# EDITOR'S FOCUS

Early Career Investigator

Congratulations to Paolo Montaldo, the Early Career Investigator for August. Dr. Montaldo hails from Naples, Italy, but completed his clinical and research training in the United Kingdom. An experience with an infant born after placental abruption sparked his interest in neonatal encephalopathy. In this issue, Montaldo and colleagues provide evidence that tight glucose control is necessary to mitigate some of the untoward long-term outcomes arising from neonatal encephalopathy. On reflection, he suggests that persistence and good support structures are essential for success in research. See pages 147 and 218

## The unseen problem of late-pregnancy alcohol exposure

Alcohol consumption during pregnancy can have detrimental consequences for the developing fetus throughout gestation, and no safe quantity of alcohol exposure has been identified. Few studies have sought to quantify the prevalence of prenatal alcohol exposure. Using dry blood spots to identify phosphatidylethanol, Umer and colleagues identified a surprisingly high prevalence of 8.1% for the state of West Virginia, with some regions having a prevalence as high as 17%! In an accompanying Editorial, Burd suggests that nearly 35,000 pregnant women in the United States consume alcohol on the day of delivery each year. Bakhireva's Comment article describes opportunities to better understand the prevalence of prenatal alcohol exposure with dry blood spots. These findings bring much needed political, clinical, and research attention to this important, yet understudied problem. (Photo: Jamie Grill/Getty.) See pages 312, 142, and 159

Profiling fetal alcohol syndrome
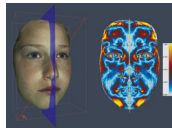
The characteristic facial features associated with fetal alcohol syndrome (FAS) are well described. Using 3D scans of 30 children with FAS, Blanck-Lubarsch and colleagues used orthodontic profiles to demonstrate that the children had retrognathic jaws along with more subtle dysmorphology, but did not identify facial asymmetry as a common feature of children with FAS. The authors suggest that such profile analysis is straightforward and may be useful in the diagnosis of the syndrome. An accompanying Family Reflections piece walks us through the lifelong challenges of fetal alcohol spectrum disorder. See pages 243 and 334

## A noninvasive assessment of pediatric pulmonary hypertension
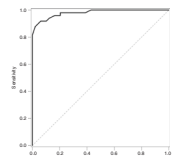
Accurate assessment of right ventricle (RV) size and function is critical for guiding treatment in children with pulmonary hypertension (PH). Koestenberger et al. suggest that a simple index incorporating the longitudinal component of RV adaptation and end-systolic dimension would provide valuable insight into RV function in pediatric PH. In their examination of 49 children with PH, they found that the right ventricular end-systolic remodeling index (RVES RI) is increased in children with PH and is highly predictive of PH severity. This index may be useful in the longitudinal care of children with PH, particularly when other echocardiographic features of PH are absent or insufficient to estimate RV systolic pressure. See page 285

## Quick and easy pulmonary function testing in neonates
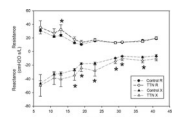
Assessing pulmonary function in neonates is exceedingly difficult and requires sophisticated equipment, limiting its widespread use. Klinger et al. provide feasibility data on the use of forced oscillation technique (FOT) to measure airway resistance and reactance in term newborns over time. The advantages of this technique include ease of use, rapid results, and no need for sedation. The authors show that airway reactance is lower, but resistance is similar, in neonates with transient tachypnea of the newborn during the first 24 hours after birth when compared with unaffected term controls. See page 293

CSF metabolites tell the story
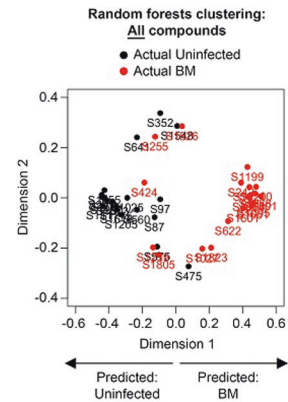
Prompt identification of bacterial meningitis in infants is critical for appropriate antimicrobial therapy and relies heavily on nonspecific early signs (e.g., leukocytes in the cerebrospinal fluid (CSF)) or gold-standard culture results that may be hampered by the early administration of broad antimicrobials. In the search for a more specific and rapid approach to identifying true bacterial meningitis, Gordon et al. used machine learning to analyze CSF metabolites and cluster infants with culture-positive bacterial meningitis. Infants with bacterial meningitis may be accurately identified from as few as seven metabolites! In an accompanying Comment, Wynn explains why the promise of CSF metabolomics to specifically identify bacterial pathogens may be a success story for precision medicine. See pages 184 and 155

A 3D scaffold for MSCs restores kidney function
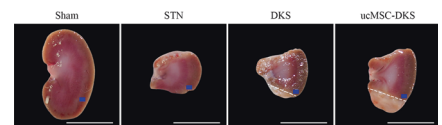
Fibrosis is a hallmark of chronic kidney disease, and mesenchymal stem cells (MSCs) may suppress kidney fibrosis by modulating transforming growth factor-β (TGF-β) signaling. However, homing and retaining MSCs in the kidney are difficult with traditional methods of MSC delivery, including intravascular injection. Utilizing the subtotal nephrectomy model of renal failure, Hu et al. infused decellularized kidney scaffolds with umbilical cord–derived MSCs and demonstrated that transplantation of these cell patches to remnant kidneys improves renal function and reduces kidney fibrosis via a TGF-β-dependent mechanism. These 3D tissue scaffolds may be compounded for therapeutic use and tissue repair. Accompanying this article is an Insights Image depicting the mechanism for MSC-induced suppression of renal fibrosis via TGF-β signaling. See pages 192 and 336