging situation. Now for a second time, Sartorelli changed their lives: After a five-hour surgery, Cameron beat the odds to survive, thanks to the incredible team. "Dr. Sartorelli, Dr. Silverman, and the ICU nurse, Carol, I feel like I am loved by them," says Cameron. "It's more like a family rather than them being my doctors."



Cameron Crogan



Gala Save the Date
SEPTEMBER 8TH
2018

The University of Vermont Medical Center Gala to benefit The University of Vermont Children's Hospital

Bandits Support The UVM Children's Hospital

When the Big Change Roundup kicks off in January, Russ Clark gathers his posse of bandits and gets to work, bringing in thousands of dollars worth of coins to benefit the UVM Children's Hospital. Through his family's truck sales and service business, Clark's Truck Center in Jericho, VT, and Plattsburgh, NY, Clark collects change with the help of friends, employees and customers. Last year, Clark brought in \$13,220 in coins, and since 2009, he and his posse have



families receive from community members who donate spare change to the cause. This year, the roundup set a record netting over \$368,000.

raised a total of \$53,000. As the largest signature fundraising event for the children's hospital, the Big Change Roundup highlights the deep support pediatric patients and their



Fiscal Year 2017 Total Giving **\$1,710,335**

Campaign for Endowed Chair

In May of 2017, the University of Vermont recognized Lewis First, M.D., with one of its highest faculty honors: The George V. Kidder Outstanding Faculty Award for "excellence in teaching and extraordinary contributions to the enrichment of campus life." First has served UVM as a professor and chair of the Department of Pediatrics and chief of the UVM Children's Hospital for nearly 25 years, contributing to education and patient care in countless ways. As one of the longest-standing pediatric department chairs in the country, he is the recipient of more than 60 awards and honors.



The University of Vermont seeks to endow a chair of pediatrics to enhance and support the work Dr. First is doing as chair. A \$3 million gift for a named chair in pediatrics will support the teaching, research, public service, and scholarly activity of the officer holder, providing resources that can help elevate and enrich the department into the future.

Children's Miracle Network Hospitals

Children's Miracle Network Hospitals, a non-profit organization that raises funds and awareness for 170 pediatric hospitals nationwide, helps to ensure that

children faced with pediatric illness or injury have the best care possible. Here in Vermont, where the UVM Children's Hospital is the only full service children's hospital in the state of Vermont and northern New



York, the community has rallied behind the cause in a multitude of ways, including corporate partner campaigns, dance marathons in partnership with three area colleges and universities, and the Extra Life gaming marathon, through which community members sponsor gamers for an epic 24 hours of play. One hundred percent of the funds raised stay local, making a real difference in the lives of children and families.

Pediatric Emergency Care Space

Philanthropic efforts are underway to create a designated pediatric emergency department space at the UVM Medical Center. The staffing plan includes a full slate of physicians, nurses and health professionals providing care 12 hours per day, 365 days per year, to meet the emergent needs of this population. The space is envisioned as one that puts the child's comfort and safety at the center, while providing ample space for family members.

GENERAL PEDIATRICS DIVISIONS AND PROGRAMS

Pediatric Primary Care

**ACADEMIC
GENERAL PEDIATRIC
DIVISION CHIEF
JERRY LARRABEE,
M.D.**

**PRIMARY CARE
DIVISION CHIEF
STANLEY
WEINBERGER, M.D.**

Pediatric Primary Care is a nationally recognized comprehensive, family-centered medical home for a diverse population of children and adolescents. This year we added three new faculty: Matt Saia, M.D., Michelle Shepard, M.D., and Libby McDonald, PNP. A faculty of 17 are situated across two sites in Burlington and Williston. All faculty engage in teaching and hosting family medicine and psychiatry residents, and Larner College of Medicine clerkship students, as well as teach pediatric residents.



In addition to managing five school-based health clinics in partnership with Burlington School District, Pediatric Primary Care will also be helping to provide care in the new Winooski school-based health clinic, started in part through the advocacy of one of our pediatric residents, Anna Zuckerman, M.D. The Pediatric New American Clinic, directed by Andrea Green, M.D., provides care for all new pediatric refugees in Vermont. Dr. Green also runs the New American Safety Day and mentored the Burlington High School International Club as they developed the nationally recognized “All Are Welcome” symbol. She serves on the American Academy of Pediatrics Council on Community Pediatrics Executive Board and is co-authoring the Immigrant Policy Statement.

This past year, we started screening for food insecurity, economic stress and parental depression, and partnered with the Vermont Department of Health on an innovative and successful “Connecting Food and Health” grant to provide prescriptions for free fruits and vegetables to families with food insecurity.

Quality Initiatives

- Stanley Weinberger, M.D., and Barb Frankowski, M.D., are the Vermont Child Health Improvement Program (VCHIP) faculty lead for this year’s VCHIP Child Health Advances Measured in Practice (CHAMP) quality improvement projects addressing screening for food insecurity and parental depression.

- Pediatric Primary Care saw a 10 percent increase in the percentage of children receiving appropriate developmental screening through efforts with VCHIP.

Recent Publications and Grants

- Nelson, EW. Confronting the firearm injury plague. *Pediatrics* 2017;140(1):e2017300
- Jerry Larrabee, M.D., received a Frymoyer grant for developing a curriculum and documentary on “Disparities in Health Care in Vermont.”
- Weinberger S, Green A, Harder V. “Care Conferences and Shared Care Planning in Refugee and Non-Refugee Children and Youth with Special Health Care Needs: Do They Decrease Unplanned Visits?” Poster presentation at American Pediatric Association Region 1 meeting, 2017.

Adolescent Medicine

**DIVISION CHIEF
ERICA GIBSON, M.D.**

Erica Gibson, M.D., continues to provide adolescent medicine specialty care in the outpatient and inpatient settings as well as some adolescent primary care. Some of the specialty consult topics she addresses include sexual and reproductive health, eating disorders, menstrual abnormalities, polycystic ovary syndrome and the health care needs of LGBTQ youth. She has also worked with other departments to create inpatient guidelines for the management of abnormal uterine bleeding and medical stabilization of patients with eating disorders. Her goal in caring for adolescents is to provide optimal clinical care while respecting the newly emerging independence of young adults in the context of the supportive framework of family and community.

Dr. Gibson is working with the Vermont Child Health Improvement Program and the Vermont Department of Health on a variety of grants addressing teen pregnancy prevention, prescription opioid use prevention, adolescent well visits and youth advocacy. She continues to serve as a member of the UVM Children’s Hospital Transgender Youth Clinic Advisory Committee, the Vermont Department of Health Reproductive Health Workgroup and the Vermont Sex Education Stakeholders Workgroup. On the national level she was recently elected to the American Academy of Pediatrics Executive Committee for the Council on School Health. She continues to serve as a member of the Sexual and Reproductive Health Committee for the Society for Adolescent Health and Medicine, and also serves as faculty for the Physicians for Reproductive Health Adolescent Sexual and Reproductive Health Education Project.

Child Abuse Program

**PROGRAM
DIRECTOR
JOSEPH HAGAN,
M.D.**

The Pediatric Forensic Nurse Examiners (FNE) and ChildSafe Programs coordinate to provide comprehensive medical services for child victims of physical abuse, sexual abuse, medical child abuse, emotional abuse and neglect.

ChildSafe Clinic is staffed by pediatricians Karyn Patno, M.D., F.A.A.P., and Joseph Hagan, M.D., F.A.A.P. Clinic directors are also available at any time for consultation through Provider Access Services. Pediatric FNE services are accessed via Provider Access Services or through the UVM Medical Center Emergency Department and are available at any time for consultation. The ChildSafe clinicians and Pediatric FNE nurses work closely with community partners including children’s advocacy centers, law enforcement, the Vermont Department for Children and Families, and others to provide high-quality, compassionate, and coordinated care to children who have been victims of abuse, and their families. Pediatric FNEs host a monthly empaneled child protection team meeting for UVM Children’s Hospital staff and interested community partners. They are recognized subject matter experts and teach a biennial Pediatric Sexual Assault Nurse Examiner Program for nurses in New England.

Cardiology

**DIVISION CHIEF
SCOTT YEAGER,
M.D.**

The Division of Pediatric Cardiology provides a full range of clinical services, including fetal diagnosis, outpatient and inpatient management of congenital and acquired heart abnormalities, outreach clinics, and diagnostic and interventional catheterization.

The division participates in a variety of quality initiatives. Jonathan Flyer, M.D., co-directs a regional evaluation of current practices in the management of aortopathies. Nancy Drucker, M.D., works with the Vermont Child Health Improvement Program on projects addressing assessment, documentation and intervention in childhood obesity, and on programs for transitioning adolescents from pediatric to adult services. Niels Giddins, M.D., is coordinating with a regional group creating a pacemaker registry and monitoring service throughout New England. The division is beginning a quality project to increase patient and physician compliance with national cholesterol screening guidelines.



JONATHAN FLYER, M.D. AND RESIDENT HILLARY ANDERSON, M.D.

Pediatric Cardiology is involved in a regional clinical study titled “A cross sectional study of dyslipidemia among adults with congenital heart disease,” and is recruiting patients for a second research initiative, “Living With Congenital Aortic Stenosis: Exercise Restriction, Patterns of Adherence, and Quality of Life.” Scott Yeager, M.D., was a co-author on “Cine clips in the prenatal diagnosis of major congenital heart disease,” presented at the Society for Maternal Fetal Medicine meetings in January of 2017. The group hosted the regional conference of the New England Congenital Cardiology Association in Manchester, Vermont in October of 2017.

Developmental Behavioral Pediatrics

**DIVISION CHIEF
STEPHEN
CONTOMPASIS,
M.D.**

The division supports both clinical services and leadership training for health professionals. Statewide developmental pediatrics services are provided through a child development clinic supported by the Vermont Department of Health Children with Special Health Needs Program. The program also funds the Autism Assessment Clinic, led by Jeremiah Dickerson, M.D., at the Vermont Center for Children, Youth,

and Families, as a diagnostic clinic for Vermont children covered by Medicaid. The division continues to collaborate with other units at UVM (now designated as a “Special Olympics College”) and with the Vermont Department of Health to address the health of people with intellectual and developmental disabilities.

Recent Publications

- Contompasis, SH. Cerebral Palsy. In Schwartz, MW et al *The 5-Minute Pediatric Consult, 8th edition*, (In press) Philadelphia PA, July 2017
- Smith P, Acharya K, Contompasis SH. *Transition to Adult Medical Care*, in *Developmental and Behavioral Pediatrics*, 2nd edition manual, Voigt RG, Macias MM, Myers SM, Tapia CD editors, American Academy of Pediatrics, 2018.

Endocrinology

**DIVISION CHIEF
PAUL ZIMAKAS,
M.D.**

The Division of Pediatric Endocrinology provides ambulatory and inpatient care for patients with a variety of complex endocrine disorders. Using a family-centered approach, patients receive the highest quality of care from a multidisciplinary team consisting of physicians, certified diabetes educators, an endocrine nurse, a pediatric nutritionist, a social worker and a pediatric psychologist.

The Pediatric Diabetes Clinic is recognized by the American Diabetes Association as a center of diabetes education. The endocrine division also provides the Transgender Youth Program to support gender variant youth and their families. Division endocrinologists are consultants to the Vermont Department of Health Newborn Screening Advisory Committee, working to develop, expand and maintain guidelines for screening of congenital endocrine disorders.

In collaboration with the Vermont Child Health Improvement Program, this program has developed a comprehensive database registry for patients with diabetes mellitus, ensuring that quality of care standards are being met. The collaboration has produced several quality improvement projects, such as improving influenza vaccination rates as well as adherence with the recommended complication-screening guidelines, screening and counseling regarding smoke exposure in children with diabetes, and further improving the transition of patients from pediatric to adult endocrine care.

The division also provides clinical educational experiences for pediatric residents, adult endocrinology fellows, and reproductive-endocrinology fellows. Paul Zimakas, M.D., lectures in several courses in the Vermont Integrated Curriculum. Martina Drawdy, M.D., is on the Medical Student Admissions Committee.

Gastroenterology, Hepatology and Nutrition

**DIVISION CHIEF
MICHAEL D'AMICO,
M.D.**

The Division of Pediatric Gastroenterology, Hepatology and Nutrition provides care for children with a variety of disorders of the GI tract, liver and pancreas, as well as problems with nutrition and growth, obesity, feeding, and lipid disorders. Michael D'Amico, M.D., heads the Healthy Living Program, a weight management clinic for overweight children and adolescents, and he co-directs the Pediatric AeroDigestive Program. The department is very active in research and clinical care of cystic fibrosis and inflammatory bowel disease, hunger prevention, and medical student and resident training initiatives. Jill Sullivan, M.D., is co-director of the Pediatric Cystic Fibrosis Program and is the site leader for ImproveCareNow, an international, multi-centered collaborative chronic care network focusing on Crohn's disease and ulcerative colitis in children and adolescents, which was founded

PAMELA PUTHOOR, M.D.



and is directed by the division's Richard Colletti, M.D. One of the premiere quality improvement initiatives in the country, it has received numerous prestigious awards. Pamela Puthoor, M.D., works with a consortium of providers and community leaders to improve the care of our local refugee population. She also works with local agencies to prevent childhood hunger, and develops teaching curricula at the medical school. Our nursing staff remains involved in nursing education, particularly with the Vermont School Nurses Association.

Genetics and Dysmorphology

DIVISION CHIEF
LEAH BURKE, M.D.

The University of Vermont Medical Center Clinical Genetics Program provides genetic and metabolic services, and remains committed to staying abreast of the rapid changes in genetics and genomics. Our members are involved in the education of medical students, residents and fellows through formal lectures and clinical clerkships.

In August of 2017, the program welcomed Robert Wildin, M.D., a clinical geneticist with molecular genomics expertise. He provides clinical care as well as supports and helps to develop the Genomic Medicine Laboratory through the Department of Pathology and Laboratory Medicine.

Dr. Burke continues to collaborate with the Vermont Child Health Improvement Program on a quality improvement project to improve the transition of children with chronic conditions. We established standardized communication, documented in PRISM, regarding dietary and medication changes to patients with metabolic conditions. This was done to help conform to standards developed for children and adults with phenylketonuria (PKU). As a member of the executive committee of the Council on Genetics for the American Academy of Pediatrics, Dr. Burke helps to develop and revise clinical practice guidelines for the care of children and adolescents with genetic conditions. Under the auspices of the New England Genetics Collaborative, Dr. Burke continues to help develop the Genetics Education Materials for School Success (GEMSS) website to provide information about genetic conditions to teachers and school personnel. The site is being adapted for medical care providers. Through a collaborative effort between the New England Regional Genetics Network and the Weissman Institute, Dr. Burke acts as a member of the core faculty in Project ECHO on their Complex Integrated Pediatrics Program by providing didactic education and case-based learning for practitioners.

DIVISION CHIEF
ALAN HOMANS,
M.D.

Hematology/Oncology

The Pediatric Hematology/Oncology Program provides comprehensive care in the inpatient and outpatient setting for a full range of pediatric oncologic and hematologic disorders. The division is also active in basic and translational science research as well as projects focused on clinical outcomes and quality of life. Jessica Heath, M.D., is working with the Children's Oncology Group (COG) on a retrospective study examining chemotherapy-related toxicities differentially experienced by adolescents and young adults with leukemia, with support from a grant from the Adolescent and Young Adult Committee of the COG. In collaboration with Maine Medical Center and Albany Medical Center, Dr. Heath has also been working on a survey-based study examining the role of the "end of therapy" celebration in mediating patient and parent anxiety at the end of planned chemo/radiation therapy.

Recent Highlights

- Alan Homans, M.D., is involved with a research project through the Consortium for New England Childhood Cancer Survivors (CONNECCS) to develop more consensus regarding the approach to specific pediatric malignancy issues.
- Jessica Heath, M.D., received funding from the Pediatric Cancer Research Foundation and the Keegan Bradley Charity Golf Classic to study mechanisms behind CALM-AF10 mediated leukemogenesis, with a focus on the identification of potential novel therapeutic targets. Multiple grant applications are pending for this project, including a K08.
- Jessica Heath, M.D., is working with collaborators at the University of Vermont Cancer Center on a project to define a common leukemic oncofetal epigenetic signature, with support from a Waldron Foundation grant.

Infectious Disease

DIVISION CHIEF
WILLIAM RASZKA,
M.D.

The Division of Pediatric Immunology and Infectious Disease provides inpatient, outpatient, and telephone consultation services for acute and chronic infectious disease issues. The service is very active at all levels of medical student and resident education, as well as in infection control policy design, surveillance, and resource utilization. The service provides consultation to the state legislature and testifies on a variety of issues including vaccine safety and vaccine requirements for school entry.

Benjamin Lee, M.D., conducts vaccine research with the University of Vermont Vaccine Testing Center, where he has an active research program in rotavirus, the leading cause of infectious diarrhea and resulting death due to dehydration among children worldwide. Dr. Lee is principal investigator on a rotavirus vaccine immunogenicity trial currently underway in Dhaka, Bangladesh. Closer to home, he is developing laboratory assays to identify children who have become immune to rotavirus following vaccination, and is working to characterize the human B lymphocyte response to rotavirus. This work may ultimately lead to new strategies and tools to help reduce the burden of rotavirus diarrhea among children around the world.

Pediatric Critical Care Medicine

DIVISION CHIEF
AMELIA HOPKINS,
M.D.

The Pediatric Critical Care Medicine Division, staffed by five board-certified pediatric intensivists, provides care for children with life-threatening illnesses or injuries 24 hours a day. In addition to clinical care, division members participate in multi-center research projects, engage in medical student and resident education, present Continuing Medical Education in local, national, and international venues, and are active in advocacy efforts to promote the health and well-being of children. Barry Heath, M.D., continues to work with ThinkMD

to develop solutions for the shortage of healthcare professionals around the world. Iris Toedt-Pingel, M.D., continues to lead the division in the multi-center NEAR4kids trial that aims to improve safety and standardization of pediatric intubations. She also runs simulation programs for the division. Elizabeth Ulano, M.D., draws on her expertise in neurocritical care to help revise the traumatic brain death protocols as well as several other protocols and manuals for the division. Rebecca Bell, M.D., runs quality improvement initiatives, and is active in advocacy efforts locally and nationally. Amelia Hopkins, M.D., is the associate program director for the pediatric residency program. The Virtual PICU Systems, LLC (VPS) database has continued to demonstrate that for a PICU our size, we consistently take excellent care of very ill children with a lower than expected mortality rate.

Pediatric Hospitalist Medicine

**DIVISION CHIEF
KAREN LEONARD,
M.D.**

The Pediatric Hospitalist Program, which includes eleven full- and part-time pediatric hospitalists, provides hospital-based care 24 hours a day, seven days a week for pediatric inpatients, newborns in the newborn nursery, pediatric patients in the emergency room, and inpatient consultations for surgical and sub-specialist services. Starting in 2017, we cover the newborn nursery, neonatal care, pediatric inpatients and pediatric consultations in the emergency room at the University of Vermont Health Network Champlain Valley Physicians Hospital.

All division members participated in a quality improvement project that successfully increased safe direct admissions to our pediatric floor. Under the leadership of Karin Gray, M.D., our mother-baby unit established a robust program using donor human milk in our newborn unit, with research into its success ongoing. Valerie Riss, M.D., collaborated with our respiratory therapy team to initiate the use of high flow nasal cannula on our pediatric floor. We have continued our innovative work with Family-Centered Rounds, a unique model that invites parents to be active participants in their child's care. Molly Moore, M.D., received a Teaching Academy grant to develop a Global Health Scholar Track for medical students. Molly Rideout, M.D., continues her course for fourth-year medical students during a week-long Pediatric Boot Camp.

Recent Highlights

- Leigh-Anne Cioffredi, M.D., M.P.H., received a University of Vermont Medical Center Innovation Grant for a project on "Assessing opportunities for improving care of adolescents and young adults with substance misuse in the Emergency Department and Inpatient settings."
- Several hospitalists presented workshops or posters at national meetings, including the annual Pediatric Academic Societies Meeting and the Pediatric Hospital Medicine Meeting.

Neonatology

**DIVISION CHIEF
CHARLES
MERCIER, M.D.**

The Division of Neonatal Perinatal Medicine provides medical care to premature and sick newborns, including inpatient intensive and convalescent care, acute patient transport, and outpatient prenatal medical follow-up and neurodevelopmental surveillance. The 29-bed NICU is the only level III unit in the state. The NICU is attended by six board certified neonatologists, three neonatal perinatal medicine fellows, and 10 advanced practice providers including eight neonatal nurse practitioners and two physician assistants.

The neonatal perinatal subspecialty fellowship training program is directed by Deirdre O'Reilly, M.D., M.P.H. This year the program was approved for three fellow positions. We welcomed previous pediatric resident Adrienne Pahl, M.D., who joins Delia Horn, M.D., and Jackie Grev, M.D.

Scholarly activities are critical to the division's mission. Roger Soll, M.D., coordinating editor of the Neonatal Collaborative Review Group and president and director of clinical trials at Vermont Oxford Network (VON), oversees fellow-authored Cochrane reviews, and trials participation in our NICU service. VON Global Health Director Danielle Ehret, M.D., M.P.H., Leslie Young, M.D., Deidre O'Reilly, M.D., M.P.H., and Anne Johnston, M.D., also mentor fellows in their research.

The division participates in VON NICQ and iNICQ quality improvement collaboratives. The multidisciplinary VON NICQ quality collaborative work group aims to reduce the incidence of chronic lung disease, promote antibiotic stewardship, and improve the care of extremely low birth weight infants. This last year saw notable gains in antibiotic stewardship, and attention to practice-based standards for infants such as delayed cord clamping, optimal timing for MRIs for infants receiving therapeutic hypothermia, and parent engagement in care.

Our focus on excellence and quality in health care does not end at hospital discharge. The NeoMedical and Developmental Follow-Up Clinics transition care from the inpatient setting to the outpatient setting. Jerilyn Metayer, R.N., Susan White, F.N.P., Carol Hassler, M.D., Deidre O'Reilly, M.D., and Anne Johnston, M.D., are the core team of follow-up professionals.

Nephrology

**DIVISION CHIEF
LIZ HUNT, M.D.**

The Division of Pediatric Nephrology treats children with kidney disease, hypertension, incontinence, genitourinary malformations, and acute kidney injury, and manages pediatric kidney transplant patients. The Spina Bifida Coordinated Care Clinic continues to be organized out of our division by Allison Fortuna, R.N. We are expanding apheresis services, and with the dialysis and apheresis nursing team, we are providing regular red blood cell exchanges.

The division continues to participate in the North American Pediatric Renal Trials and Cooperative Studies group. Another quality improvement project focuses on improving the tracking of adherence with national recommendations for monitoring of patients with chronic kidney disease, and improving the process for transitioning from pediatric to adult care. We have expanded our involvement in medical student education this year, and Sarah Twichell, M.D., won the pediatric subspecialist of the year award from the pediatric residents.

Recent Publications and Presentations

- Twichell SA, Rea CJ, Melvin P, Capraro AJ, Mandel JC, Ferguson MA, Nigrin DJ, Mandl KD, Graham D, Zachariah JP. The effect of an electronic health record-based tool on abnormal pediatric blood pressure recognition. *Congenit Heart Dis.* 2017 July;12(4):484-490. doi:10.1111/chd.12469
- Twichell SA, Fiascone J, Gupta M, Prendergast M, Rodig N, Hansen A. A Regional Evaluation of Survival of Infants with End-Stage Renal Disease. *Neonatology.* 2017; 112(1):73-79
- Twichell, SA, Hunt, EAK, Martz, K, Somers, MJG. Effects of adult erythropoietin dosing regimens on transfusion in pediatric dialysis patients: findings from North American Pediatric Renal Trials and Collaborative Studies (NAPRTCS). Poster presented at the American Society of Nephrology meeting November 4, 2017.

Palliative Medicine

**DIVISION CHIEF
ROBERT
GRAMLING, M.D.**

Since the establishment of Palliative Medicine as an academic division within the Department of Family Medicine in 2016, it has been growing in clinical services, teaching programs, University of Vermont Health Network initiatives and research productivity. The core group includes five physicians, three nurse

practitioners, and three nurses with a closely affiliated chaplain and social worker. During this past year, our team was consulted 1,340 times to care for seriously ill hospitalized adults and children. We also began offering TeleConsult follow-up home visits, as well as outpatient consultations at Milton Family Practice. Our teaching programs include inpatient observerships for first-year medical and nursing students, elective clinical rotations for medical students and residents, and a required 40-hour palliative medicine course for medical students. We're preparing to launch a multi-disciplinary fellowship. A network-wide communication coaching initiative has so far trained 30 clinicians to teach VitalTalk's evidence-based "Mastering Tough Conversations" throughout the UVM Health Network from 2018-2020. In the fall of 2017, the division established the Vermont Conversation Research Lab to understand and promote high quality communication in serious illness.

Recent Publications

- Gramling R, Stanek S, Han PK, Duberstein P, Quill TE, Alexander S, Anderson WG, Ladwig S, Norton SA. Distress due to Prognostic Uncertainty in Palliative Care: Frequency, Distribution and Outcomes Among Hospitalized Patients with Advanced Cancer. *Journal of Palliative Medicine*. 2017. Sept 18 (epub ahead of print).
- Gramling R, Fiscella K, Xing G, Hoerger M, Duberstein P, Plumb S, Mohile S, Fenton JJ, Tancredi DJ, Kravitz RL, Epstein RM. Determinants of Patient-Oncologist Prognostic Discordance in Advanced Cancer. *JAMA Oncology*. 2016 Nov 1;2(11):1421-1426.
- Epstein R, Duberstein P, Fenton JJ, Fiscella K, Hoerger M, Tancredi DJ, Xing G, Gramling R, Mohile S, Franks P, Kaesberg P, Plumb S, Cipri CS, Street RL, Shields CG, Back AL, Butow P, Walczak A, Tattersall M, Venuti A, Sullivan P, Robinson M, Hoh B, Lewis L, Kravitz RL. A Cluster Randomized Trial of a Patient-Centered Communication Intervention in Advanced Cancer: The Values and Options in Cancer Care (VOICE) Study. *JAMA Oncology*. 2017. Jan 1;3(1):92-100.

Pulmonology

**DIVISION CHIEF
THOMAS LAHIRI,
M.D.**

The Pediatric Pulmonology Division provides outpatient and inpatient care to children with a variety of respiratory and airway disorders. Our cystic fibrosis (CF) program is accredited by the CF Foundation and has received the Quality Care Award. The division participates in several multidisciplinary clinics to treat aerodigestive disorders, neuromuscular diseases, and patients with tracheostomies and those who require non-invasive and invasive assisted mechanical ventilation.

The Pediatric CF Program is one of the top centers in the United States for pediatric lung function and for meeting recommended guidelines as reported in the national CF Foundation (CFF) Patient Registry. Several quality improvement initiatives to improve CF pulmonary and nutritional outcomes, asthma and tracheostomy care are in progress. The pulmonology division participates in several multi-center CF clinical research trials as a Therapeutic Development Center as awarded by CFF Therapeutics, Inc., as well as in asthma trials through the American Lung Association in conjunction with the Vermont Lung Center.

Recent Highlights

- Kelly Cowan, M.D., is the principal investigator for the NIH-funded IDeA States Clinical Trials Network and serves as a faculty member in the Vaccine Testing Center.
- Keith Robinson, M.D., serves on the American Lung Association of Northern New England board and is the UVM Children's Hospital Quality Director.
- Thomas Lahiri, M.D., is president of the Pediatric Division Directors Association through the American Thoracic Society, and was an invited speaker at the 1st International Meeting of the Pediatric Airway Teams in Genoa, Italy.

- Lauren Faricy, M.D., joined the division this year. She was invited to give an oral presentation at the North American Cystic Fibrosis Conference in Indianapolis, Indiana.

Publications and Abstracts

- May TL, Gifford AH, Lahiri T, Black A, Trang J, Cornell AG, Gonzalez K, Morin S, Napier M, Duarte C, Zuckerman JB. Complications of long and intermediate term venous catheters in cystic fibrosis patients: a multicenter study. *J Cyst Fibros* 2017 (In Press) PMID 28579360
- Faricy LE. Lower aerobic capacity and physical activity in Hispanics with cystic fibrosis. *Pediatr Pulmonol* S47: 2017

Rheumatology

**DIVISION CHIEF
MATTHEW
HOLLANDER, M.D.**

The Division of Pediatric Rheumatology provides subspecialty care to children with a variety of rheumatic diseases, including juvenile idiopathic arthritis, juvenile dermatomyositis, lupus, scleroderma, vasculitis and other autoimmune disorders. With the retirement of Leslie Abramson, M.D., this year, Matthew Hollander, M.D., has assumed the role of division chief. He brings to UVM a background of private practice and a reinvigorated commitment to coordinate care of patients with members of their healthcare team.

Quality improvement is core to our mission, with a goal to exceed expectations. Such efforts include ensuring patients who require follow-up appointments are contacted proactively, identifying potential barriers for complex scheduling, and increasing the number of patients who access their medical information through the electronic medical record portal.



MATTHEW HOLLANDER, M.D.

The division recruits patients for national study groups and cohorts. These activities help advance understanding of what treatments are most effective for childhood arthritis, facilitate long-term medication safety surveillance, and help our division collaborate with centers across the country to share lessons and provide state-of-the-art care.

Dr. Hollander is a member of the UVM Children's Hospital Quality Council, American Academy of Pediatrics, Childhood Arthritis and Rheumatology Research Alliance and is a researcher for the Vermont Child Health Improvement Program.

Recent Publications

Zhao Y, Wu EY, Oliver MS, Cooper AM, Basiaga ML, Vora SS, Lee TC, Fox E, Amarilyo G, Stern SM, Dvergsten JA, Haines KA, Rouster-Stevens KA, Onel KB, Cherian J, Hausmann JS, Miettunen P, Cellucci T, Nuruzzaman F, Taneja A, Barron KS, Hollander MC, Lapidus SK, Li SC, Ozen S, Girschick H, Laxer RM, Dedeoglu F, Hedrich CM, Ferguson PJ, and Cno Crmo study group the CARRA SVARD subcommittee. "Consensus Treatment Plans for Chronic Nonbacterial Osteomyelitis Refractory to Nonsteroidal Anti-Inflammatory Drugs and/or with Active Spinal Lesions." *Arthritis Care & Research*. Nov 7, 2017.

OTHER PEDIATRIC SPECIALTIES

Anesthesiology

The Department of Anesthesiology Division of Pediatrics provides anesthetic care to children of all ages and medical complexities. In the pediatric preoperative area we continue to cultivate a family-friendly atmosphere with nurses who are truly devoted to caring for kids. Our child-life specialists work with nurses to formulate individualized perioperative plans focusing on emotional, behavioral and social needs. Our goal is to make each child's visit to the O.R. the most positive experience possible.

The Comfort Zone, our pediatric pre-procedure area, continues to thrive under the medical direction of Monika Modlinski, M.D. In a July 2017 letter to the editor of *Anesthesia & Analgesia*, Dr. Modlinski describes the Comfort Zone as an "outpatient Pediatric Sedation Home" that employs child- and family-centered care to reduce "patient and family anxiety."

This February we instituted a pediatric anesthesia call team available to care for all children under the age of one as well as many children under the age of three at any hour of the day or night. Our team is also available 24/7 to care for our most complex pediatric patients under the age of six.

Recent Highlights

- Melissa Davidson, M.D., was named Associate Dean for Graduate Medical Education/Designated Institutional Official for UVM Medical Center in March of 2017.
- Emily Stebbins, M.D., was named anesthesiology residency program director in September of 2017.
- Robert Williams, M.D., became a contributing author to the 9th edition of *Smith's Anesthesia for Infants and Children*.
- Kevin Abnet, M.D., led a group of anesthesiologist attending physicians and residents to Guatemala on an international medical mission trip.

Dermatology

The newly created Division of Pediatric Dermatology serves children with a variety of skin conditions ranging from common complaints of eczema, hemangiomas, moles and acne to rarer diseases such as ichthyoses, neurocutaneous disorders, and vascular malformations. Procedural services available include pulsed dye laser treatment of vascular birthmarks, simple excisions, and diagnostic skin biopsies. Dermatology and pediatric residents are exposed to outpatient and inpatient pediatric dermatologic issues and didactics.

**DIVISION CHIEF
ANN LAWRENCE,
D.O.**

**DIVISION CHIEF
KEITH MORLEY,
M.D.**

The division works closely with the American Academy of Dermatology in their Camp Discovery program which provides children with chronic skin conditions from around the country an all-expense paid week-long summer camp experience.

Selected Publications

- Morley K, Treat J. Patient Perspectives: What is perioral dermatitis? *Pediatr Dermatol*. 2017;34(5):601-602.
- Peterman CM, Morley KW, Tan JK, Liang, MG. Self-Limited Neonatal Periumbilical Erythema. *Pediatr Dermatol*. 2017; 34(6):730-731.
- Morley KW, Butler LK, MacCormack MA, Tiger JB. Surgical Pearl: The Pinch Stitch. *J Am Acad Dermatol*. 2017; 77(3):e75-e76.

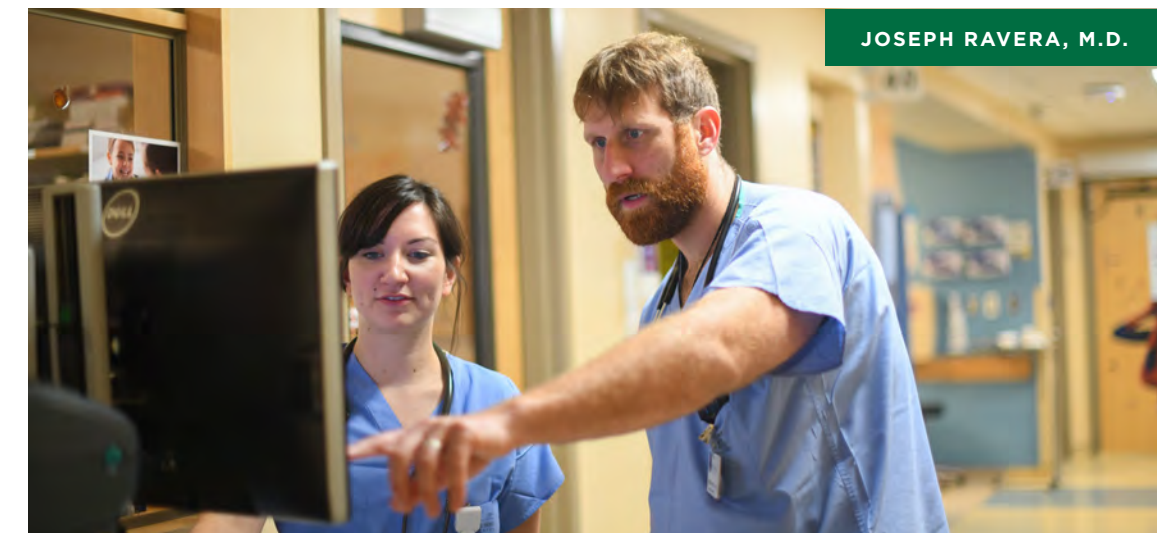
Emergency Medicine

**DIVISION CHIEF
RAMSEY
HERRINGTON, M.D.**

The Pediatric Emergency Department (ED) provides a dedicated space for children, as well as specialized equipment, treatment protocols, and staff focused on child-centered care. A new, larger pediatric-centered space is under development. Joseph Ravera, M.D., has recently joined our medical staff. He is an emergency medicine attending with a sub-specialty in pediatric emergency medicine. In addition to seeing patients clinically, he engages with the hospitalist and pediatric sub-specialist staff around care of children in the ED and supervises and teaches pediatric residents.

Multiple quality improvement projects have been developed in association with the pediatric residency program. Metrics tracked include adherence to the most recent standards of pediatric emergency medical care, the quality of resident and medical education, and assessment of the family experience at the pediatric ED. We're also working with community physicians and those at referring medical centers to improve communication and access to appropriate outpatient follow-up.

The development of the pediatric ED has improved the educational experience of residents, medical students, and ED providers. Pediatric and family medicine residents have the opportunity to focus solely on pediatric emergency medical care during month-long rotations, exposing them to a variety of acute cases from initial presentation to disposition, as well as training from emergency medicine specialists, pediatric hospitalists and specialists, and regular didactics on pediatric emergency care.



JOSEPH RAVERA, M.D.

Neurology

**DIVISION CHIEF
PETER BINGHAM,
M.D.**

The Division of Neurology has continued to grow with the addition of Lisa Anne Rasmussen, M.D., who provides general child neurology care as well as palliative care services in conjunction with the Palliative Care Division of the Family Medicine Department. She joins Peter Bingham, M.D., Bradley Clopton, CNP, Deborah Hirtz, M.D., Gregory Holmes, M.D., and Rodney Scott, M.D.

The neuromuscular clinic now serves over 70 children in northern New York with muscular dystrophy and other neuromuscular conditions. Advocacy opportunities include participation in the LetsGrowKids advocacy organization, and advocating against stigma associated with chronic pain and epilepsy in our state. In addition to laboratory and clinic-based research into epilepsy, other research focuses on play-testing a novel musical toy that may help children with mood dysregulation, and symptom recognition in asthma using spirometer games for children with asthma.

Recent Highlights

- Planned multi-disciplinary clinics with Neonatology Follow-up, Pediatric Oncology, Genetics, and Pediatric Psychology
- Inter-departmental cooperative evaluation with Physiatry to improve services for patients with concussion
- Planned outreach through a Pediatric Neurology clinic at University of Vermont Health Network Champlain Valley Physicians Hospital
- Biofeedback, hypnosis, and guided imagery coaching for patients with chronic pain
- Delivery of a new FDA-approved genetic therapy for spinal muscular atrophy

Orthopedics

**DIVISION CHIEF
JENNIFER LISLE,
M.D.**

The Division of Pediatric Orthopedics provides advanced care for infants, children and adolescents with all types of musculoskeletal problems including bone and joint infections, fractures, hip dysplasia, clubfeet, bone tumors, upper and lower extremity problems, neuromuscular disorders, scoliosis and other orthopedic conditions. The division works closely with other pediatric specialty divisions to provide multidisciplinary care to children with cerebral palsy, myelomeningocele, muscular dystrophy and other neuromuscular disorders. Faculty are involved in research as well as education of medical students and orthopedic surgery residents. As a university hospital, our treatments are backed by research-based expertise, and patients have access to the latest pediatric orthopedic treatments and therapies available. Our physicians are board-certified orthopedic surgeons with additional specialty training in pediatrics.

Pathology

**DIVISION CHIEF
MARCIA WILLS,
M.D.**

The spectrum of diseases in children is significantly different than those affecting adults. Complications of preterm delivery, as well as developmental and metabolic derangements, all require a unique approach to diagnosis, treatment and predictions for recurrence in the family. Pediatric Pathology contributes to these efforts both in the chemistry laboratory, with reference ranges specific for children, as well as in the surgical pathology laboratory, where understanding of human embryology helps to explain anatomic malformations of multiple organs. Careful and thorough autopsy examinations of both fetuses and children can be performed with participation of the pediatric pathologist at family meetings.

Using state-of-the-art molecular testing available through UVM Medical Center's Genomic Medicine Laboratory, we can render a diagnosis specific to the molecular features of a tumor, leading to personalized and innovative therapies. After final diagnosis of a malignant tumor, portions are submitted for studies through the Children's Oncology Group, the world's largest organization devoted exclusively to childhood and adolescent cancer research.

A new full-time pediatric pathologist has joined our faculty beginning July 2018. Marcia L. Wills, M.D., did her pathology training and pediatric pathology and genitourinary fellowships at The Johns Hopkins Hospital. She began her career working in academic institutions in underprivileged areas of the country, and spent many years at the Monroe Carell Children's Hospital at Vanderbilt. Her research interests include mouse pathology as it relates to human diseases, placental pathology, fetal bladder, and pediatric solid tumors.

Psychiatry

**DIVISION CHIEF
JAMES HUDZIAK,
M.D.**

The Vermont Center for Children, Youth, and Families (VCCYF), under the direction of James Hudziak, M.D., is an internationally known Division of Child and Adolescent Psychiatry, and serves the Department of Pediatrics through patient care, training, teaching and research efforts. For this coming year the VCCYF has been approved to double the size of the fellowship program under the direction of David Rettew, M.D. Recruitments are underway for an additional child psychiatrist and family wellness coach. The VCCYF has robust academic research programs in the genetics and neuroplasticity of trauma, Adverse Child Experience research, psychophysiology, multicultural assessment, temperament, epidemiology, and public health. The VCCYF, in partnership with Vermont Child Health Improvement Program, has a novel health promotion, illness prevention, family-based program that serves children from conception to adulthood. The programs exist in the Division of Pediatric Primary Care as well as in the OB clinic to help expectant mothers and families with children achieve optimal health. The VCCYF is also the home of the UVM Wellness Environment, a health promotion and illness prevention program for transitional age youth (college students) that has received national media attention. As the director of the Wellness Environment, Dr. Hudziak received a \$1.8 million grant from the Conrad Hilton Foundation to continue the research component of the program. Dr. Hudziak also received the 2017 American Academy of Child and Adolescent Psychiatry Philips Irving Award for Health Promotion and Prevention. The center had over 30 publications in peer reviewed journals this past academic year.

Psychology

**DIVISION CHIEF
MARLENE MARON,
PH.D.**

The Pediatric Psychology Service cares for children, adolescents, adults and families referred through pediatric specialty clinics, inpatient general and intensive care pediatric units, and community providers. Division members provide a full range of services, including cognitive-behavioral therapies; trauma focused, interpersonal, family, and psychodynamically informed interventions; parent training and guidance; parent-child interaction therapy; mindfulness-based interventions; and psychological intervention for pain management. The department also trains child psychiatry fellows and clinical psychology practicum students.

Recent Highlights

- Specialty clinic support was expanded to include coverage to pediatric hematology/oncology, cystic fibrosis, diabetes, transgender youth, GI and adolescent medicine clinics. A multidisciplinary neurology clinic is under development. Courtney Fleisher, Ph.D., Logan Hegg, Psy.D., Marlene Maron, Ph.D., Tara McCuin, Ph.D., Kimberlee Roy, Ph.D., and Rebecca Ruid, Ph.D., are available to serve patients and provide consultation to staff.

- A youth ambassador program to help children and adolescents newly diagnosed with diabetes explain their diagnosis to peers, teachers, and coaches is in development, spearheaded by Dr. Ruid and intern Sarah Stanger.
- Psychosocial distress screening of families served by pediatric hematology/oncology, cystic fibrosis, diabetes and GI clinics is underway, facilitating referrals and improving access to mental health services.
- Dr. Maron collaborated with Martina Drawdy, M.D., and A. Evan Eyster, M.D., to develop a lecture on the care of transgender and gender nonconforming youth for the Larner College of Medicine's Human Development and Reproduction course. This training will be expanded for faculty and residents in the Department of Obstetrics and Gynecology.
- Services to transition-aged youth and young adults who are hospitalized for infections presumed to be caused by IV drug use were developed, with a quality improvement study underway. Drs. Maron and McQuin presented a poster at the Jeffords Quality Institute Symposium..

Radiology

**DIVISION CHIEF
TIMOTHY HIGGINS,
M.D.**

Pediatric Radiology uses state-of-the-art imaging technology to obtain the highest possible image quality, while maintaining safety for the child. Whenever possible, ultrasound and magnetic resonance imaging are used. An exciting new tool for evaluation of pediatric patients is contrast enhanced ultrasound for the evaluation of liver lesions and vesicoureteral reflux. Education of radiology residents, medical students and residents from other specialties is an important function of the department, as is collaboration in research with other specialties. A review article regarding pediatric sedation and neurotoxicity authored by the radiology and anesthesia departments was recently published in *Pediatric Radiology*, titled "Pediatric Anesthesia and Neurotoxicity: What the Radiologist Needs to Know."



Women's Care and Pediatric Service

**DIRECTOR
LAUREN
TRONSGARD-SCOTT,
R.N., BSN, MSOL**

The Women's Care and Pediatrics professional nursing service line provides patient- and family-centered care along the continuum from birth to adolescence. The nurses are involved in decision making at the bedside as they work with the physician team to ensure the highest care is delivered, with particular focus on quality and safety measures.

Inpatient Pediatric Unit

The Inpatient Pediatric Unit provides skilled nursing care to multiple pediatric specialties. The Patient Centered Report - new this year - allows for seamless communication between registered nurses changing shifts by bringing them into the patient room with family members to complete safety checks and answer questions. Our main quality improvement project focused on food insecurity. In partnership with Hunger Free Vermont, we screen each inpatient family using The Hunger Vital Sign™, a tool that measures families' concerns about and access to food.

Mother Baby Unit

The use of donor human milk on the Mother Baby Unit began in December 2016, in keeping with recommendations of the American Academy of Pediatrics and World Health Organization. It is used as a temporary measure to support a parent's decision to exclusively provide breast milk in instances when a mother's milk is not available or there is a medical indication to supplement the newborn. A multidisciplinary team from the Mother Baby Unit, NICU and the Birthing Center implemented the program.

Neonatal Intensive Care Unit (NICU)

• Human Human Milk Fortification program

The NICU supports the use of exclusive human milk as the safest and best nutrition for our fragile infants. Since an inadequate supply of breast milk can often accompany a premature birth, our NICU offers donor breast milk for all breast-fed infants until mom's milk supply is able to support her infant's nutritional needs. Since infants in the NICU often have higher caloric needs to promote growth and healing, the NICU offers caloric fortifiers that are made of exclusive human milk. This allows our NICU to provide 100 percent human milk nutrition to all of our patients.

• Safe Sleep program

In keeping with current American Academy of Pediatrics guidelines, UVM Children's Hospital recently created a policy to promote safe sleep practice for hospitalized infants and toddlers. A collaborative effort that included Inpatient Pediatrics, NICU, Pediatric ICU, Mother Baby Unit and the ED, this policy addresses appropriate sleep surfaces, the use of blankets and sleep sacks, swaddling, pacifiers, and the presence of extra items within a safe sleep place. Parents are informed about the importance of putting their baby to sleep on his or her back and how to create a safe sleep environment.

PEDIATRIC SURGICAL SPECIALTIES

General Surgery

**DIVISION CHIEF
KENNETH
SARTORELLI, M.D.**

Staffed by two board-certified pediatric surgeons, James Murphy, M.D., and Kenneth Sartorelli, M.D., the Division of Pediatric Surgery provides comprehensive surgical care for children from infancy through early adolescence. The division treats a range of surgical conditions by both open and minimally surgical techniques. We work closely with pediatric anesthesia colleagues to provide surgical care for infants under

regional anesthesia when appropriate, avoiding the need for general anesthesia. The division performs approximately 600 operative procedures annually, and oversees trauma care for injured children in our American College of Surgeons-verified (2017) pediatric level II trauma center.

Neurological Surgery

**DIVISION CHIEF
SUSAN DURHAM,
M.D.**

Pediatric Neurosurgery provides comprehensive, family-centered care in collaboration with specialists in virtually every field of pediatrics. State-of-the-art equipment, including image guidance systems, intraoperative neurophysiologic monitoring, and the latest technologic advances found in major academic medical centers, enhance the safety and effectiveness of neurosurgical treatments.

Pediatric Neurosurgery participates in several multidisciplinary clinics including pediatric neuro-oncology, spina bifida and concussion clinics. Active research projects include a multi-center clinical trial on the surgical treatment of Chiari malformation and the development of clinical guidelines on the treatment of spina bifida. We also participate in the education of undergraduate, graduate and medical students in addition to residents in multiple specialties.

Ophthalmology

**DIVISION CHIEF
SUJATA SINGH,
M.D.**

The Pediatric Ophthalmology and Strabismus Clinic is a new service providing comprehensive ophthalmic evaluations for children, including those who suffer from cortical visual impairment, as well as surgical and non-surgical care for pediatric ophthalmic diseases. With specialized equipment, exam lanes tailored for the pediatric eye exam, and a child-friendly environment, it offers a valuable educational experience for medical students and residents. The clinician-in-training acquires skills in the accurate assessment of a child's vision, the triaging of pediatric ophthalmic conditions, and the relevant communication to the child and family. Additionally, the service offers the opportunity to learn about pediatric ophthalmic surgery. With a central goal to improve access to this subspecialty care, plans include integrating an eye screening clinic with the Pediatric New American Clinic and instituting mobile screening clinics in rural areas. Members of the service will also share their expertise in international vision clinics.

SUJATA SINGH, M.D.



Otolaryngology

**DIVISION CHIEF
RICHARD
HUBBELL, M.D.**

The section of Pediatric Otolaryngology in the Division of Otolaryngology provides comprehensive pediatric otolaryngology care. The section is comprised of two fellowship-trained pediatric otolaryngologists, Richard Hubbell, M.D., who trained under the renowned Dr. Robin Cotton at Cincinnati Children's Hospital, and Heather Herrington, M.D., who completed her training at Boston Children's Hospital. The section is involved in several quality projects, including a multidisciplinary UVM Medical Center initiative to improve the care of children with tracheostomies both in and out of the hospital. The section has implemented a new protocol for children diagnosed with hearing loss and instituted cytomegalovirus (CMV) screening tests for all newborns who do not pass their newborn hearing screen. They are also advocating at the state level for universal newborn CMV screening.

Recent Publications

- Strychowsky JE, Roberson DW, Martin T, Smithers J, Herrington H. Proximal bronchial balloon dilation for embedded distal airway foreign bodies. *Laryngoscope*. 2016 Jul;126(7):1693-5. doi: 10.1002/lary.25680. No abstract available. PMID:26422679
- Herrington H, Adil E, Moritz E, Robson C, Perez-Atayde A, Proctor M, Rahbar R. Update on current evaluation and management of pediatric nasal dermoid. *Laryngoscope*. 2016 Sep;126(9):2151-60. doi: 10.1002/lary.25860.PMID:26891409
- Second Branchial Anomalies. Grohman N, Herrington HC. Invited article in *Operative Techniques in Otolaryngology – Head & Neck Surgery*, 2017 Sep;28(3): 156-60.

Urology

**DIVISION CHIEF
GERALD MINGIN,
M.D.**

Pediatric Urology diagnoses and treats children with a wide range of congenital and acquired conditions involving the genitourinary tracts. The team includes a fellowship-trained, board-certified pediatric urologist supported by the full range of pediatric specialists. Services include a multi-specialty voiding dysfunction clinic (with a special emphasis on children with developmental disabilities such as autism), active participation in the multidisciplinary myelomeningocele clinic, and robotic minimally invasive surgical treatment for routine problems and complex reconstructive procedures. We have a robust relationship with pediatric urology at Children's Hospital of Philadelphia. This includes participation in clinical care conferences and the ability to offer access to world-class expertise for the most complex of urologic conditions.

Recent Publications

- Koyle MA, Butt H, Lorenzo A, Mingin GC, Elder JS, Smith GH. Prolonged urinary retention can and does occur after any type of ureteral reimplantation. *Pediatr Surg Int*. 2017 May;33(5):623-626. doi: 10.1007/s00383-017-4058-7. Epub 2017 Jan 20. PMID: 28108784
- Mingin GC, Heppner TJ, Tykocki NR, Erickson CS, Vizzard MA, Nelson MT. Social stress in mice induces urinary bladder overactivity and increases TRPV1 channel-dependent afferent nerve activity. *Am J Physiol Regul Integr Comp Physiol*. 2015 Sep 15;309(6):R629-38. doi: 10.1152/ajpregu.00013.2015. Epub 2015 Jul 29. PMID: 26224686

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