A Luminary in OBGYN

Dr. Richard Berkowitz is honored for his contributions to the field

Until the 1970s and the advent of prenatal ultrasound screening, the uterus was a closed box, says maternal-fetal medicine specialist Richard Berkowitz, MD, and obstetricians were in the dark about the health of the developing fetus. “We had no idea what was going on in the uterus in the overwhelming majority of cases,” he adds. Dr. Berkowitz was among those who recognized the potential uses of ultrasound and helped define them, and he went on to develop several diagnostic and therapeutic procedures now widely used to treat fetal diseases in utero. For his work on a treatment for alloimmune thrombocytopenia, a condition that causes fetal and neonatal intracranial hemorrhage, Dr. Berkowitz received the King Faisal Award in 2012. And this past spring Dr. Berkowitz’s many contributions were recognized by the editors of the American Journal of Obstetrics and Gynecology (AJOG), who profiled him as the first in a new series, “Giants in OBGYN.”

Roberto Romero, MD, DMedSci, AJOG’s Editor-in-Chief, Obstetrics, says the journal’s new series celebrates physician-scientists who have changed the practice of OBGYN and the understanding of reproductive physiology and disease. “We recognized Dr. Berkowitz with this honor for his contributions to prenatal diagnosis and treatment, and in particular, the non-invasive approach to the management of alloimmune thrombocytopenia,” he says. “He was also a pioneer in the care of the critically ill mother, and ultrasound in obstetrics and gynecology. AJOG is proud to profile Dr. Berkowitz as we seek to tell the story behind the headlines.”

Dr. Berkowitz says he was overwhelmed, flattered, and somewhat embarrassed by this honor. “I was genuinely surprised to be recognized for doing things that I have always thought of as being within my job description,” he says, “and that I have thoroughly enjoyed doing throughout my career.”

Dr. Berkowitz puts his accomplishments in the context of a tremendous wave of discoveries and progress in OBGYN. “The advances that have been made in my professional lifetime in OBGYN in general, and obstetrics in particular, are greater than the advances made in our field in the entire history of our species prior to those 40 to 50 years. The magnitude of it is absolutely extraordinary,” he says. “Without question the biggest advance is the imaging made possible through the use of...”
Message from the Editors

Richard Berkowitz, MD, is a trailblazer in the field of maternal-fetal medicine: he was a pioneer in the use of obstetrical ultrasound, he developed several diagnostic and therapeutic procedures to treat fetal diseases in utero, and through these and many other achievements has greatly improved the health and outlook for pregnant women and their offspring. This past spring his contributions were recognized by the editors of the *American Journal of Obstetrics and Gynecology*, who profiled Dr. Berkowitz as the first in a new series, “Giants in OBGYN.” We celebrate Dr. Berkowitz and this honor on page 1. In this issue we also introduce pediatric immunologist Anne Moscona, MD, (page 7) who has joined CUMC to develop an innovative, collaborative virus research program. On page 10 meet pediatric surgeon Craig Albanese MD, MBA recently appointed as Chief Operating Officer of NewYork-Presbyterian/Morgan Stanley Children's Hospital and Sloane Hospital for Women. Our Food Allergy Center recently joined the 28-member research consortium FARE (page 6), which will enhance our research efforts in food allergies. Psychologists Catherine Monk, PhD (page 9) and Rochelle Steinwurtzel, PsyD, (page 8) are helping pregnant women, new mothers, families, and infants deal with the trauma of difficult pregnancies and births, and stays in the neonatal intensive care unit. And NewYork-Presbyterian Hospital’s new Phyllis and Ivan Seidenberg Center for Children’s Digestive Health (page 13) brings together a multidisciplinary team of specialists to care for children with both simple and complex gastrointestinal illnesses. Look for our winter issue in early 2017.

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CO-EDITORS-IN-CHIEF
Children with autism spectrum disorder are four times more likely to suffer from gastrointestinal (GI) problems than other children. These GI troubles are often blamed on the tendency of kids with autism to limit their diets to a few favored food items. In a study led by pediatric gastroenterologist Kara Gross Margolis, MD, and published in the Journal of Clinical Investigation, researchers showed that in mice, for some types of autism, gastrointestinal difficulties may originate from the same genetic changes that lead to the behavioral and social characteristics of the condition. Recent research had linked some cases of autism to genetic mutations that inhibit the activity of serotonin, a chemical that transmits signals from one neuron to another in the brain. The brain, however, contains only 5 percent of the body’s serotonin; most of the rest is at work in the GI system. Genetic mutations that affect serotonin’s activity will thus have ramifications in the gut as well as in the brain. The researchers investigated gastrointestinal development in a mouse model that carries a mutation found in some patients with autism. The mutation decreases serotonin activity by increasing the activity of the serotonin reuptake transporter (SERT), which pulls serotonin back into the neuron after it is released for neurotransmission. Dr. Margolis and colleagues discovered that these mice have fewer neurons than normally found in the gut, a poorly maintained gut lining, and slower movement of gut contents. The changes were present in young mice and persisted through adulthood. “Our study is one of the first to suggest that GI and neurological aspects of autism, in some cases, may stem from a shared underlying abnormality,” says Dr. Margolis. “This provides scientific credibility to the idea that gastrointestinal problems may be an innate feature of autism, at least for some patients.”


**Maps of Colon Contractions in Wild Type Mice (Left) Compared to the Autism Model Mice (Right), Whose Intestinal Motility Was Abnormally Slow.** (Source: Kara Gross Margolis, MD, and Michael Gershon, MD)
New Paradigm in Cervical Structure Proposed

About 10 percent of pregnancies in the US end in spontaneous preterm birth. The causes vary, but they all involve premature remodeling and dilation of the cervix to allow for delivery of the premature fetus. This process is not fully understood, but ultrasound findings and computational modeling suggest that in some cases, the process starts with dilation of the internal os (the top aspect of the cervix where the uterine arteries insert into the uterus).

To understand why the internal os relaxes prematurely, maternal-fetal medicine specialist Joy Vink, MD, and colleagues conducted a study to evaluate cervical smooth muscle cell content and distribution throughout the cervix and correlate if cervical smooth muscle organization influences regional cervical tissue contractility. Using cervical tissue samples from women who had undergone hysterectomy, they showed that, the internal os contains 50-60 percent cervical smooth muscle, and bundles of cervical smooth muscle cells can be found circumferentially oriented around the periphery of the cervix. This contradicts the prevailing paradigm, which states that the cervix is mainly collagen/extracellular matrix with minimal cellular content. The group’s research, published in the *American Journal of Obstetrics & Gynecology*, suggests a new paradigm for cervical tissue morphology—one that includes the possibility that there is a specialized sphincter at the internal os, and that introduces cervical smooth muscle cells as possible players in propagating uterine contractions, and cervical remodeling. Such a paradigm provides possible new avenues to discover novel, effective therapies to prevent spontaneous preterm birth.


Advances in Research

IN SPONTANEOUS PRETERM BIRTH, THE CERVIX REMODELS AND DILATES PREMATURELY.

Researchers Create Novel Human Embryonic Stem Cells

Diploidy—a condition in which cells have two sets of chromosomes (and therefore two copies of genes)—is a fundamental genetic feature in mammals. Haploid cells, those containing one set of genes, normally arise only as sperm or egg cells, which join together to again become diploid. Researchers have been able to create haploid embryonic stem (ES) cells from several mammalian species, but none have reported creating haploid human ES cells. A multi-institutional research group that includes developmental cell biologist Dieter Egli, PhD, assistant professor of Pediatrics, recently published a research letter in *Nature* in which they report generating and analyzing a collection of human ES cell lines originating from haploid egg cells. They were able to isolate and maintain human ES cell lines with a normal haploid karyotype (the number and visual appearance of the chromosomes.) Haploid human ES cells exhibited typical characteristics of pluripotent stem cells (those able to form any type of adult cell), such as the capacity for self-renewal. Moreover, they demonstrated the usefulness of these cells as a platform “loss-of-function” genetic screening, a technique to investigate gene function by systematically deleting or disrupting the function of genes, one by one. “We expect that haploid human ES cells will provide novel means for studying human functional genomics and development,” the researchers concluded.

Genetic testing of prospective parents to detect carriers of specific inherited recessive diseases is part of routine obstetrical practice. Professional organizations currently recommend that prospective parents be tested for a limited number of diseases in part based on self-reported racial/ethnic background. Multiplex platforms, which simultaneously test for many potentially disease-causing genetic variants on each sample, are now available, facilitating screening for an expanded number of conditions independent of racial/ethnic background. Ronald Wapner, MD, and colleagues recently conducted a study of 346,790 individuals of diverse racial and ethnic backgrounds to quantify the risk of recessive conditions in this group. They found that an expanded testing panel of over 100 disorders would identify more fetuses at risk for severe or profound childhood conditions than would testing based on existing screening guidelines, not only because expanded screening included additional disorders but existing testing recommendations are based in part on self-identified racial/ethnic categories. Their analysis of expanded carrier screening, published in *JAMA*, revealed that many people in non-European racial/ethnic categories have a risk of a profound or severe genetic disease that may not be detected by the guidelines in place at the time of this analysis.

Food Allergy Program Designated a Center of Excellence

Program joins network of 28 centers nationwide

For children with life-threatening allergies to ubiquitous foods like milk, peanuts, tree nuts, eggs, or wheat, every unfamiliar food in which these might be hidden triggers fear and anxiety. The number of children with food allergies ballooned by almost 50 percent from 1997 and 2011, and 8 percent of children are now allergic to one or more foods. To meet the growing demand for advanced treatments, the Food Allergy Center at Columbia University Medical Center and NewYork-Presbyterian Morgan Stanley Children’s Hospital is building a program of research and multidisciplinary specialized care. The program was recently designated a Center of Excellence by Food Allergy Research & Education (FARE), a consortium of 28 centers across the country. Because FARE offsets the costs of managing complex food allergy studies, the new membership “provides us the support to be able to both do clinical trials and provide the highest level of care for our patients,” says Joyce Yu, MD, Director of the Food Allergy Center.

Dr. Yu notes that the incidence of all types of allergies has increased, including asthma, allergic rhinitis, and eczema, in addition to food allergies. Many allergists point to the hygiene hypothesis—the idea that allergies are spiking because children are exposed to fewer microbes than in the past—as an explanation. But food allergies may also be due to a shift from our ancestors’ mainly unprocessed, plant-based diet to one that includes a range of processed foods, genetically modified organisms (GMOs), and artificial sweeteners. Other possible explanations include a link to climate change, pollutants that could be altering the expression of our genes, and more sedentary lifestyles, Dr. Yu explains.

The four food allergies that appear earliest in life are reactions to milk, egg, soy, and wheat. And while infants and young children tend to outgrow these allergies, “We are starting to see a little more persistence of some of these allergies, and it’s unclear why,” Dr. Yu says. Allergies to peanuts, tree nuts, fish, and shellfish often emerge later and are more persistent, she adds. These four also seem to be more frequently reported to be associated with severe reactions. “But any of these allergens can cause a severe reaction.”

Current standard care includes diets designed to avoid the foods that cause a reaction, emergency action plans that spell out what to do if a child eats an allergen, self-injectable epinephrine, other medications dispensed in emergency departments, and then repeated evaluations to determine whether a child has naturally outgrown his or her allergy.

A number of studies, including a multicenter trial recently opened at Morgan Stanley Children’s Hospital, are evaluating the effectiveness of an approach called oral immunotherapy (OIT), in which doctors give patients first miniscule, then escalating amounts of the food they are allergic to, which they consume daily, in the hope that this constant exposure will lessen their reactivity to that food. Some trials are combining OIT with a biological therapy such as omalizumab (Xolair®), an asthma medication, which binds to IgE, the immune protein that causes the reaction, reducing the amount of the protein in the child’s system.

Doctors know that OIT can very effectively “desensitize” people to the allergen so that they no longer experience a reaction, but they have to continue to consume the problem food daily. Long-lasting immunological changes that would allow people with food allergies to safely eat these foods, even after the treatment is discontinued, is called tolerance.

So far OIT seems to be a very effective approach, but the long-term outcome is unknown. “Tolerance is the Holy Grail—that’s what we want to achieve with all our therapies,” says Dr. Yu. “But we will only know in 5 or 10 years for sure whether we actually achieved tolerance with this approach. In the meantime, we will have to continue to measure patients’ IgE, do skin tests, and do food challenges to see whether they are still reactive to the food.” — Beth Hanson

Many allergists believe allergies are spiking because children are exposed to fewer microbes than in the past.
Fusion Science

A cross-departmental collaboration aims to better understand viruses

Viruses are among the simplest of organisms—mere twists of DNA or RNA enclosed in a protein and lipid cloak. But, as recent outbreaks of Ebola and Zika demonstrate, they can wreak devastation in human lives and communities. Pediatric infectious diseases researcher Anne Moscona, MD, has spent much of her career studying paramyxoviruses, a group that includes the viruses that cause parainfluenza, measles, respiratory syncytial virus (RSV), measles, and mumps, and she and her colleagues have contributed important findings that illuminate the mechanism by which viruses bind to, then infect, human cells.

Dr. Moscona, a graduate of The College of Physicians and Surgeons (P&S), recently joined CUMC with appointments in three departments: Pediatrics; Physiology & Cellular Biophysics; and Microbiology & Immunology. These joint appointments reflects her ambition to bring together researchers from an array of different disciplines under the umbrella of a center for human host-pathogen interactions. Dr. Moscona and her collaborator Matteo Porotto, PhD, who joined CUMC at the same time, co-direct the center. Through collaborations among the researchers in these three departments and others in P&S, the Mailman School of Public Health, the Graduate Schools, NewYork-Presbyterian, and the New York Structural Biology Center, Drs. Moscona and Porotto plan to examine the interactions between viruses and their human hosts to determine what makes these invaders so dangerous. The goal, says Dr. Moscona, is to understand the basic mechanisms of how the viruses work—how they enter cells and how they cause disease—and then to use that information to develop antivirals to interfere with disease.

To show how a collaborative effort that engages disciplines from basic virology, structural biology, and biophysics to bioengineering and clinical medicine would be a useful strategy, Dr. Moscona uses the example of a virus that causes respiratory disease. To infect a lung cell, a virus activates a fusion protein on its surface; this protein enables it to fuse with the target lung cell, which it then infects. If that fusion process is activated too early, the virus is inactivated and loses its infectivity. “So we are trying to understand on the most basic level—using structural biology and biophysics and electron microscopy—how that fusion process gets activated and when,” she explains. “Once we understand this process, we plan to develop small molecules that could activate that fusion process prematurely, before the virus can infect the lung. We would then work with both doctors and engineers to understand how to put these small molecules in a form that can be taken as an antiviral, for example, as a nasal spray.”

Many viral diseases are regulated by the response of the infected person’s immune system. That response could involve both protecting the person and causing a reaction that contributes to the disease. “So our immunology colleagues can help us understand that balance between a protective immune response and a disease-causing one,” says Dr. Moscona. “The outcome of our interaction with any pathogen is always a balance of this interaction between the pathogen and the host.”

Because science is evolving so rapidly, Dr. Moscona hopes that she and Dr. Porotto will nurture and train young and emerging scientists to be able to function at the interfaces where several disciplines merge. “The scientists we are training now should not to be limited by exactly what they already know or have already been trained in, but should have practice exploiting these new and developing interdisciplinary connections,” she adds.

Dr. Moscona says that Columbia is encouraging the kind of cross-departmental, collaborative approach that she is embarking on as a way of breaking away from the more traditional departmental structures; the university is moving, instead, toward bigger scientific themes. “While these kinds of interactions require breaking down a few barriers, there is a lot of enthusiasm for fostering them,” she adds. “And the enthusiasm of the three department chairs involved in setting up our program here reflects the emphasis on this vision. For them to work out this kind of arrangement required real openness and communication and was really a feat.”

— Beth Hanson
Parents who are depressed and anxious are less likely to attach well to their infants, and that lack of attachment can affect the child’s development in the long run, so when I meet with them I try to impart to them their critical role as parents,” Dr. Steinwurtzel says. “I really work to strike a balance between helping them take care of themselves and also making sure they understand the value of their role in their babies’ lives.”

When the NICU staff identifies parents who need help, Dr. Steinwurtzel offers to meet them more regularly, “and for a lot of parents that is sufficient. Many feel they can’t talk with anyone about what they’re going through, so talking to me can help them feel less alone.” Dr. Steinwurtzel also co-leads a support group for parents with senior NICU nurse, Peter Fair, where they can share their emotional experiences.

“The emotions that come out in our group are extremely layered. There’s guilt, despair, joy, shame, worry, anxiety, trauma—and they can all exist at the same time.”

Because NICU staff members do not have a good sense of how many parents are really struggling and for how long, they are pilot-ing a screening project to better describe the link between the baby’s medical experience and the parents’ emotional experiences. One benefit of this research project will be to make a better case for why more services are needed in these settings, says Dr. Steinwurtzel. “We’re very fortunate that CUMC’s neonatology administration supports me and my work, because it’s really rare to have a psychologist on a NICU. And that’s surprising since this area is rife with trauma.” — Beth Hanson

In the NICU parents feel guilt, despair, joy, shame, worry, anxiety, and trauma.
The First 280 Days
Exploring how mental health problems can originate before birth

The human brain is almost fully formed before birth—its 100 billion neurons are nearly all established by the end of the second trimester of pregnancy, and during the third trimester 40,000 new synapses form every second, creating a rich, dense network of communication between these neurons. What happens if this crucial brain development takes place in a fetus whose mother is highly stressed, anxious, or depressed? This is the question that psychologist Catherine Monk, PhD, has been working to answer with her research, part of a larger international effort looking at the fetal origins of adult health and disease.

Several research projects have shown links between a fetus’s exposure to maternal factors like obesity, alcoholism, and malnutrition and his or her health later in life. Poor maternal nutrition is associated with low birth weight and a future risk of cardiovascular disease, for example. A mother’s stress and anxiety in pregnancy are linked to a higher likelihood that her child will have attention-deficit/hyperactivity disorder (ADHD), and studies show that prenatal anxiety is even more significantly linked to ADHD and emotional and behavioral problems than a mother’s anxiety and depression after birth.

“Beyond shared genes there is a possible third pathway by which the risk for mental illness travels in families,” explains Dr. Monk, “and that is via maternal mental health during pregnancy.”

Dr. Monk, who has appointments in both OBGYN and Psychiatry and is Director of Research at the Women’s Program, set out to learn more about the mechanisms by which maternal mood affects fetal neurodevelopment. She and her team devised an experiment: they gave women who were in the later stages of pregnancy a mentally challenging task, and measured fetal heart rate change. “In the short-term period of the study we wanted to capture what we think is happening over the course of gestation in a very anxious woman,” she says. All of the women reacted comparably to the lab’s stressor, but only the fetuses of the women already identified as stressed, anxious, and depressed showed a heart rate increase. “We’re assuming that these fetuses have been shaped over the course of gestation, by their mothers’ chronic anxiety and depression, to be more reactive,” she says. “It turns out that the mother’s baseline stress really matters to child development even before birth.”

How is a mother’s mood communicated to the fetus? Dr. Monk and other researchers theorize that cortisol, a hormone released in response to stress, mediates the communication. Research in animal models has shown that when fetuses are exposed to high levels of cortisol, their amygdala, a brain region involved in processing emotions—particularly fear—is enlarged. “We’re confident that for women with significant distress in pregnancy, cortisol exposure is one of the risk factors for her child’s psychopathology.”

Dr. Monk is now conducting epigenetic studies, which look at the influence of external or environmental factors on whether fetal genes are switched on or off. She and her team recently showed that stressed mothers are more likely to have a gene (HSD11B2) in the placenta that is turned off or “methylated;” this gene produces an enzyme that inactivates cortisol so the fetuses are theoretically exposed to higher levels of cortisol.

Dr. Monk, along with her colleague Dr. Elizabeth Werner, developed an intervention to lower depression and anxiety during pregnancy and after birth, called Practical Resources for Effective Postpartum Parenting (PREPP). PREPP focuses on women identified as at risk for depression during prenatal medical visits and leverages the mother-infant focus to engage women in treatment and improve their mood. The women attend four sessions, twice before birth and twice after, and are taught mindfulness and self-reflection skills and tools for helping regulate their babies, as well as educational materials about newborn behavior and postpartum hormone changes. The CUMC researchers followed the women enrolled in the program, and found that they experienced a significant reduction in depression, and lower rates of postpartum depression compared to women receiving only usual care. “Depression, stress, and anxiety are typically modifiable factors when there is access to decent clinical care,” Dr. Monk says. Through interventions like PREPP, “we can help pregnant women, and by doing so help the next generation.” — Beth Hanson
Strategizing Change

New COO brings “improvement science” skills to NYP

Pediatric surgeon Craig Albanese, MD, MBA, was drawn to the business side of medicine by a series of observations of, and interactions with, the healthcare system over the course of his career, he says. "I have a proclivity for looking at things from a systems point of view, and I was always struck by how reactive healthcare was, and how unpredictable, when in fact we can predict a lot of it," he says.

Over time Dr. Albanese decided he could make a bigger impact in medicine “by helping not just the patient in front of me, but trying to help all patients, and all physicians, nurses, and other members of the healthcare team do the best they can by repairing the often inadequate systems that support what they do.”

While serving as Director of Surgical Services at Stanford Children’s Health, Dr. Albanese earned a Master of Business Administration at Santa Clara University in 2008, and was Stanford Children’s Vice President of Quality and Performance Improvement for five years before his appointment as Senior Vice President and Chief Operating Officer of NewYork-Presbyterian/Morgan Stanley Children’s Hospital and Sloane Hospital for Women in spring 2016. Dr. Albanese also published a best-selling book on improvement science in healthcare, Advanced Lean in Healthcare, in 2014.

As COO, Dr. Albanese is responsible for the day-to-day operations of the Children’s and Women’s hospitals. “That means overseeing all the things that result in quality and safety of care, service to patients, and financial stewardship,” he says. Dr. Albanese describes people who go into healthcare as very “mission-centric” and says “every person who comes to work in this field wants to take the best care of patients. When we’re not providing perfect care, I tend to ask, what is it about the system, in terms of supplies, equipment, processes, that is preventing us from doing our best?”

Dr. Albanese works with the administrators of NYP’s five other campuses, sharing best practices in operations and strategy, and working to understand and interpret the vision of the greater NYP community and how to apply it to the Morgan Stanley Children’s Hospital and Sloane Hospital for Women, “so that we’re not an island unto ourselves, but we are learning from and sharing with the bigger system.”

Providing pediatric care is challenging in ways that are different from providing care to adults, he says. Pediatric specialists and subspecialists are in short supply, and in high demand. “You can count on two hands the number of pediatric rheumatologists or pediatric pharmacists in the country,” he says. The space and technology needs per child are much greater than for adults, he adds. “In caring for kids we often say we have three patients: the child and his or her caregivers, so the physical plant has to support both our pediatric patients, as well as their caregivers and their siblings. Pediatric care also requires more social services and care coordination, resources that make it more complicated and time consuming.”

Dr. Albanese has already made some assessments of his new domain, but says he still has more questions than answers. Among them: “What are our most key programs? How can we foster their growth? Which programs do we have to build up, and what will it take to do that?” To that end Dr. Albanese is conducting a “gap analysis” of several specialties, which will compare their actual performance with their potential performance, to ask how to close those gaps.

The most important thing any leader can do, he says, is to prioritize. “What two or three services are we going to really focus on and do well this year? We have to ask the right questions and do a really good job with those few things, and then we move on to the next, then we move on to the next.”

Morgan Stanley Children’s Hospital and Sloane Hospital for Women have such a storied history, Dr. Albanese says, going back to the late 1800s. “To be part of that, and part of a greater NewYork-Presbyterian community—one of the top systems in the country—is an honor and a privilege,” he concludes. — Beth Hanson
Giving

Children’s Gala Raises Funds to Support Pediatric Clinical Trials

On April 17, the Children’s Board at Columbia hosted the third annual Columbia Children’s Gala at the New York Metropolitan Opera, featuring a special performance by soprano, Ailyn Pérez, and tenor, Matthew Polenzani. The Gala was co-chaired by Children’s Board Chair Karen Kennedy, M.D., and her husband, Kevin Kennedy, along with Board members Jillian and Larry Neubauer. The event raised more than $1.27 million to support pediatric clinical trials. The evening’s fundraising push was capped by a generous matching gift of $100,000 that was announced by Larry Neubauer during the event.

The majority of the Gala’s proceeds provided seed funding for a centralized clinical trials program that will serve all pediatric programs across Columbia University Medical Center. In a few years, this program should be self-sustaining.

During the event, Julia Glade Bender, M.D., Associate Director of the Division of Pediatric Hematology, Oncology, and Stem Cell Transplantation spoke about her patients who have survived pediatric cancer thanks to new medications they received as part of clinical trials.

“Pediatric illnesses are not the same as their adult counterparts,” said Dr. Glade Bender, “Children respond to treatment differently than adults, so we make it a point to never treat them like little adults, especially when it comes to new medicines.”

Dr. Glade Bender explained that the new program will improve coordination across Columbia’s 33 subspecialties that care for children. A centralized operation will especially help patients with illnesses that involve multiple specialties. Highlighting the Gala program were touching remarks from Children’s Board member Alexander Silver, who spoke of his son’s experiences with clinical trials and the hope they give to families who have exhausted all other options for treatment.

Dr. Kennedy noted, “We expect this program to produce the kind of innovation that changes the way we understand and practice children’s healthcare.”

Fundraising at previous Galas launched a Center for Complex Care for patients with the most challenging medical conditions, and provided seed funding for new technology and therapies for children with congenital heart disease. — John Uhl

New Damon Professor Is Leading OBGYN Efforts in Perinatal Epidemiology and Biostatistics

In May, the Department of Obstetrics and Gynecology strengthened its research program in epidemiology and biostatistics with the appointment of Cande V. Ananth, PhD, MPH, as the Virgil G. Damon Professor of Obstetrics and Gynecology.

Dr. Ananth is a leading epidemiologist and biostatistician whose research focuses in three overlapping areas: epidemiology of perinatal outcomes, molecular basis of obstetrical complications of uteroplacental ischemic origins, and the development and applications of innovative statistical approaches to study and improve reproductive health.

“Dr. Ananth brings a highly unique body of knowledge and a vision for how to integrate the field of epidemiology and biostatistics into research endeavors across the department,” says Mary D’Alton, MD, chair of OBGYN. “We are pleased to see him assuming an integral role in the department’s future through the Damon Professorship.”

When Dr. Ananth learned of the appointment, he thought of his talented colleagues and mentors who have received similar appointments. “My first reaction was an incredible wave of humility; this was very humbling,” he says. “An endowed professorship offers recognition of your place in the field, and I am incredibly proud and honored to be ranked in the same echelon as so many researchers and clinicians I’ve come to admire and respect.”

The support provided by the Damon Professorship offers Dr. Ananth a new flexibility that will change his approach to future research investigations.

“It really reshapes the focus of your research pursuits,” he says. “You can think broader and be more selective about the projects you take on. This incredible opportunity opens doors for productive and efficient national and international collaborative pursuits.”

Dr. Ananth is collaborating with clinical OBGYN faculty who work in high-risk obstetrics to examine preterm delivery and the conditions

CONTINUED ON PAGE 16
On May 18, 2016, the Department of Obstetrics and Gynecology hosted the inaugural Sreedhar Gaddipati, MD, Memorial Lecture. Michael R. Foley, MD, Chairman of the Department of Obstetrics and Gynecology at Banner University Medical Center Phoenix, gave the lecture entitled, “Finally Understanding the Clotting Cascade and DIC.” Dr. Foley is considered a national authority on Critical Care Medicine in Obstetrics, and is Past President of the Society for Maternal Fetal Medicine (2008). He was also the recipient of the Society for Maternal Fetal Medicine Lifetime Achievement Award (2013).

The annual lecture, which was made possible by a generous donation from the Gaddipati family, is dedicated to the legacy of Dr. Sree Gaddipati, who was, and remains, an important figure in the Columbia University College of Physicians and Surgeons medical education program.

Dr. Gaddipati graduated from the State University of New York at Stony Brook’s School of Medicine and completed his residency in OB/GYN at Wayne State University, Hutzel Hospital/The Detroit Medical Center, Michigan. He then completed a fellowship in Maternal-Fetal Medicine at the Mount Sinai School of Medicine, then remained on the faculty. He joined CUMC in 2003 as a Clinical Assistant Professor in Maternal-Fetal Medicine and became the Director of Critical Care Obstetrics. He received numerous teaching awards and honors, including the Council on Resident Education in Obstetrics and Gynecology National Faculty Award for Excellence in Resident Education in 2000, 2003, and 2005.

Dr. Gaddipati’s talents were immeasurable, whether with his patients, medical students, residents, fellows or fellow faculty members, and his death on August 7, 2013 was unexpected and untimely. Remembering Dr. Gaddipati, CUMC maternal-fetal medicine specialist and former Chairman and Division Chief at Mt. Sinai Richard Berkowitz, MD, commented, “Sree was unfailingly optimistic and upbeat, always willing to step up and help a colleague, and virtually never without a smile on his face, which truly reflected the cheer in his heart. He never stopped increasing his medical knowledge and using it to provide exemplary care to all of his patients, which, along with his compassion, made him a truly superb clinician.” Lynn Simpson, MD, Hillary Rodham Clinton Professor of Women’s Health in the Department of Obstetrics and Gynecology at CUMC, added, “Dr. Sree Gaddipati was a wonderful human being. He was loved and respected by all who met him—he made a real difference in the lives of so many people.”

Established in 2015, the lectureship serves to fulfill the educational mission of the Department of Obstetrics and Gynecology with a particular focus on Dr. Gaddipati’s specialty in high-risk prenatal care. Attended by Dr. Gaddipati’s family, many of his former colleagues, and individuals newly introduced to his inspiring legacy, Dr. Foley’s lecture was engaging, dynamic, and a perfect start to this ongoing tribute to Dr. Gaddipati’s wonderful service to women’s healthcare. — Hope Yates
Seidenberg Center for Children’s Digestive Health Transforms Pediatric GI Care

There’s a new home for pediatric gastroenterology, hepatology, nutrition, and liver transplantation programs at NewYork-Presbyterian/Morgan Stanley Children’s Hospital: the Phyllis and Ivan Seidenberg Center for Children’s Digestive Health. The innovative center on the seventh floor of one of the nation’s most renowned children’s hospitals brings together pediatric digestive care experts from all disciplines in one spacious outpatient care facility.

The center was made possible by a generous gift from Ivan Seidenberg—former Chairman and CEO of Verizon Communications Inc. and a NewYork-Presbyterian trustee—and his wife, Phyllis. After learning that two of their grandchildren have celiac disease, the Seidenbergs donated $15 million to NewYork-Presbyterian/Morgan Stanley Children’s Hospital to promote the development of less invasive tests, more desirable treatments, and ultimately a cure for this common autoimmune disease induced by gluten. Many people who have celiac disease do not display classic symptoms and may not know they have it, including young children unable to communicate what they are feeling.

Ten million dollars of the Seidenberg’s gift supported the new facility, with the remainder funding the recruitment of new faculty as well as basic science, clinical, and translational research efforts aimed at advancing pediatric digestive care.

A Model for Coordinated Pediatric Care
At the Seidenberg Center, care is available for all types of digestive disorders, liver diseases, and nutritional disorders — in addition to celiac disease. Patients and their families can meet with all of the experts needed for their care, including gastroenterologists, hepatologists (liver specialists), surgeons (including bariatric and transplant surgeons), pediatric weight loss specialists, registered dietitians, and pediatric nurse practitioners. The 6,000-square-foot space was completely renovated for the dedicated facility.

“We are coordinating each patient’s care in one central and convenient location, making it easier for families to access our services,” explains Joel Lavine, MD, PhD, Director of Pediatric Gastroenterology, Hepatology, and Nutrition. “This center could become a model for other pediatric care centers at our hospital.”

Conditions treated by pediatric specialists at the center focus on:

- Celiac disease, providing endoscopic examination and intestinal biopsy and nutritional guidance
- Fatty liver disease, featuring a weekly specialty clinic and coordination with other services to help children with fatty liver disease achieve better liver health
- Inflammatory bowel disease, which needs to be diagnosed and treated early to promote a child’s optimal growth
- Morbid obesity, offering adolescent weight loss surgery and postoperative follow-up
- Tracheoesophageal fistula, a congenital disorder characterized by a connection between the trachea and esophagus which requires surgical repair
- Motility disorders, in which there is aberrant movement of contents through the digestive tract
- Short bowel syndrome, featuring intestinal rehabilitation and small bowel transplantation
- Liver disease and liver transplantation, with NewYork-Presbyterian/Morgan Stanley Children’s Hospital being a major referral center for pediatric liver transplantation

A variety of digestive care procedures are available through the Seidenberg Center, including motility testing and endoscopy. For example, some children who require an inpatient hospital admission to have a clean-out of the bowel will be able to have this procedure done as an outpatient in the Seidenberg Center. Biofeedback and cognitive behavioral therapy will be provided onsite in the center’s media rooms for anxiety-related gastrointestinal disorders, and educational videos will be available for patients and their families. Trainees who see patients in one of the center’s 15 exam rooms can gather in the center’s conference rooms to discuss cases, enhancing their educational experience. Other designated rooms enable doctors to make their notes and research pediatric conditions.

Promoting Growth, Advancing the Field
The increased space and expansion of the pediatric digestive care team could double the number of children seen for digestive health. In addition, millions of dollars being funneled into related research programs will enable NewYork-Presbyterian to recruit talented physician/scientists who will pursue groundbreaking investigations.

“We are grateful to the Seidenbergs for making this generous gift,” concluded Dr. Lavine. “By bringing together all of a patient’s digestive care providers in one location, the Seidenberg Center will catalyze collaboration and inform new avenues for research to improve the care of children with digestive disorders everywhere.” — Rosie Foster
**Media Mentions**

**SELF ONLINE**
**Using the Pill as Emergency Contraception**

So-called morning-after pills range in effectiveness, when and for how long they should be taken, and whether they require a prescription. Taking extra birth control pills after unprotected sex can also serve as emergency contraception, but “The amount you take depends on the brand you have,” adolescent medicine specialist Karen Soren, MD, told SELF. Women have used this FDA-approved “Yuzpe method” since the 1970s. For guidance on how to do it effectively, Dr. Soren pointed readers to Bedsider.org, a birth control support network launched by The National Campaign to Prevent Teen and Unplanned Pregnancy. Because condoms are the best way to prevent sexually transmitted infections, but are not as good at pregnancy prevention as other methods like the Pill, Dr. Soren and others recommend doubling up on safe-sex methods.


**CBS NEWS AND CTV NEWS (CANADA)**
**Gluten Free Diets Can Be Risky For Kids**

Parents who put their children on a gluten-free diet could be damaging their kids’ health. While gluten-free diets are critical for the 1 percent of Americans with the autoimmune disorder celiac disease, millions of people now shun gluten in the belief that it’s a “healthier option.” In commentary published in The Journal of Pediatrics, pediatric gastroenterologist Norelle R. Reilly, MD, addresses the potential risk for children whose parents place them on a gluten-free diet. She later spoke with CTV News about the piece. “Gluten-free packaged foods frequently contain a greater density of fat and sugar than their gluten-containing counterparts,” Dr. Reilly said, which may explain why many people who start gluten-free diets later become overweight or develop obesity and insulin resistance. “Gluten-free diets are appropriate for some individuals but certainly not for all,” Reilly said. “Guidance from an experienced physician or dietitian can really go a long way to sort through the abundance of information available regarding this diet.”

http://bit.ly/2c3f689

http://cbsn.ws/1Ooj4nZ

**NEW YORK DAILY NEWS**
**Rare OB Procedure Can Prevent Miscarriage**

When women are not able to carry a baby to term because of an “insufficient” or “incompetent” cervix, specialists sometimes perform an unusual procedure—an abdominal cerclage or cervical stitch, which reinforces the cervix, allowing the fetus to grow to term. This condition only happens in 1 to 2 percent of all pregnancies. Annette Perez-Delboy, MD, director of Labor and Delivery, told the Daily News in an article about one of her patients who had lost two previous pregnancies. There are usually no warning signs of imminent pregnancy loss, Dr. Perez-Delboy said. “They come for a sonogram and the doctor says your cervix is short, or they are dilated,” or in more extreme situations, patients have told her, “I was doing fine and I went to the toilet and the baby came out.” Dr. Perez-Delboy’s patient delivered a healthy baby boy following abdominal cerclage. “I wanted to prove I could do it,” she said.

http://nydn.us/1Xd6U3e

**ALLURE**
**Vaginal Cleansing Does More Harm Than Good**

A new study by the National Institute of Environmental Health Sciences of more than 41,000 women links douching with a nearly double incidence of ovarian cancer. Commenting on the study in Allure, gynecologic oncologist Ana Isabel Tergas, MD, noted that correlation isn’t causation. “We need to keep in mind that douching could always be a marker for the cancer,” she said. “It could be something else that they’re experiencing that is the cause of ovarian cancer. It could just be related.” She added, “I definitely recommend against douching to all our patients. We’ve known for a long time that douching can alter the vaginal flora, the bacteria that are normally found within the vagina, which causes a protective acidic environment. And douching causes an overgrowth of bacteria and leads to infections.”

http://bit.ly/2c9EW6m

**WALL STREET JOURNAL**
**Declining Use of Gyn Surgical Tool**

Power morcellators, a tool used by gynecologic surgeons to slice up benign growths called fibroids, were widely used until the U.S. Food and Drug Administration warned that they could inadvertently spread uterine cancer in 2014. Since then, their use in minimally invasive hysterectomies has declined from 13.5% to 2.8%, and a question about whether their absence would impact the overall complication rate of hysterectomies became the focus of a new study. “Fortunately we didn’t see an increase in the complication rate which is definitely reassuring,” said Jason Wright, MD, Director, Division of Gynecologic Oncology, and the lead author of the research letter, which was published in the Journal of the American Medical Association. Although the complication rate did not increase, the rate of abdominal hysterectomy—a more invasive surgery—did increase, leading Dr. Wright and others to emphasize the importance of helping women to understand the benefits and risks of the various surgical options available to them.

http://on.wsj.com/2e7Kt7b

**NEWSWEEK**
**Defining the Genetics That Cause Autism**

There is no single feature that is present in all—or even a majority of—people with autism, a major roadblock to meeting the many different needs of those on the autism spectrum and also to understanding why the disorder develops in the first place. Through a new study called SPARK—Simons Foundation Powering Autism Research for Knowledge—a group of researchers led by Wendy Chung, MD, PhD, director of precision medicine at the Irving Institute for translational medicine at Columbia University, are embarking on the largest study of the disorder to date. They are building on an effort to sequence the exome—the portion of the genome where almost 85 percent of the mutations known to cause human diseases are located—and are digging through patient medical histories to identify genetic underpinnings of autism. But even among those who share the same genetic mutations, one individual may have severe disabilities while another has only mild behavioral problems. “In a way, you’re looking at many, many rare disorders,” Dr. Chung told Newsweek.

Honors & Awards

Elaine Abrams, MD, (Child and Adolescent Health) was one of six CUMC faculty members who received grants in the fourth round of awards from the President’s Global Innovation Fund for her work on “Adolescents Living with HIV: Engaging and Empowering Through Photography.” The program supports Columbia faculty who are developing projects that increase opportunities for research, teaching, and service around the world.

Sumeet Banker, MD, (Child and Adolescent Health) was voted Attending of the Year by the Pediatrics Department residents.

Natali Douglas, MD, PhD, (Obstetrics & Gynecology) received a five-year grant from the National Heart, Lung, and Blood Institute for her research project, “Role of Angiogenenic Notch in Uterine Decidualization and Placentation.”

The Pediatric ECMO Program at NewYork-Presbyterian/Morgan Stanley Children’s Hospital has earned the Platinum Level Excellence in Life Support Award from the Extracorporeal Life Support Organization (ELSOL). Just five extracorporeal life support (ECLS) centers in the world received platinum status in the current award period. The Platinum level signifies that the hospital’s ECMO program has high quality standards and processes, specialized equipment and supplies, defined patient protocols, and provides advanced education for all staff members.

Cristina Fernandez, MD, (Child and Adolescent Health) was selected for the National Institute of Minority Health and Health Disparities 2016 Health Disparities Research Institute Program. She also was accepted by the American Academy of Pediatrics into the Young Physicians Leadership Alliance, a national leadership development program for early career physicians.

Jenny Francis, MD, (Child and Adolescent Health) was elected president of the New York Society for Adolescent Health and Medicine for the 2016-17 terms.

Joji Fujisaki, MD, PhD, (Hematology, Oncology, and Stem Cell Transplantation) received a five-year grant from the National Heart, Lung, and Blood Institute for his research project, “Immune Privilege of the Hematopoietic Stem Cell Niche.”

Anne Gershon, MD, (Infectious Diseases) was made an honorary member of the European Pediatric Infectious Diseases Society, an honor only a few Americans have received. She will also receive the 2016 Award for Lifetime Contribution to Infectious Diseases Education from the American Academy of Pediatrics.

The Hereditary Hemorrhagic Telangiectasia (HHT) Center at CUMC and NewYork-Presbyterian/Morgan Stanley Children’s Hospital was named a Center of Excellence—the only one in the tristate region—by the Cure HHT Foundation. Emilio Arteaga-Solis, MD, PhD (Pulmonology), leads CUMC’s pediatrics team at the center.

Esi Lamoué-Smith, MD, (Gastroenterology, Hepatology, and Nutrition) was appointed a Councillor on the Microbiome and Microbial Diseases in the Gastrointestinal Tract section of the American Gastroenterological Association Institute Council.

Philip LaRusso, MD, (Infectious Diseases) received the Babies Hospital Distinguished Alumnus award.

Rudolph Leibel, MD, (Molecular Genetics/Naomi Berrie Diabetes Center) received a five-year grant from the National Institute of Diabetes and Digestive and Kidney Diseases for “New York Nutrition Obesity Research Center.” He also received a five-year training grant from the National Heart, Lung, and Blood Institute.

Fangming Lin, MD, (Nephrology) is the Principal Investigator of a research project, “Role of Autophagy in Mal-adaptive Renal Repair Following Acute Kidney Injury,” which received a three-year grant from the National Institute of Diabetes and Digestive and Kidney Diseases.

Michael Rosenbaum, MD, (Molecular Genetics/Naomi Berrie Diabetes Center) received a two-year grant from the New York State Department of Health to underwrite the work of The Columbia Center for Pediatric Obesity Care and Research.

Karen Soren, MD, (Child and Adolescent Health) and colleagues in the Society of Adolescent Health and Medicine developed an app that was voted a Gold Winner in the Best App category by PM360 Pharma Choice Awards.

Elisha Waldman, MD, (Medical Director, Pediatric Palliative Care/Hematology, Oncology, and Stem Cell Transplantation) was chosen as Chair Elect of the Pediatric section of the American Academy of Hospice and Palliative Medicine.

Ronald Wagner, MD, (Obstetrics & Gynecology) received a five-year grant from the National Institute of Child Health and Human Development for “Maternal-Fetal Medicine Units (MFMU) Network.”

Upcoming Events

FRIDAY, OCTOBER 14

The 38th Stephanie Lynn Kossoff Memorial Lecture
11:00 AM – 12:00 PM
P&S AMPHITHEATRE 1, 1ST FLOOR, 630 WEST 168TH STREET

“Precision Medicine for Cystic Fibrosis.” Wendy Chung, MD, PhD, Kennedy Family Associate Professor of Pediatrics and Medicine, and Director of Precision Medicine, Irving Institute for Translational Research.

TUESDAY, OCTOBER 18

The 21st Annual Sylvia P. Griffiths, MD Lectureship and Teaching Day
9AM - 3:30 PM
VIVIAN AND SEYMOUR MILSTEIN FAMILY HEART CENTER, 173 FORT WASHINGTON AVE

Featuring Jan M. Quaegebeur, MD, PhD, Director, Pediatric Cardiac Surgery, CUMC.

FRIDAY, OCTOBER 21

The Steve Miller Medical Education Day
8:30 AM TO 1 PM, ALUMNI AUDITORIUM, 630 WEST 168 ST

Featuring the Steve Miller Lecture on Humanism in Medicine delivered by Sheri Fink, MD, PhD, entitled, “Ethical Dilemmas in Disasters and Emergencies: Observations from a Practitioner turned Reporter.”

WEDNESDAY, NOVEMBER 9

Hope & Heroes Annual Dinner
THE LIGHTHOUSE AT CHELSEA PIERS

SATURDAY, DECEMBER 3

Continuing Medical Education
7:15 AM TO 5:00 PM
THE EDUCATION AND CONFERENCE CENTER, NEW YORK-PRESBYTERIAN/VIVIAN AND SEYMOUR MILSTEIN FAMILY HEART CENTER, 173 FORT WASHINGTON AVENUE

Specialty Updates for the General Pediatrician. A full-day program for general pediatricians interested in expanding their knowledge in a variety of subspecialty areas, with new or updated guidelines or practice parameters that impact primary pediatric care.
A Luminary in OBGYN

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Ultrasound—that has absolutely revolutionized the practice of obstetrics.”

During the years in which ultrasound technology was evolving, Dr. Berkowitz was practicing in New Haven and working with John Hobkins, MD, who is considered by many to be the father of obstetrical ultrasound in the US. “I was fortunate to be at Yale during the 1970s and early 1980s where I had the opportunity to partner with Dr. Hobkins during the early years of discovering the potential of ultrasound,” he says. “We worked hand-in-hand to study the use of this modality and to optimize it, and we were involved in the very, very early years of recognizing its diagnostic potential. So I just happened to be present in the right place at the right time to be involved in that early work, which has, I believe, set the stage for the extraordinary number of things that have benefited pregnant women as a result.”

Once the stage was set, Dr. Berkowitz was then involved in the very early recognition that ultrasound could be used as a critically important guide for performing invasive procedures in utero, he adds. Among those procedures are amniocentesis, fetal blood sampling and transfusions, aspiration of loculated fluid within fetal compartments, fetal tissue biopsies, placement of fetal shunts, selective fetal reductions, and multifetal pregnancy reductions.

Another collaboration, with Jim Bussel, MD, a pediatric hematologist at the Weill-Cornell Medical Center, led to Dr. Berkowitz’s work on neonatal alloimmune thrombocytopenia. Studying its natural history, and developing a non-invasive therapeutic regimen that essentially cures this potentially devastating disorder prior to birth, is another of his major accomplishments. “I had the good fortune to collaborate with Jim Bussel over nearly three decades,” he says. “During that time we developed a way to study a rare disease, without grant support, by enlisting perinatologists across the United States and Canada to use our study protocols as the work evolved.”

But Dr. Berkowitz believes that his most important contribution to obstetrics and gynecology has been to mentor several generations of residents, fellows, and junior attendings. “They will hopefully keep the ball rolling by adding to our knowledge of how to optimally help mothers and their fetuses during pregnancies at risk for poor outcomes,” he says. “Their achievements will almost certainly make anything I have done pale in comparison.” — Beth Hanson

New Damon Professor

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that lead to early delivery, including preeclampsia, fetal growth restriction, and placental abruption. Dr. Ananth and his colleagues are searching for clues through new approaches to unravel the complex interplay of genetic, molecular, and environmental factors that result in ischemic placental disease and preterm delivery. He is also studying the clinical outcomes of early births, for both mothers and newborns.

“Dr. Ananth has been involved in perinatal research for many, many years, and is one of the most recognized epidemiologists and biostatisticians in our field,” says Ronald Wapner, MD, Professor of OBGYN and Vice Chair for Research. “He is also the first faculty member with this expertise in our department full-time, which is a credit to our research environment and to the efforts over the last several years to expand our research team.”

In the long-term, Dr. Ananth seeks to streamline the role of epidemiology and biostatistics in the department’s research infrastructure by centralizing administrative processes, such as patient recruitment and data management, and improving coordination among investigators. This work extends to collaborations with investigators both within and outside Columbia—Dr. Ananth serves on the steering committee of the Prenatal Research Consortium (PRC; perinatalresearchconsortium.org), a multi-center partnership of leading perinatal and women’s health researchers. The goal of the PRC is to establish consistent protocols for data collection in order to pave the way for future comparison research and follow-up studies. When data-driven research adheres to a common set of collection standards, the results are both more useful for other researchers and more likely to lead to evidence-based changes in clinical practice.

Dr. Ananth adds that the endowed professorship will go a long way in making these visions a reality. — John Uhl

Hope & Heroes Walk and Golf Tournament

Earlier this summer, Hope & Heroes had two memorable and successful fundraising events—the Hope & Heroes Walk and the Hope & Heroes Golf Tournament. The Hope & Heroes Walk took place on Pier 84 in Manhattan on Sunday, May 22 and brought out over 1,200 patients, families, friends, doctors, nurses and advocates in support of the pediatric cancer and blood disorders program at Columbia. Two weeks later, on Monday, June 6, over 200 golfers joined us at Winged Foot for a wonderful day on the course for an important cause. Together, these events raised over $850,000 to support clinical care and research for the Division of Pediatric Hematology, Oncology, and Stem Cell Transplantation.