



CAMI MESA

Overheard: Fluid Dynamics

In 2003, **Michael Moritz** (shown above), an MD, and his fellowship mentor, Juan Carlos Ayus, rocked the parenteral nutrition boat with a paper in *Pediatrics*. They presented evidence against the use of hypotonic IV solution (fluid with less sodium than a patient’s plasma)—a practice that had been entrenched in pediatric hospital care for 50 years. They argued that the solution could cause hyponatremia, or low sodium levels, and eventually neurological problems and death. Today, Moritz says, “over 20 prospective studies in over 2,000 children” have proven him right—that isotonic fluid, with sodium concentration matching patient plasma, is appropriate for most patients.

Moritz, now clinical director of pediatric nephrology at Children’s Hospital of Pittsburgh of UPMC and professor of pediatrics, published an October review article in the *New England Journal of Medicine* about the physiological principles of IV fluid selection. “Changing fluid practice is a simple and safe measure which can be taken to improve patient safety and will save lives,” he says.

What made you realize that a change in IV solution administration was needed?

Dr. Ayus and I observed that almost all hospitalized patients were at risk for hyponatremia from elevated hormone levels that prohibit the kidneys from releasing water. With that, I wanted to know why hypotonic IV solution became standard of care. There was really no data to support the practice—it was based on the sodium concentration of breast milk and cow’s milk.

What tactics did you take to manage the controversy?

Physicians were fearful that isotonic fluids would cause fluid overload and hypernatremia [high sodium levels]. We thought, if we repeat our message and explain it in very clear terms, eventually it would catch on. We wrote letters to the editor, commentaries, and reviews correcting misconceptions. Fortunately, this sparked a renewed interest in the topic, and investigators around the world began conducting studies and verifying our concept. Now, societies are developing consensus guidelines on fluid therapy in children and adults, when before there were none.

—Interview by Kristin Bundy

Faculty Snapshots

The University of Pittsburgh School of Medicine boasts two recipients of the National Cancer Institute’s Outstanding Investigator Award this year, which provides funding throughout seven years. (Pitt’s Thomas Kensler, a PhD, received the award last year.)

Olivera Finn will use her \$6.2 million in Outstanding Investigator funding to support the development of new cancer vaccines. A Distinguished Professor of Immunology and Surgery, Finn investigates the ways our bodies identify and fight cancer. Finn, a PhD, was the founding chair of Pitt’s Department of Immunology. She also received the American Association of Immunologists Lifetime Achievement Award this year.



Finn

Patrick Moore will use his \$6.4 million of funding to support his investigations into how viruses turn normal cells into cancer, among other areas of cancer virology. Moore, an MD/MPH who is the American Cancer Society Distinguished Professor of Microbiology and Molecular Genetics, leads the University of Pittsburgh Cancer Institute’s Cancer Virology Program and holds the Pittsburgh Foundation Chair in Innovative Cancer Research.



Moore

The Association for Psychological Science has named Rebecca Price a “Rising Star.” Codirector of the Pittsburgh Neuroimaging and Treatment Outcome Lab, Price works at the intersection of clinical and neurocognitive research. She develops novel ways to treat anxiety, depression, and suicidality using computer-based interventions and pharmacological approaches. Price is a PhD assistant professor of psychiatry.



Price



Snyderman

Carl Snyderman presented the Semon Lecture to the Royal Society of Medicine in London. The November 2015 lecture was titled “Paradigm Shifts in Skull Base Surgery and the Creative Process.” Snyderman, an MD professor of otolaryngology and neurological surgery, is codirector of the Center for Cranial Base Surgery at UPMC. He is internationally recognized for helping to develop a technique to remove brain tumors through the nose with an endoscope, which limits trauma to the brain, eliminates scars from facial incisions, and shortens recovery times.

—Elizabeth Hoover