

Pedi Press

A Quarterly Publication of the Department of Pediatrics
Baylor College of Medicine

Volume 9, Issue 1, Part II

Winter 2020

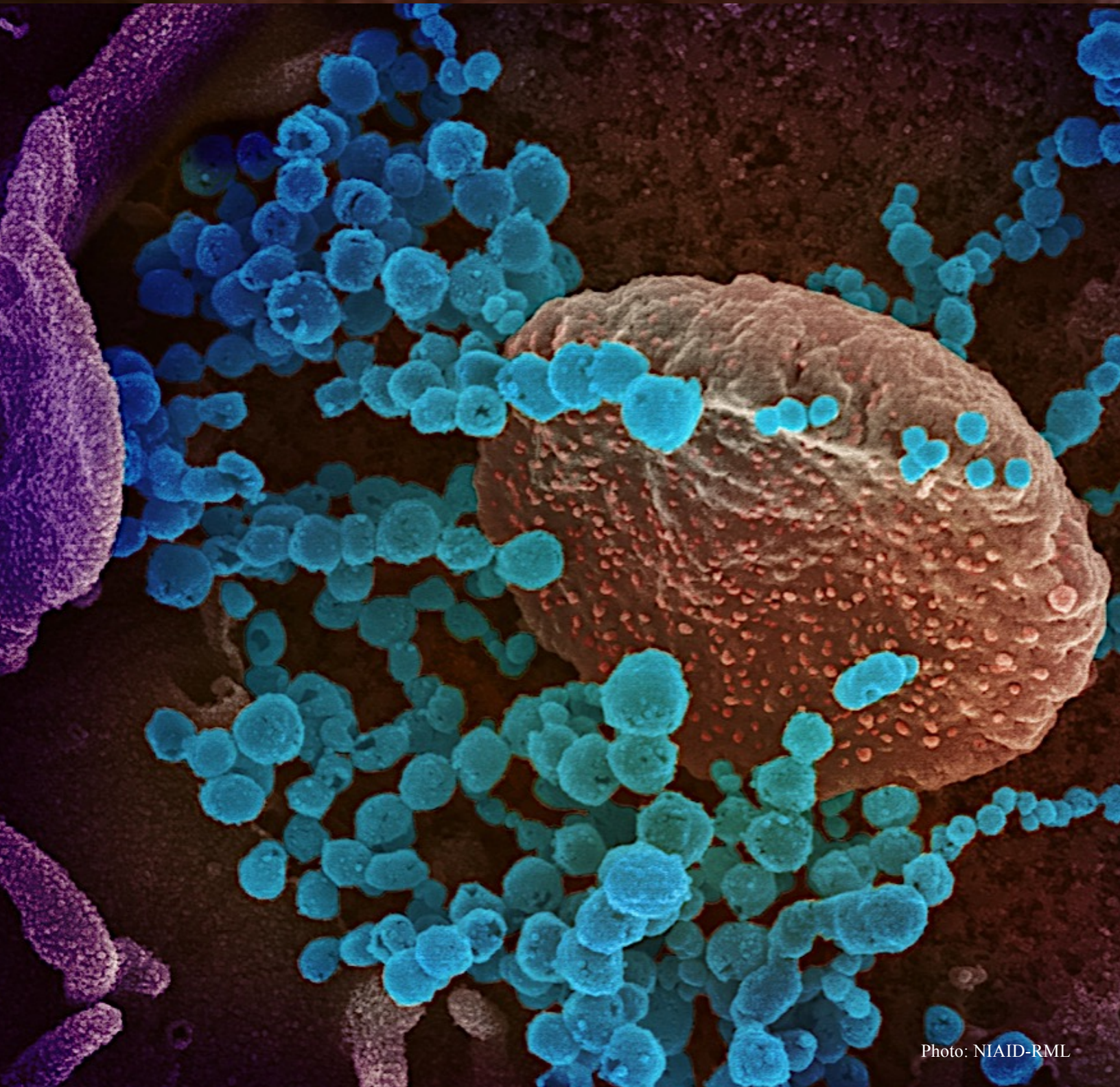


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A Quarterly Publication of the Department of Pediatrics

Volume 9, Issue 1, Part II

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Next Deadline
JUNE 5, 2020
Send articles and photos to
bligon@bcm.edu



DEPARTMENT NEWS FACULTY, FELLOWS, RESIDENTS, & STAFF

Interim Leaders Appointed



Dr. Gordon Schutze, Professor and Executive Vice-Chair of Pediatrics, has been named interim Chair of Pediatrics, and **Dr. Jim Versalovic**, Milton Finegold Professor of Pathology & Immunology and Pathologist-in-Chief, has been named interim Physician-in-Chief of Texas Children's Hospital, effective February 25, 2020. Dr. Schutze received his MD from Texas Tech University Health Sciences Center School of Medicine, and did his residency at Baylor College of Medicine. From 1991 - 2006, he served on the pediatric faculty of

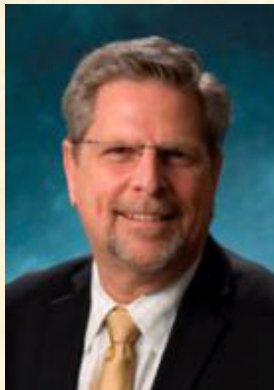


the University of Arkansas for Medical Sciences, where he was Chief of the Division of Pediatric Infectious Diseases before being recruited to BCM. He has served the department as Program Director and Co-Director for the Pediatric Global Health Residency program, Vice Chair for Educational Affairs, and Executive Vice Chairman, in addition to other positions. He is Executive Vice President of the Baylor International Pediatric AIDS Initiative (BIPAI) and an editor on *Rudolph's Pediatrics Textbook*, 23rd edition. He is board certified in general pediatrics and pediatric infectious diseases by the American Board of Pediatrics and is a fellow of the ABP. Dr. Versalovic received his MD with Honors at BCM in 1995 and Ph.D. in Cellular and Molecular Biology at BCM in 1994. He pursued clinical pathology/medical microbiology residency training at the Massachusetts General Hospital and Harvard Medical School, and completed a postdoctoral research fellowship at MIT.

Numerous Individuals Recognized at Department Meeting

During the Zoom online Department Meeting, held on March 26, 2020, Dr. Gordon Schutze, Interim Department Head, announced the following promotions and awards:

Dr. Mark A. Gilger was awarded **The Arnold J. Rudolph Lifetime Excellence in Teaching Award**. Dr. Gilger graduated from Creighton University School of Medicine in 1980 and trained in Pediatrics at the University of Rochester School of Medicine from 1980-1983. He completed his fellowship in Pediatric Gastroenterology and Nutrition at BCM and is a graduate of the BCM Master Teacher Program. He has served as Chief of Service, Gastroenterology, Hepatology and Nutrition and Chief of the Gastrointestinal Institute at TCH. In addition to serving as Vice Chair of the Department of Pediatrics, BCM, Dr. Gilger is the first full-time Pediatrician-in-Chief for The Children’s Hospital of San Antonio.



Dr. Douglas Ris (Psychology)

Distinguished Emeritus Professor



Dr. Tom Baranowski (Nutrition)



Dr. Henri Justino (Cardiology)

Professor



Dr. Regina Lantin-Hermoso (Cardiology)

Associate Professor

Dr. Kiyetta Alade (Pediatric Emergency Medicine) **Dr. Binoy Shivanna** (Neonatology)
Dr. Tracy Patel (Endocrinology)
Dr. Elaine Fielder (Pediatric Emergency Medicine) **Dr. Huay-Ling Lo** (Public Health Medicine)

2020 Women of Excellence

Faculty

- Dr. Amy Hair (Neo)
- Dr. Melissa Carbajal (Neo)
- Dr. Elena Campo (Cards)
- Dr. Jordana Goldman (CCM)
- Dr. Binita Patel (PEM)
- Dr. Lakshmi Srivaths (PHO)

Dr. Tiffany McKee-Garrett
(Neo)

Fellow

•Dr. Annamarie Arias Shah
(Neo)

Resident

- Dr. Rebecca Hetrick
- Dr. Sanemba Aya Fanny

2019 Department of Pediatrics Annual Education Awards

Excellence for Presentation at Grand Rounds



Rayne H. Bruce, MD



Keila Fredricks, MD, MPH

Alpha Omega Alpha Elections

Faculty

- Dr. Michelle Lopez (PHM)
- Dr. Tim Porrea (PHO)
- Dr. Kathy Gannon (Neo)

Fellows

- Dr. Auda Plaud Gonzalez (Renal)
- Dr. Marina Masciale (PHM)

2019 Department of Pediatrics Annual Education Awards

Excellence in Teaching



Shweta Parmekar, MD

American Pediatric Society

2020 New Members

- Alison Bertuch, M.D., Ph.D.
- Andrea Cruz, M.D., M.P.H
- Henri Justino, M.D.
- Tammy Kang, M.D., M.S.C.E.
- Anna Mandalakas, M.D., Ph.D.
- Bhagavatula Moorthy Ph.D.

2019 Department of Pediatrics Annual Education Awards

Award of Achievement in Educational Innovation



Joseph Lubega, MB, Ch.B, MPH

Young Investigator Awards

Binoy Shivanna, MD, PhD

Andras Heczey, MD

Christopher Rhee, MD, MS

Vivien Sheehan, MD, PhD

Keila Lopez, MD



2019 Department of Pediatrics Annual Education Awards

Excellence in Teaching by a Non-Pediatric Faculty Member



Raegan D. Hunt, MD, PhD

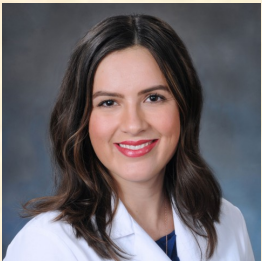
New Executive Director for Baylor-Malawi Named



The Baylor College of Medicine Children's Foundation-Malawi (Baylor-Malawi) Board of Directors unanimously selected **Ms. Phoebe Nyasulu** as the next Executive Director for Baylor-Malawi, effective January 1, 2020. Phoebe has been in a leadership role with Baylor-Malawi for more than 7 years. She originally joined the foundation as the Administration Director of the Baylor Tingathe Outreach Program, and supervised its expansion from 30 to 130 sites across eight districts, before being appointed as the program's Deputy Director. She has previously held senior management positions at Word

Alive Commission for Relief & Development and Malawi Against Physical Disabilities. Her technical expertise includes project design and management, and she has vast experience in operations management, finance and human resources. She most recently served as Chief Operations Officer and interim Executive Director following the retirement of **Dr. Peter Kazembe**.

New Chief Medical Officer for BIPAI Announced



The new Chief Medical Officer for BIPAI is **Dr. Heather Haq**, Assistant Professor and a pediatric hospitalist at Texas Children's Hospital. She received her undergraduate degree from McGill University with a major in international development, completed her Master of Health Science degree in international public health from the Johns Hopkins Bloomberg School of Public Health, and her medical degree from the University of Wisconsin School of Medicine and Public Health. She completed the four-year combined

Pediatrics/Child Global Health residency at Baylor College of Medicine, including one year of clinical training with Baylor College of Medicine Children's Foundation-Uganda. Having worked in the international public health sector for more than a decade, Dr. Haq is a pediatric HIV expert and brings a wealth of experience in implementing community-based public health programming, designing health communication strategies, and leading advocacy work in low- and middle-income countries. Most recently, she worked for Texas Children's Global HOPE program.

BIPAI Welcomes New Team Members

The new Texas Children's Global Health Corps Coordinator is **Lynnea Roth**. She works primarily with Global Health Corps physicians, Global Child Health residents and short-term learners traveling to work and learning at BIPAI network sites. Prior to joining BIPAI, Lynnea served as a Program Officer at the NIH, NIAID/Division of AIDS for nine years, in which most of her work revolved around clinical site oversight of their HIV/AIDS clinical research sites.

Ratania Green is Senior Coordinator of Business Operations for BIPAI. She assists with grants management, travel, purchasing, invoicing and supports BIPAI and the Texas Children's Global Tuberculosis program. Ratania joined Baylor College of Medicine in 2017 and started with the BIPAI team in December 2019.

Catrina Gates is also Senior Coordinator of Business Operations for BIPAI, focused on communications, marketing and knowledge sharing within the BIPAI network. Her primary role will be to support communications, marketing, and knowledge sharing within the network. She earned her BS in Community Health from George Mason University in Virginia, and MPH from Boston University School of Public Health. She previously served as a graduate Project Intern for BIPAI during the summer of 2017. She has a background in community assessment and program implementation, and is passionate about eliminating health disparities and promoting equitable access to healthcare.

Faculty Recognized for Child Advocacy

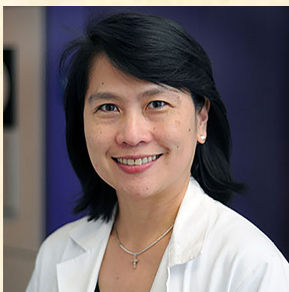


Faculty Members were selected as part of the 30 most influential leaders in the history of Children at Risk, a “non-partisan research and advocacy organization dedicated to addressing the root causes of poor public policies affecting children.” During its 30-year history, Children at Risk has made great strides to improve the lives of children through Texas, including fighting for an agenda to improve educational outcomes for all children, increase quality of health and well-being, create specific strategies to stop human trafficking, and other initiatives. Faculty from the Department of Pediatrics selected for this honor were Dr. Jeff



Starke (left), recognized “As one of the early leaders and board members of the organization [who] had a significant impact on the growth of CHILDREN AT RISK into the statewide leader it is today and Dr. Chris Greeley (right), “A longtime board member, [who] is currently the executive editor for the *Journal of Applied Research for Children*. He is also one of the founders for our Center for Parenting and Family Wellbeing. Also named was former Section Chief Dr. Angelo Giardino, “A longtime board member of Children at Risk and senior leader at Texas Children's Hospital. Dr. Giardino helped inaugurate the *Journal for Applied Research on Children* and the *Journal for Family Strengths*.”

Faculty Interviewed for Article Honoring Women’s Contributions to Pediatric Cardiology



Dr. M. Regina L. Lantin-Hermoso, Professor and Medical Director of the outpatient cardiology clinics at TCH, was one of two specialists interviewed for contributions to an article honoring the pioneering women who opened the field of pediatric cardiology. The article, which focused on the work of Drs. Maude Abbott (below, left) and Helen B. Taussig (below, right), was published in the March issue of *Cardiology Magazine*,* notes that these women “cleared the hurdles placed in front of women interested in science, eventually earning medical degrees and laying the foundation for the modern specialty of pediatric cardiology.”



Dr. Ami B. Bhatt, who directs the adult congenital heart disease program at Massachusetts General Hospital in Boston focused on Dr. Abbott’s contributions, whereas Dr. Lantin-Hermoso was interviewed specifically about Dr. Taussig. Dr. Taussig worked with surgeon Dr. Alfred Blalock and technician Vivien Thomas to develop the Blalock-Thomas-Taussig shunt, which improves pulmonary blood flow in “blue babies” to allow them to survive. She published *Congenital Malformations of the*



Heart, a landmark publication that helped establish pediatric cardiology as an independent medical specialty, in 1947. Dr. Lantin-Hermoso is quoted as saying of Dr. Taussig, “Taussig is near and dear to any woman who is a pediatric cardiologist because she is our role model. She is the mother of pediatric cardiology.”

* <https://www.acc.org/latest-in-cardiology/articles/2020/03/01/08/42/feature-pediatric-cardiology-a-specialty-spurred-by-the-groundbreaking-work-of-women-the-legacies-of-maude-abbott-md-and-helen-b-taussig-md-facc>

Dr. Hotez Reports on Costs Posed by Unvaccinated Children



On January 9, 2020, *The New York Times* published an opinion piece by **Dr. Peter Hotez**, Professor and renowned vaccine expert, “comparing the dangerous effects of three diseases with the minimal side effects of their corresponding vaccines.” In

the article, Dr. Hotez noted that being unvaccinated carries the danger of contracting an illness and even dying, whereas the corresponding vaccine is extremely unlikely to lead to side effects. He looked at three diseases specifically: measles, influenza, and cervical cancer

With regard to *measles*, the disease has resurged globally in conjunction with falling vaccination rates and is now widespread in several countries in Europe. In the Pacific island of Samoa, with a population of approximately 200,000 people, almost 5,700 cases of measles were recorded between September and January, with at least 83 deaths, almost all of which were children. These illness and deaths did not have to occur. In the United States, measles was considered eliminated in 2000, but by 2019 the number of cases had increased greatly, due primarily to public resistance to receiving the measles-mumps-rubella (MMR) vaccine. Measles virus is highly contagious and often the first childhood disease to emerge after decline of vaccination rates. Recent research has revealed that the virus can suppress the immune system, rendering children more susceptible to serious infections such as pneumonia and flu, even after they have recovered from the measles. Much of the resistance to having one’s child inoculated has come from misinformation, particularly from an article published in *The Lancet* in 1998, and later retracted, implying a link between the measles vaccine and the prevalence of autism. Contrariwise, “evidence from at least six studies involving more than one million children” revealed that the MMR vaccination does not cause autism.

Dr. Hotez mentions his own daughter with autism, noting that scientists have identified more than 100 genes linked to the disorder, and that through whole exome sequencing, they have been able to identify

her autism gene. Results of studies indicate that neurodevelopmental processes leading to autism begin in pregnancy, well before the child receives a first vaccine.

A second disease Dr. Hotez addressed is the *flu*, which resulted in an estimated 45 million cases nationwide during the 2017-18 epidemic, according to the CDC. Some 810,000 people were hospitalized and 61,000 people, including 643 children, died. Most of the children who died had not received the flu vaccine. Despite these frightening statistics, many Americans choose not to vaccinate, thinking the vaccine is dangerous or can even cause the flu. The risk a severe reaction to the vaccine, such as Guillain-Barre syndrome is miniscule, and influenza itself can bring on the condition.

The third concern addressed is a deadly *cervical cancer*, which has the potential to be eliminated in Australia in the next two decades, a result of a vaccination campaign and increased number of cervical screenings. Contrariwise, in the United States, the rates of vaccination for human papillomavirus (HPV) have been low compared to other common vaccines, a result of costs and lack of access. This vaccine, too, has been the target of a campaign based on misinformation, mainly that it causes teenage depression and suicide. Some people even assert that it leads to sexual promiscuity, but there is no evidence to support the charge. The actual risk is that fewer than 1 in 10,000 vaccinated individuals will faint (possibly due to fear of the injection), or have an allergic reaction, which is possible but one is more likely to be struck by lightning. Dr. Hotez noted that, “Thousands of young women in this country are being condemned to cervical cancer (and both men and women to throat, anal, and other cancers) by being deprived of the HPV vaccine, which is both highly effective and safe.”

In conclusion, he urged medical professions to find a way to counter the anti-vaccine media and to mount a vigorous pro-vaccine advocacy response to rebuild public trust, noting that “our children’s lives are on the line.”

Dr. Munoz Consulted on Value of Using Tamiflu



“Don’t dismiss treatment that could be effective based on fear and misinformation.”

-- Dr. Flor Munoz

Tamiflu has been touted as a breakthrough in treating the flu, but many parents are hesitant to use it, much like many parents have become “vaccine hesitant.” The consequences of hesitating made headline news recently when NBC reported on a Colorado mother’s son, who died from the flu after she sought other means for treating the flu. Although her physician had prescribed Tamiflu, the mother reached out to a group on Facebook called “Stop Mandatory Vaccination” for alternative therapies. Among the therapies offered by well-meaning readers were breast milk, thyme, and elderberry, none of which has been shown scientifically to stop the flu.



In order to ascertain the pros and cons of Tamiflu, SELF, a website devoted to health, did an investigation into the scientific information, which included soliciting input from **Dr. Flor Munoz**, Associate Professor and infectious disease specialist. Dr.

Munoz explained that Tamiflu, an oral antiviral drug approved by the U.S. Food and Drug Administration for patients two weeks old and older, works by attacking the flu virus in the body, thereby diminishing symptoms and reducing the likelihood of potential life-threatening complications.

An important note pointed out by SELF is that Tamiflu is not a replacement or substitute for the flu vaccine, although it may be used as a preventive treatment for certain individuals who have been exposed to the virus. The AAP recommends Tamiflu as the treatment of choice for prevention and control of influenza in children. The CDC recommends that Tamiflu be given within 48 hours of the onset of symptoms, although it can be useful after that window of opportunity, especially for children who are hospitalized or at high risk for developing complications. For most of the population, the flu vaccine remains the best defense against influenza.

The side effects tend not to be serious and may include nausea and vomiting, stomach pain, nose bleeds, headache, and fatigue. To preclude or reduce the seriousness of the side effects, Tamiflu should be taken with food. Also, as is the case with any medication, an allergic reaction may occur; it manifests as a skin rash, hives, blisters, itching, difficulty breathing, and/or swelling of the face, eyes, lips, tongue, or throat. More extreme but rare complications have included behavioral side effects such as hallucinations, delirium, and overall abnormal behavior, but these types of neuropsychiatric symptoms may also be complications of the flu virus itself.

Dr. Anagnostou Interviewed On New Drug for Peanut Allergies

Palförzia™

Peanut (*Arachis hypogaea*)
Allergen Powder-dnfp



“The availability of the first approved drug for treating peanut allergy with oral immunotherapy is a major advancement in the field of food allergies.”

-- Dr. Aikaterini Anagnostou



An FDA-approved study of a drug for treating peanut allergy, Palförzia, was completed last summer by a patient who spent 3 years in the peanut desensitization study at Texas Children’s Hospital. The patient is not alone in having a sensitivity

to peanuts. An estimated 1.2 percent of the overall U.S. population and approximately 2.5 percent of the pediatric population suffers from the allergy, according to the American Journal of Managed care. It is, according to the journal, the most common food allergy in children, affecting some 25 percent of children with food allergies; and it is the leading cause of allergy-related deaths in children.

Dr. Aikaterini Anagnostou, Associate Professor and Director of the Food Immunotherapy Program at TCH, was interviewed to get her opinion on the new drug, the first to be approved for treating peanut allergy with oral immunotherapy. Dr. Anagnostou explained that increasing doses of Palförzia are administered over the course of several months, under medical supervision. The aim is to “desensitize” the patient to peanuts and potential threatening events.

Dr. Anagnostou also noted that “Most peanut-allergic patients are able to undertake oral immunotherapy treatment, but there are certain contraindications to the drug, so not everyone will be eligible.”

Unfortunately, the side effects include occasional several allergic reactions. Hence, the FDA will require that patients be enrolled in a special safety program and will take Palförzia only under supervision in a certified health center. Although the drug will not cure the allergy, it will provide protection from accidental exposures. Hence, patients will need to keep their EpiPens, even while taking the medication

The drug was developed by Aimmune Therapeutics, and the treatment’s list price is \$890 a month, with insurance covering a portion of the cost. The company said that it will offer a patient co-pay assistance program. The company’s President and CEO, Jayson Dallas, commented that, “This is a defining moment for the peanut allergy community and for Aimmune Therapeutics, and we are excited to bring the first FDA-approved treatment for peanut allergy to patients and their families.

Faculty briefs....

Dr. Maria Elena Bottazzi, Professor and Associate Dean of the National School of Tropical Medicine, was selected as an Academy of Medicine, Engineering and Science of Texas (TAMEST) Protégé for 2020.

Ganga Gokulakrishnan - was awarded the Star Faculty Award for Excellence in Patient Care. She will be recognized for her accomplishment during Baylor's Awards Day celebration on Wednesday, May 20, 2020 at 3:30 p.m. in Cullen Auditorium.

Dr. Charleta Guillory -

-- was honored for her service as Chair of the DSHS Newborn Screening Advisory Committee.

-- was named Co-Chair of the AAP Texas Pediatric Society Fetus and Newborn Committee, 2020.

Dr. Peter Hotez, Dean of the National School of Tropical Medicine

-- and Dr. Joseph Petrosino, Chair of Molecular Virology & Microbiology, provided an update on the College's research and public information efforts related to the coronavirus public health emergency.

-- met with Mayor Sylvester Turner, President Paul Klotman, Dr. Laila Woc-Colburn, and Dr. Robert Atmar to plan the city's response should there be patients who test positive for the virus in Houston.

Dr. Katherine Y. King, Assoc. Prof., received the St. John's School, Distinguished Alumna. This award is given to an alumnus/a in recognition of outstanding achievements or contributions to St. John's, the community, the state, or the nation.

Dr. Krithika Lingappan, Asst. Prof., was awarded an R01 grant by the National Heart, Lung and Blood Institute to look into the molecular mechanisms behind sex-specific differences in neonatal hyperoxic lung injury and repair. This proposal will address knowledge gaps behind the sexual divergent incidence of bronchopulmonary dysplasia and lay the foundation for future sex-specific.

Dr. Tiffany McKee-Garrett, Asst. Prof., was named Co-Chair of the AAP Texas Pediatric Society Fetus and Newborn Committee, 2020.

Dr. Bhagavatula Moorthy, Professor

-- has successfully received approval for the first ever superfund grant for Baylor College of Medicine and the Texas Medical Center in Houston through the National Institute of Environmental Health Sciences (NIEHS), NIH.

-- has been appointed as the inaugural Kurt Randerath, M.D., Endowed Chair at Texas Children's Hospital.

Dr. Shaine Morris, Asst. Prof., and Dr. Joseph Coselli were named the medical chairs of the Marfan Foundation's 2020 Walk for Victory. This one-mile walk raises money and awareness for Marfan syndrome, a genetic connective tissue disorder that affects the heart, eyes, bones and spine.

Dr. David Poplack, Professor, was honored with the first-ever Alex's Lemonade Stand Foundation Childhood Cancer Lifetime Achievement Award at the Foundation's Lemonade Ball.

Dr. Jacquelyn Powers, Asst. Prof.,

--was selected by the American Society of Hematology to receive the ASH Scholar Award. The program funds hematologists who conduct basic, translational and clinical research that furthers the understanding and treatment of blood disorders. She will receive \$150,000.

--was selected as an ASH Clinical Research Training Institute Faculty for 2020.

Dr. Cliona Rooney, Professor,

--was honored as one of four 2020 Women Leaders in Science by BioHouston, a local organization seeking to position the city as a leader in life science and biotechnology commercialization.

--was one of 68 new fellows elected to American Academy of Microbiology for 2020. Fellows are an honorific leadership group within the academy, elected annually through a selective, peer-review process based on their records of scientific achievement and original contributions that have advanced microbiology.

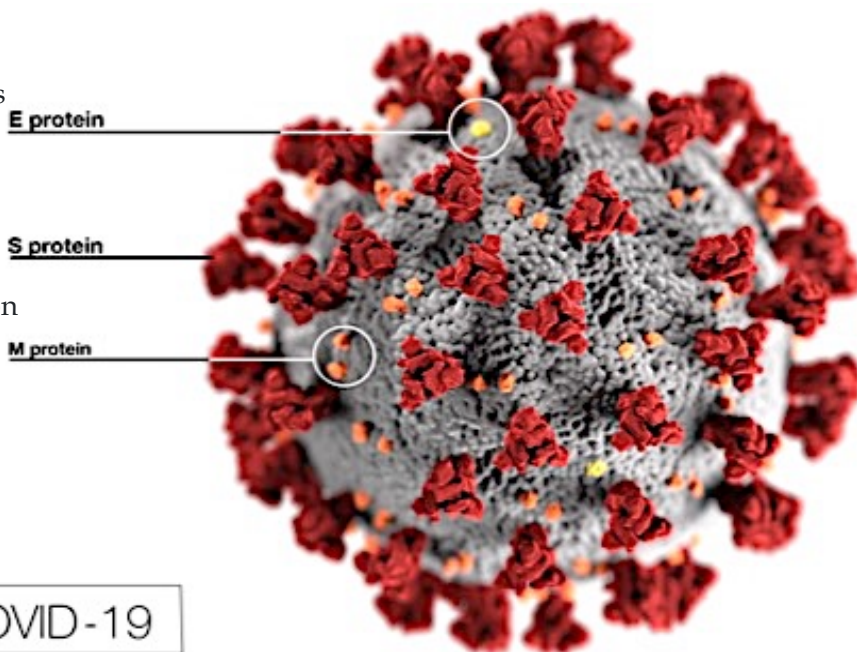
Dr. Binoy Shivanna, Asst. Prof., was selected as an Editorial Apprentice with the Pediatric Research's Editor Apprentice program for 2020.

Dr. Lakshmi Srivaths, Professor, was selected as an Honorary Member of the Foundation for Women and Girls with Blood Disorders. In this role, she will help advance the foundation's efforts in improving clinical care, education and research in the field of adolescent females with bleeding and thrombophilia/thrombosis. She has been involved with the foundation for 10 years in various roles, including as a member of the Medical Advisory Council and chair of the Education and Advocacy Sub-committee.

Dr. Venée Tubman, Asst. Prof., received a grant for "Characterization of B Lymphocyte Deficiency in Pediatric Sickle Cell Disease."

Dr. Andrew Yee, Asst. Prof., was selected by the American Society of Hematology to receive the ASH Scholar Award. The program funds hematologists who conduct basic, translational and clinical research that furthers the understanding and treatment of blood disorders. He will receive \$150,000.

This illustration, created at the Centers for Disease Control and Prevention (CDC), reveals ultrastructural morphology exhibited by coronaviruses. Note the spikes that adorn the outer surface of the virus, which impart the look of a corona surrounding the virion, when viewed electron microscopically. In this view, the protein particles E, S, and M, also located on the outer surface of the particle, have all been labeled as well. A novel coronavirus, named Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), was identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China in 2019. The illness caused by this virus has been named coronavirus disease 2019 (COVID-19).



Content providers: Alissa Eckert, MS; Dan Higgins, MAMS

DEPARTMENT NEWS RESEARCH

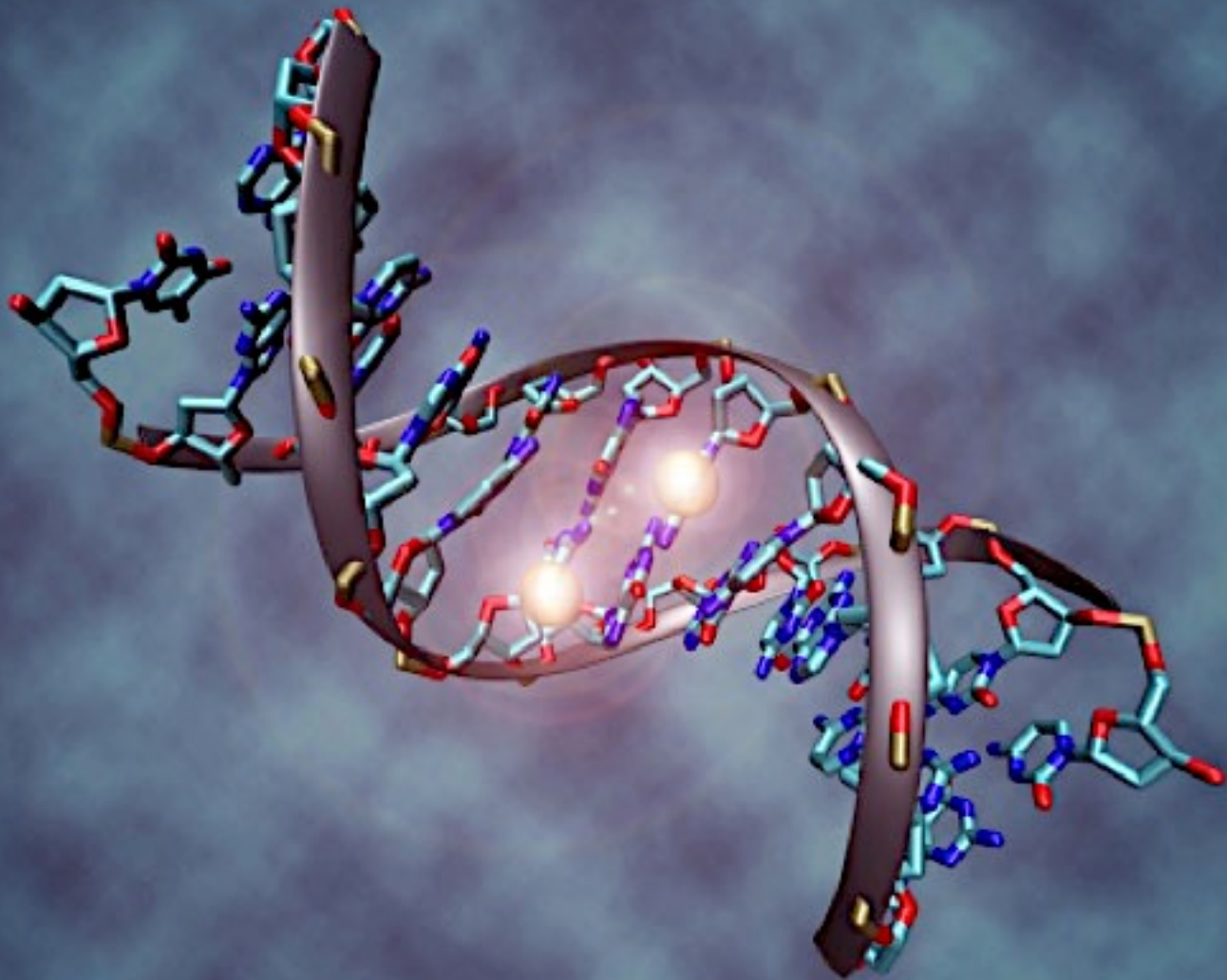
Commentary on Article on COVID-19 Focuses on Impact to Pediatrics



Drs. Andrea T. Cruz and Steven L. Zeicher reviewed an earlier article published by Dong and colleagues • in *Pediatrics* on the coronavirus and extracted three salient points with regard to the effects of COVID-19 on children: 1) whereas children are less likely to become severely ill, compared to older adults, subpopulations of children have an increased risk for developing more significant illness (e.g., studies of children with ARDS vs. human metapneumovirus [China study] and children with respiratory tract infections [Norway]); 2) the attributable risk for developing severe disease from COVID-19 in

children is difficult to discern, as some studies have revealed that children in whom coronaviruses are detected may have co-infections in as many as two thirds of cases; also children without virological confirmation were more likely to have severe disease than were children in whom COVID-19 was detected, possibly because their symptoms were caused by other pathogens; and 3) children may play a major role in community based viral transmission, as data suggest they may have more upper respiratory tract vs. lower respiratory tract involvement, and there is evidence of shedding in the stool for several weeks after diagnosis, which can cause fecal-oral transmission of the virus, particularly among infants and children who are not toilet trained, and prolonged shedding has implications for community spread in various facilities.

• Dong Y, Mo X, HuY, et al. Epidemiological Characteristics of 2143 Pediatric Patients with 2019 Coronavirus Disease in China. *Pediatrics* 2020 doi: 10.1542/peds.2020-0702



Researchers Study Differences in ESAM and NESAM DNA

Dr. Neil Hanchard, Assistant Professor, and colleagues, along with researchers in Malawi and Jamaica, studied DNA methylation differences between edematous severe acute malnutrition (ESAM) and nonedematous SAM (NESAM) from a molecular perspective. ESAM and NESAM are two distinct forms of severe acute childhood malnutrition, from which more than two million children die each year, worldwide. The two conditions have distinct symptoms: ESAM involves body swelling and extensive dysfunction of multiple organs, including the liver, blood cells, and the gut, as well as skin and hair abnormalities, whereas NESAM typically presents with weight loss and wasting.

DNA methylation is biological process whereby methyl chemical groups are added to the DNA molecule, changing the activity of a DNA segment without changing the sequence. Previous studies have shown that turnover of methionine is slower in patients with ESAM than in those with NESAM.

Because methionine is a central ingredient of 1-carbon metabolism, a metabolic pathway key to DNA methylation, lower turnover suggested the possibility of alterations in DNA methylation.

The study revealed that children acutely ill had ESAM genes with levels of DNA methylation significantly different from those in patients with NESAM, and the levels always were lower. Of the genes analyzed, 161 had highly significant reduced levels of mythylation in ESAM, when compared with the same genes in NESAM.

This study also investigated whether gene expression differed between ESAM and NESAM. Their findings showed reduced overall methylation in ESAM resulted in complex patterns of changes in gene expression: expression of some genes was enhanced with reduced methylation, whereas it was not in other genes. The results of the study were published in *Nature Communications*.

Study Reports Effects of Excess BMI on Islet Autoimmunity



Dr. Maria Jose Redondo, Associate Professor, and colleagues recently published results of a study that revealed sustained excess BMI increases the risk of type 1 diabetes (T1D) in autoantibody-positive relatives without diabetes of patients. They also tested whether elevated BMI accelerates the progression of islet autoimmunity before T1D is diagnosed. The study involved 706 single autoantibody-positive pediatric TrialNet participants, aged 1.6 -18.6 years. They calculated the cumulative excess BMI (ceBMI) for each participant, based on longitudinally accumulated BMC equal to or greater than 85th age- and sex-adjusted percentile. Using recursive partitioning analysis and multivariable modeling, they defined the age cut point differentiating the risk for progression to multiple positive autoantibodies. At baseline, 25 percent (n=175) of the children had a BMI equal to or greater than 85th percentile. The range for ceBMI was -9.2 to 15.6 kg/m². Younger age was found to increase the progression to multiple antibodies, with age cutoff of 9 years, as defined by recursive partitioning analysis. In participants older than 9 years, the effect of ceBMI on progression to multiple autoantibodies was not significant, regardless of their HLA type. The results support that elevated BMI may exacerbate islet autoimmunity prior to patients presenting clinically with T1D, particularly in children with lower risk based on age and HLA. Their conclusion was that interventions to maintain normal BMI may prevent or delay the progression of islet autoimmunity. Authors on the article were Christine Ferrara-Cook, Susan Michelle Geyer, Carmella Evans-Molina, Ingrid M. Libman, Dorothy J. Becker, Stephen E. Gitelman, Maria Jose Redondo, the Type 1 Diabetes TrialNet Study Group.

Review Reveals Medical Overuse in Established and Emerging Practices

A systematic review by researchers at BCM reported that timely scrutiny of established and emerging practices can help identify areas of medical overuse, a common occurrence in pediatrics that may lead to unnecessary care, use of resources, and even harm to patients. Identifying these areas of overuse can empower clinicians to reconsider the balance of harms / benefits of the medical care they provide. The researchers, Drs. Nathan M. Money, Alan R. Schroeder, and **Ricardo A. Quinonez**, Associate Professor and Chief, Pediatric Hospital Medicine, performed a literature review to identify the most important areas of pediatric medical overuse in 2018. The used a structured MEDLINE search and manual table of contents to review selected pediatric journals for the 2018 literature to identify articles pertaining to pediatric medical overuse. The search consisted of a search for articles with the medical subject headings of *health services misuse* or *medical overuse*, or article titles containing the terms *unnecessary*, *inappropriate*, *overutilization*, or *overuse*. Only articles published in English were included; articles using the terms *overuse injury* or *overuse injuries* were excluded. An identical search was performed using Embase with the additional Embase term, *unnecessary procedure*. Each article underwent scrutiny by three independent raters for quality of methods, magnitude of potential harm, and number of patients potentially harmed. Based on scores and appraisals of overall potential harm, ten articles were identified. The review identified both established (e.g., antibiotic prophylaxis for urinary tract infections, routine opioid prescriptions, prolonged antibiotic courses for latent tuberculosis, and routine intensive care admission and pharmacologic therapy for neonatal abstinence syndrome) and emerging practices (post-discharge, nurse-led home visits, probiotics for gastroenteritis, and intensive cardiac screening programs for athletes) that may warrant deimplementation. The authors emphasized that “deimplementation of disproven practices and careful examination of emerging practices are imperative to prevent unnecessary resource use and patient harm.” The article was published in *JAMA Pediatrics*.



Results of Screening Infants for Biliary Atresia Published



Researchers at Baylor College of Medicine, Texas Children’s Hospital, The Women’s Hospital of Texas, and the University of Texas Rio Grande Valley School of Medicine recently reported findings on the diagnostic yield of newborn screening

for biliary atresia with direct or conjugated bilirubin measurements to evaluate the association of using screening with clinical outcomes. **Dr. Sanjiv Harpavat** is first author on the study, which was reported in March in *JAMA*. The findings are important because treating biliary atresia in newborns early in their lives can delay or even prevent the need for liver transplant. However, biliary atresia is difficult to detect during its early stages so, in turn, treatment usually is not initiated until later.

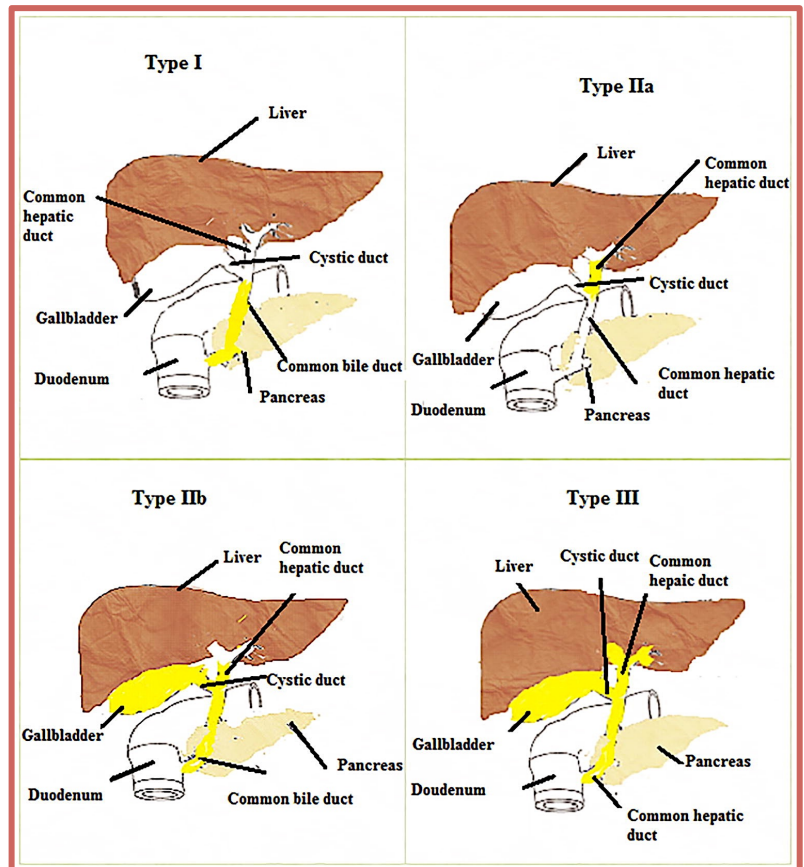
The cross-sectional study involved 124,385 infants born at 15 Texas hospitals between January 2015 and June 2018. A pre-post study was made on 43 infants who underwent the Kasai portoenterostomy as treatment for biliary atresia at the region’s largest pediatric hematology center before or after implementation of screening. Final follow-up occurred on July 15, 2019. The screening had two-stages: 1) all newborns were tested within the first 60 hours of life, with a positive screening result defined as bilirubin levels exceeding derived 95th percentile reference intervals, and 2) infants who had positive screening results in stage 1 were retested at or before the 2-week, well-child visit, with a positive screening defined as bilirubin levels greater than that in the stage 1 result or greater than 1 mg/dL.

Primary outcomes were sensitivity, specificity, positive predictive value, and negative predictive value based on infants testing positive in both stages. The reference standard was biliary atresia diagnosed at the region’s pediatric hepatology centers. The primary outcome of the pre-post study was the age the infants underwent the Kasai portoenterostomy for treatment.

Screening identified the 7 known patients with biliary atresia, with a sensitivity of 100%, a specificity of 99.9%, a positive predictive value of 5.9%, and a negative predictive value of 100%. In the pre-post study, 24 infants were treated before implementation of screening, and 19 infants were treated after screening. The age of infants who underwent the Kasai portoenterostomy was significantly younger after screening was implemented (mean age, 56 days [SD, 19 days]), compared to 36 days [SD, 22 Days] after screening; between-group difference was 19 days ($P=.004$).

The researchers concluded that newborn screening with direct or conjugated bilirubin measurements detected all known infants with biliary atresia in the study, although the 95% CI around the sensitivity estimate was wide, and the study design did not ensure complete ascertainment of false-negative results.

Information extracted from the abstract:
 Harpavat S, Garcia-Prats JA, Anaya C, Brandt ML, Lupo PJ, Finegold MJ, Obuobi A, ElHennawy AA, Jarriel WS, Shneider BL. (2020) Diagnostic Yield of Newborn Screening for Biliary Atresia Using Direct or Conjugated Bilirubin Measurements. *JAMA* 323(12):1141-1150.





Due to the fluid situation with regard to scheduling events during the coronavirus pandemic, the calendar for this issue has been deleted.



The next issue of *Pedi Press* is scheduled to be published in June/July of 2020.

The deadline for articles and photos at this time is June 5, 2020.



On March 30, 2020, Dr. Gordon Schutze, Interim Chairman, sent out these words of encouragement to the Department:

*Dear Faculty,
Good morning and Happy Doctors Day to all of you. Today is a day to celebrate the contributions of physicians like yourselves who care for the citizens of the world. With what is going on today in this country I cannot think of a better time to say Thank You for all you are doing.
Gordon*