Special Page 4 Feature

Minimally Invasive and Robotic Surgery Center
Extending innovative techniques to pediatrics

Pediatric Hematology/Oncology Chief
Known for her work on molecular basis of lymphoproliferative disease

In Memoriam
James E. Levin, MD, PhD
The SPRING 2013 issue of Pediatric INSIGHTS

In this issue of Pediatric Insights we provide an overview of the minimally invasive and robotic surgery program at Children’s Hospital of Pittsburgh of UPMC.

In addition:

- Children’s Hospital’s Center for Independence at Children’s Pine Center in Wexford provides interdisciplinary, group-based programs to children and teens with mild to moderate behavioral, developmental, or physical problems.

- Shabaana Khader, PhD, Division of Pediatric Infectious Diseases, has learned that the presence of a certain molecule effectively helps the immune system police tuberculosis of the lungs and prevents it from turning into an active, deadly infection.

- Linda McAllister-Lucas, MD, PhD, widely recognized for her research into the molecular basis of lymphoproliferative disease, is the new chief of the Pediatric Hematology/Oncology Division at Children’s Hospital.

We welcome your feedback, thoughts, and story suggestions. Please share them with one of our physician liaisons, whose contact information you can find on page 3.

To refer a patient to any of Children’s Hospital of Pittsburgh of UPMC’s clinical services, please call our Physician Referral Service at 412-692-PEDS (7337).

Visit the Referring Physicians section of Children’s website at www.chp.edu/physicians.
Children’s Hospital of Pittsburgh of UPMC has established a new Center for Independence, located at Children’s Pine Center in Wexford. The center, which comprises specialists in Behavioral Health, Occupational Therapy (OT), Physical Therapy (PT), and Speech-Language Pathology, provides interdisciplinary, group-based programs to children and teens who have mild to moderate behavioral, developmental, or physical problems.

In some cases, the programming offered at the Center for Independence will supplement individual behavioral, OT, PT, or speech services pediatric patients already are receiving. The goal is to help these children gain necessary social skills to be able to function successfully in group settings. The group sessions may provide a place for these patients to practice skills they have learned in their individual sessions.

Abigail Schlesinger, MD (left), is the medical director of the Center for Independence. “The Center for Independence provides brief, intensive group treatment designed to help children and adolescents transition from individual services into the home and school setting with ease.”

The center offers a variety of multidisciplinary group programs, including but not limited to:

- **Ready, Set, School!** for children preparing to transition to kindergarten or 1st grade
- **Pathway to Independence** for school-aged children with physical disabilities to gain self-help skills
- **Confident Kids** for school-age children through high school who need help interacting with their peers in school or social settings

The center also offers single-discipline group programs, which include:

- **Chatterbox**, a program to help school-age children build communication skills effectively when interacting with others
- **Handwriting Without Tears**, a developmentally based program designed to progress a child’s fine motor skills along with visual skills through fun and interactive activities
- **Music to My Ears**, where through the use of music and movement, children who have varying degrees of hearing loss will be engaged while developing their listening and speech/spoken language skills

- **More Than Words**, whose goal is to empower parents to become the primary facilitator of their child’s communication and language development, thereby maximizing the child’s opportunities to develop communication skills in everyday situations

Programs offered at the center are a combination of third-party payor and self-pay. Parents should visit [www.chp.edu/CFI](http://www.chp.edu/CFI) for a complete listing and more information on programs offered at the center. To begin the intake process, call **724-933-9286**.

Children’s Pine Center also offers the following outpatient specialty services:

- Adolescent Medicine 412-692-6677
- Child and Family Counseling Center 724-933-3910 or toll-free 1-877-933-3910
- Dermatology 724-933-9190
- Developmental Medicine 724-933-8971 or toll-free 1-877-933-3910
- Neurology 412-692-PEDS (7337)
- Occupational Therapy and Physical Therapy (724-933-9250), and Speech-Language Pathology (Site: 724-933-9270 Scheduling: 412-692-5580)
- Ophthalmology 412-692-8940
- Rehabilitation Medicine 412-692-5097

**CENTER FOR INDEPENDENCE**
Children’s Pine Center
11279 Perry Highway
Wexford, PA 15090
Call 724-933-9286 to begin the intake process.
The presence of a certain molecule allows the immune system to effectively police tuberculosis (TB) of the lungs and prevent it from turning into an active and deadly infection, according to a new study led by researchers at Children's Hospital of Pittsburgh of UPMC and the University of Pittsburgh School of Medicine. Their findings appear in the Journal of Clinical Investigation.

More than 2 billion people — one-third of the world's population — are infected with Mycobacterium tuberculosis, the bacterium that causes TB, says senior author Shabaana A. Khader, PhD (left), allergist/immunologist at Children's Hospital and assistant professor of Pediatrics, University of Pittsburgh School of Medicine. The infection is challenging to treat partly because the bacillus is able to enter cells and linger for years without causing symptoms, known as latent TB. Then, typically when the immune system becomes impaired due to other reasons such as age or HIV, the infection becomes active and causes the cough, night sweats, fever, and weight loss that characterize the disease.

"A hallmark of TB that we see on chest X-rays is the granuloma, a collection of immune cells that surround the infected lung cells," Dr. Khader says. "But what we didn't know was the difference between a functioning protective granuloma, as in latent TB, and a non-protective granuloma seen in active TB patients. We aimed to find immunologic markers that could show us the status of the infection."

For the study, which was funded by the National Institutes of Health, the researchers studied human TB-infected cells as well animal models of the disease. They found that granulomas that contain ectopic lymphoid structures, which resemble lymph nodes, are associated with effective suppression of TB, and that granulomas that don't contain them are associated with active TB. They also learned that immune cells called T cells that had a surface marker molecule called CXCR5 were associated with the presence of ectopic lymphoid structures.

“It’s akin to reporting a break-in: If a person calls 911 to report a robbery but doesn’t give a specific address, the immune system police could come to the neighborhood but not know which home was invaded.”

~ Shabaana A. Khader, PhD

It’s akin to reporting a break-in, Dr. Khader says. If a person calls 911 because of a robbery, but doesn’t give a specific address, the immune system police could come to the neighborhood but don’t know for certain which home was invaded.

“The presence of CXCR5 provides a specific address for the infected cells that tells the immune cells where to focus their attention to contain the problem,” she says. "That results in the formation of ectopic lymphoid structures and the protective granuloma that keeps TB infection under control, unlike in active disease. Without CXCR5, those structures did not form and active TB was more likely.”

When the researchers delivered CXCR5 T cells from donor animals to TB-infected mice that lacked CXCR5, T cell localization and ectopic lymphoid structure formation was restored, leading to decreased susceptibility to TB.
Physician Liaisons at Your Call

Judi Morris-Feinberg
412-692-5428
judi.feinberg@chp.edu

Laura Mull
412-692-7157
laura.mull2@chp.edu

Monica Reisz
412-692-5376
monica.reisz@chp.edu

Children’s Hospital of Pittsburgh of UPMC is committed to helping pediatricians and family practitioners meet their goals. Our team of physician liaisons is dedicated exclusively to addressing the needs of family practitioners and community pediatricians.

Down Syndrome Podcast Series Available

Kishore Vellody, MD, medical director of Children's Hospital's Down Syndrome Center and part of the Diagnostic Referral Service, is producing the Down Syndrome Podcast Series. Podcasts focus on a wide range of issues related to Down syndrome for parents, caregivers, educators, and medical professionals. They are updated regularly and feature discussions with medical experts in cardiology, otolaryngology, sleep disorders, infectious diseases, and more. Visit www.chp.edu/dscpodcast or subscribe on iTunes. If you have a topic that you would like the podcast to cover, email downs syndromecenter@gmail.com.

2013 Directory of Services

An updated 2013 version of the Directory of Services is now available online. The interactive PDF is searchable by physician name and department. To access the updated directory visit www.chp.edu/directory.

Renowned Physician Scientist Named Hem/Onc Chief

Linda M. McAllister-Lucas, MD, PhD, a nationally recognized pediatric cancer physician and researcher, has been appointed chief of the Division of Pediatric Hematology/Oncology at Children’s Hospital of Pittsburgh of UPMC.

Dr. McAllister also has been appointed an associate professor of Pediatrics at the University of Pittsburgh School of Medicine.

She came to Children’s Hospital from C.S. Mott Children’s Hospital and the University of Michigan School of Medicine in Ann Arbor, where she served as associate professor of pediatrics.

“Dr. McAllister-Lucas’ research has provided important new insights into the molecular basis of lymphoproliferative disease. She is an outstanding clinician-scientist who also has been a dedicated mentor to medical students and residents throughout her career,” said David H. Perlmutter, MD, physician-in-chief and scientific director at Children’s Hospital, and the Vira I. Heinz Professor and chairman of the Department of Pediatrics at the University of Pittsburgh School of Medicine.

As a top National Institutes of Health-funded scientist at the University of Michigan, she led a basic research laboratory investigating the mechanisms by which inflammation triggers mucosa-associated lymphoid tissue (MALT) lymphoma.

At Michigan, Dr. McAllister shared a lab with her husband, Peter Lucas, MD, PhD, and their research later branched out into studying other inflammatory diseases, including vascular and hepatic inflammation, identifying additional connections between inflammation and cancer.

Dr. Lucas also has joined Children’s Hospital and the University of Pittsburgh School of Medicine, so the pair will continue their inflammation and cancer research at the John G. Rangos Sr. Research Center on the Children’s campus.

Dr. Lucas also will collaborate with renowned University of Pittsburgh pathologist Yuri Nikiforov, MD, PhD, in conducting molecular diagnostics research at UPMC.
Minimally Invasive and Robotic Surgery Center

EXTENDING INNOVATIVE TECHNIQUES TO PEDIATRICS

For many years, the pediatric surgeons at Children’s Hospital of Pittsburgh of UPMC have been leaders among their peers in minimally invasive surgical techniques. Now, that national leadership is extended to robot-assisted pediatric surgeries as well as single-site pediatric surgeries.

Relatively common among adult surgeons, few pediatric surgeons have the advanced training needed to properly, safely, and successfully perform these types of surgeries in the pediatric population.

At Children’s Hospital, all of the surgeons in our General and Thoracic Surgery and Urology divisions have that advanced training. They are performing an increasing number of these procedures, ranging from common operations such as appendectomies and cholecystectomies, to complex neonatal, abdominal, and chest surgeries, using minimally invasive or robot-assisted techniques.

Nearly half of Children’s 13 surgical suites are equipped with state-of-the-art technologies needed to perform minimally invasive surgeries in children. The hospital also is one of just a handful of pediatric hospitals nationally with the top-of-the-line daVinci SI Dual Consol Surgical Robot System. This system can be used either for operations where two surgeons must operate simultaneously, or for training purposes.
Robotic Surgery
As robotic surgical technology has advanced, it’s become more suited to use in the pediatric population. The surgeons in the divisions of Pediatric Urology and of Pediatric General and Thoracic Surgery at Children’s Hospital are the primary users of robotic surgical technology at Children’s. For a list of the conditions for which our urologic surgeons use robotic surgical technology, visit www.chp.edu/mis.

Single-Port Laparoscopic Surgeries
Our pediatric general and thoracic surgeons have trained extensively in pediatric single-port surgery. This type of surgery, virtually scarless because of the incision’s placement within the belly button, can be done with or without the daVinci robot. Common procedures include splenectomy, appendectomy, Nissen fundoplication, iliostomy, and bowel resection.

Minimally Invasive Brain Surgery
Physicians at UPMC pioneered minimally invasive brain surgeries in adults. The endoscopic endonasal approach, or EEA, can be used to remove brain tumors through the nose and nasal passages. Neuroendoporation surgery, which was developed at UPMC, uses a small tube the circumference of a dime to remove tumors that are located deep in the brain.

Both these techniques were modified for application in pediatric patients by specialists at Children’s Hospital of Pittsburgh of UPMC. In addition, endoscopic intraventricular surgery allows surgeons to directly treat an obstruction to the normal flow of cerebrospinal fluid circulation (endoscopic cyst fenestration) and/or to bypass the area of obstruction (endoscopic third ventriculostomy, endoscopic septostomy) in order to treat hydrocephalus in children.

Study Reveals Success Rate of Minimally Invasive Surgical Approach in Infants
Michael Ost, MD, chief, Division of Pediatric Urology (left), is the senior investigator on a study that showed transperitoneal laparoscopic pyeloplasty for ureteropelvic junction (UPJ) obstruction is a safe alternative to open pyeloplasty in infants.

UPJ obstruction is the most common obstructive urinary system disease in infants. The minimally invasive approach to pyeloplasty, which can be done with robot assistance, has emerged as a safe, effective alternative to standard open pyeloplasty. “This population can be challenging to treat laparoscopically because of the small size of the abdomen and caliber of the ureter,” Dr. Ost says.

Continued on page 6
Nathan's Story

SINGLE-INCISION LAPAROSCOPIC APPENDECTOMY

In October 2012, 10-year-old Nathan Coltura, from West Newton, Pa., complained of stomach pains. His mother, Tracey, immediately thought he may have eaten too much and had a stomach ache. However, when Nathan woke up the next morning, he felt even worse. Tracey pushed on his side, and that unleashed a sharp abdominal pain in her son.

The family took Nathan to their local emergency room, where doctors suspected that Nathan’s appendix was inflamed. They sent him via ambulance to Children’s Hospital of Pittsburgh of UPMC.

At Children’s Hospital, Nathan underwent a physical exam and abdominal ultrasound. Based on the results, Nathan was diagnosed with acute appendicitis: an inflammation and infection of the appendix. This is the most common cause of emergency surgery in childhood.

The family met with Stefan Scholz, MD, PhD, FAAP, director of Minimally Invasive Surgery at Children’s Hospital, who told them that Nathan needed to have his appendix removed. After discussing options with the family, Dr. Scholz would perform a single-incision laparoscopic appendectomy.

Nathan’s surgery was successful. Because the single incision Dr. Scholz used went through his belly button and was just 1.2 cm, he has no visible scarring on his abdomen. He was at Children’s for only three days total. He missed three days of school after being released; had he had an open appendectomy rather than a minimally invasive procedure, he likely would have missed a week.

Annually, Children’s Hospital performs about 500 appendectomies. Today, more than 99 percent of all appendectomies are performed using the minimally invasive technique.

To learn more about minimally invasive and robotic-assisted surgeries at Children’s Hospital of Pittsburgh of UPMC, please visit www.chp.edu/mis.

Continued from page 5

His team reviewed records of 29 children younger than 12 months old treated with transperitoneal laparoscopic pyeloplasty for UPJ obstruction from May 2005 to February 2012. Of the 24 patients for whom follow-up data was available, 22 (92 percent) had successful repairs.

“Our early experience reveals a developing success rate comparable to that of other treatment modalities with minimal morbidity,” says Dr. Ost. The findings are published in the April issue of “The Journal of Urology.”

Minimally invasive and robot-assisted surgeries are done only at Children’s Hospital’s main campus in the Lawrenceville section of Pittsburgh. At Children’s North in Wexford, endoscopic abdominal evaluations can be performed. •
Outstanding Pediatric Cardiothoracic Surgery Outcomes
The Pediatric Cardiothoracic Surgery program at Children’s Hospital holds the lowest overall four-year surgical mortality rate among all medium- and high-volume programs in the country, according to the latest data compiled by the Society of Thoracic Surgeons (2008–2012). Children’s four-year mortality rate was 1.1 percent compared to a national average of 3.5 percent during the same reporting period.

The report included 110 out of 120 pediatric cardiovascular programs in the United States at low-, medium-, and high-volume centers and encompassed data from July 2008 to June 2012.

“This achievement is a testament to our commitment and dedication to patient care,” says Victor Morell, MD, chief of Pediatric Cardiovascular Surgery and co-director of the Heart Institute. “Our team of surgeons, nurses, and technicians is among the best in the nation at performing every type of intervention and achieving exceptional outcomes.”

Study Shows Telemedicine Effective in Delivering Pediatric Cardiac Critical Care
A study conducted by the Heart Institute and the Foundation Valle del Lili in Cali, Colombia, confirmed that telemedicine in pediatric cardiac intensive care is not only feasible but effective.

Ricardo Munoz, MD (above), medical director for Global Business and Telemedicine at Children’s Hospital, explains his findings in a “Discovery Health” video. Watch the video and download the paper at www.chp.edu/telemedicine.

Managing Congenital Heart Disease for a Lifetime
Stephen Cook, MD (left), director of the Adult Congenital Heart Disease (ACHD) Center at Children’s Hospital, is an expert in the transition of care of patients with congenital heart disease from adolescence to adulthood. Dr. Cook recently released a guide for teens, “Managing Your Congenital Heart Disease for a Lifetime,” to help ease the anxiety of transitioning to an adult cardiology program. To learn more about the teen transition program, email the ACHD Center at achd@chp.edu or call 412-692-5540.

Our Pediatric CICU is 10
The Pediatric Cardiac Intensive Care Unit (CICU) at Children’s Hospital is the first and only CICU in the region. For 10 years it has provided comprehensive support for infants, children, teens, and young adults with complex congenital or acquired heart disease. The technologically advanced CICU is a 12-bed unit with private rooms, offering state-of-the-art care in a family-centered environment. Specially designed beds allow surgeons to operate right in the room, saving precious time in an emergency. This intensified level of care improves the chance that a patient will survive a serious heart disorder or surgery and will go on to make a full recovery.

Save the Date: Master Class in Congenital Cardiac Morphology
Mark your calendar for the 6th Annual Master Class in Congenital Cardiac Morphology, Oct. 2 to 4, 2013, in Pittsburgh. The 2013 course will highlight anomalies of the arterial and atrioventricular valves and coronary arteries, and will again provide a multi-modality view of all aspects of the developing heart using the latest imaging technologies and hands-on demonstrations. Complete program details will be available this summer. View photos from the 2012 course at www.chp.edu/masterclass.

In the News
The Heart Institute is in the news! View our stories about sudden cardiac death, the Adult Congenital Heart Disease Center, and more online. Visit www.chp.edu/heart and select “About Us.”
Rachel Berger, MD, MPH, recently was appointed to the editorial board of Pediatrics. Dr. Berger is a member of the Child Protection Team at the Child Advocacy Center here at Children’s; director of Child Abuse Research, Safar Center for Resuscitation Research at the University of Pittsburgh; associate professor of Pediatrics at the University of Pittsburgh School of Medicine; and serves on the Pennsylvania Task Force on Child Protection.

Groundbreaking research carried out at UPMC and the University of Pittsburgh, and featuring BCI neurosurgeon Elizabeth Tyler-Kabara, MD, PhD, was the subject of a recent segment on CBS’ “60 Minutes.” The research program aims to restore function to patients who have suffered paralysis or loss of limb. The overall project is funded by Defense Advanced Research Projects Agency, National Institutes of Health, Department of Veterans Affairs, and UPMC Rehabilitation Institute.

Rakesh Sindhi, MD, director of Pediatric Transplant Research for the Hillman Center for Pediatric Transplantation, was named a “Tribute to Excellence” honoree by the Allegheny Division of the American Liver Foundation at its annual luncheon on March 8 at The Fairmont Pittsburgh. This award recognizes individuals and organizations that have demonstrated the highest levels of dedication and commitment to the American Liver Foundation in the fight against liver disease.

George Mazariegas, MD, FACS, chief of Pediatric Transplantation at Children’s Hospital, was an invited international guest and board member of the 5th Annual Pan Arab Liver Transplant Society Congress, in Doha, Qatar, in January. He gave two presentations: “Early Determinants of Successful Outcome in Pediatric Liver Transplantation” and “Prevention and Management of Complications in Technical Variant Pediatric Liver Transplantation.” Dr. Mazariegas also was on the awarding committee for best oral and poster presentations. More than 500 professionals from around the world attended the congress.

Victor Morell, MD, chief of Pediatric Cardiothoracic Surgery at Children's Hospital, was an invited speaker at the 6th World Congress of Paediatric Cardiology and Cardiac Surgery, in Cape Town, South Africa, in February. Dr. Morell gave two presentations: “The Aortic Translocation (Nikaidoh) Procedure: How I Do It” and “Aortic Translocation Procedure: Late Outcomes.” The World Congress is a major international event for pediatric cardiology and cardiac surgery, highlighting four years of research and technological developments in basic sciences, clinical research, and therapeutic interventions.

Amy Cashdollar, RN, MSN, CMPE, clinical director of the Heart Institute at Children’s Hospital, was invited to work with other pediatric cardiac professionals to offer guidance to MedAxiom, a subscription-based cardiology service provider, for the development of an outpatient database for pediatric congenital heart disease. Progress was reported at the January 2013 American College of Cardiology summit and the American College of Pediatric Cardiology subgroup meeting. Other participating children’s hospitals include Atlanta, Cincinnati, and Wisconsin.
South Fayette Plans Moving Forward

Children’s Hospital of Pittsburgh of UPMC’s plans to build an ambulatory care center in South Fayette Township have been approved. A groundbreaking for the new Children’s South in South Fayette was held May 7, and the facility will open in the fall of 2014. The new Children’s South will centralize Children’s Hospital services that currently are spread between two locations in Bethel Park.

Located on the I-79 corridor, the new Children’s South will offer easy access to patients and families from southern Allegheny, Washington, Westmoreland, and Greene counties as well as from West Virginia.

The South Fayette location will house all services currently at the Bethel Park sites and provide ample opportunity to expand services to include radiology, lab, behavioral health, and general pediatrics with the addition of a Children’s Community Pediatrics practice.

Stay tuned for further developments in the coming months.

In Memoriam

JAMES E. LEVIN, MD, PHD

James E. Levin, MD, PhD, Children’s Hospital’s chief medical information officer, died unexpectedly on Feb. 11 at the age of 55.

Dr. Levin joined Children’s Hospital’s staff in 2007 and over the next six years, was a pioneer in medical informatics. His accomplishments included advances in computerized physician order entry adoption, helping Children’s achieve the first HIMSS Level 7 designation for a pediatric hospital, best-in-class physician documentation, utilization of clinical decision support, collaboration in research, and excellence in teaching. He was dedicated to working to reduce medical errors.

Dr. Levin earned his doctorate and medical degree from the University of Chicago, where he also completed pediatric residency training. He completed a research fellowship in health education as well as a medical fellowship in pediatric infectious diseases at the University of Minnesota.

Dr. Levin is survived by his wife and two children, as well as two sisters and a brother.

Read “Remembering an Informatics Pioneer and Compassionate Friend” by G. Daniel Martich, UPMC’s chief medical information officer, on our blog at childrenspgh.org.

ABOVE: The Children’s South groundbreaking on May 7, 2013
A Big Shout-Out to Our Best Docs!

Ingrid Libman, MD, PhD • Joseph Losee, MD • Mark Lowe, MD, PhD • Loreta Matheo, MD • George Mazariegos, MD • Linda McAllister-Lucas, MD, PhD • Sara McIntire, MD • Stephen Mendelson, MD • Marian Michaels, MD • Elizabeth Miller, MD, PhD • Victor Morell, MD • Michael Moritz, MD • Deborah Moss, MD • Ricardo Munoz, MD • David Nash, MD • Ken Nischal, MD, FRCOphth • Andrew Nowalk, MD, PhD • David Orenstein, MD • Salvatore Orlando, MD • Richard Orr, MD • Laura Panko, MD • Jerome Parness, MD, PhD • Jonathan Pletcher, MD • Ian Pollack, MD • Kumaravel Rajakumar, MD • Evelyn Reis, MD • A. Kim Ritchey, MD • James Roach, MD • Jeffrey Rudolph, MD • Joseph Sanfilippo, MD • Francis Schneck, MD • Nader Shaikh, MD • Ron Shapiro, MD • Peter Shaw, MD • Frederick Sherman, MD • Benjamin Shneider, MD • Rakesh Sindhi, MD • Kyle Soltys, MD • Jonathan Spahr, MD • Mark Sperling, MD • Janet Squires, MD • Robert Squires Jr., MD • Gina Sucato, MD • Jean Tersak, MD • Ann Thompson, MD • Elizabeth Tyler-Kabara, MD, PhD • Andrew Urbach, MD • Abhay Vats, MD • Jerry Vockley, MD, PhD • W. Timothy Ward, MD • R. Scott Watson, MD, MPH • Peter Wearden, MD, PhD • Daniel Weiner, MD • Shelley Williams, MD • Selma Witchel, MD • Michael Wollman, MD • Robert Yellon, MD • Basil Zitelli, MD • Julio Zucooli, MD