FROM **MRGO** TO **MY LITTLE PONY**,

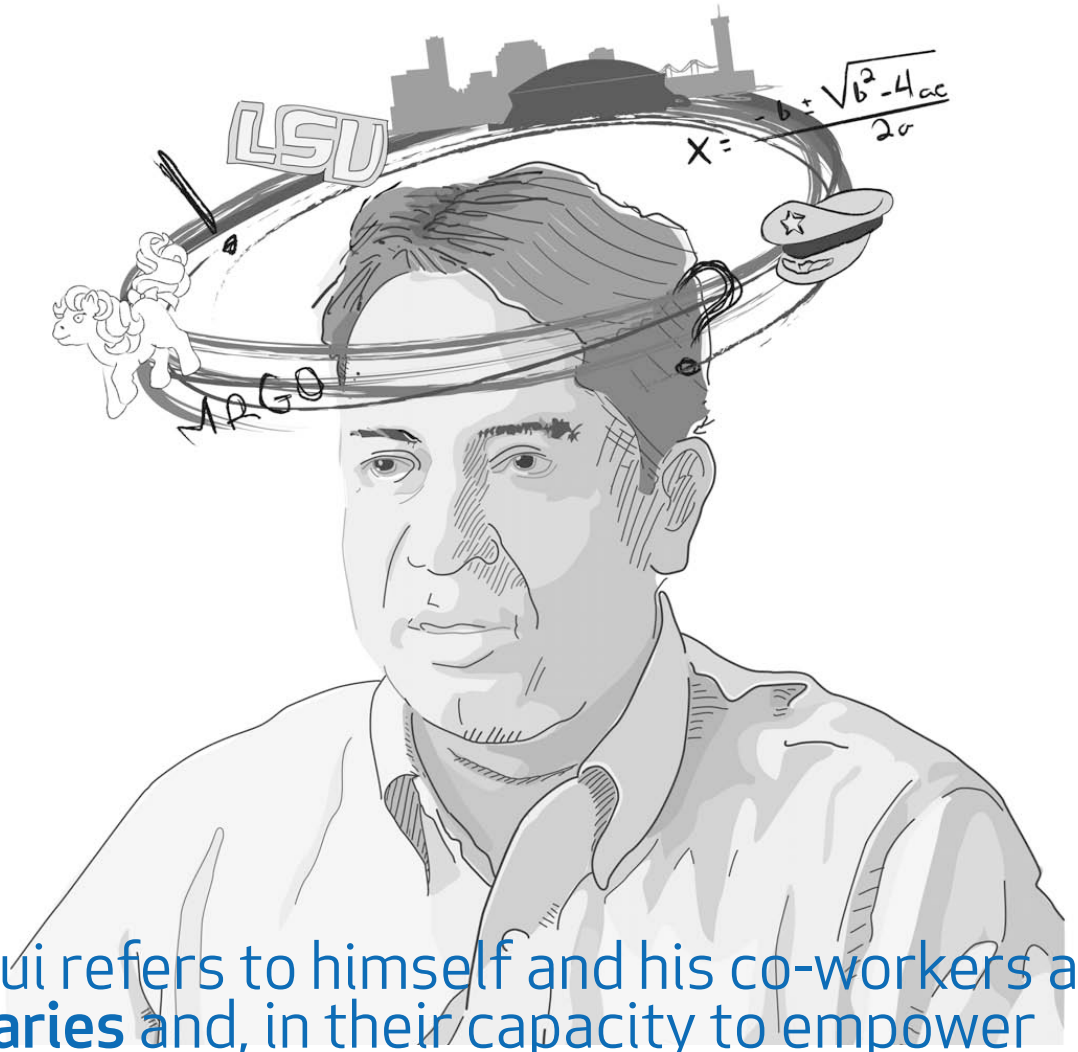
TRACKING A HURRICANE EXPERT'S **FAR-REACHING** RADAR

by **Julie Sinclair Eakin**

"IT WAS VERY PAINFUL TO WATCH PEOPLE GO THROUGH SUFFERING WHEN IT WAS AVOIDABLE," storm-surge expert Hassan Mashriqui remembers, as he steers a mini-van through his hometown of Baton Rouge two and a half years after Hurricane Katrina. The succulent foliage that virtually obscures the street signs here couldn't be in greater contrast to the still-barren, toxic grounds of New Orleans's Lower Ninth Ward, just 90 minutes away. "They are always one storm behind," he says of the federal government. "They won't learn until the next one." As a research scientist at the Louisiana State University Hurricane Center, Dr. Mashriqui and his colleagues were in a position to anticipate the disastrous events of August 2005.

Three months before Katrina hit, he delivered an alarming PowerPoint presentation to the Regional Planning Commission in New Orleans, detailing the potential for precisely the devastation wreaked there soon after. Mashriqui based his hydrodynamic graphics on information from the fictional hurricane model Pam, devised by Dr. Will Schafer of the National Oceanic & Atmospheric Administration in response to FEMA's 2004 request for such an experiment. Pam was designed to embody deadly characteristics: She would progress along Hurricane Betsy's track of 1965 and be slow-moving, thereby causing the most damage. The goal of the exercise was to see what would happen if the bowl of the city was filled to overtopping, just like a bathtub. Breaching the levees was not even considered.

On May 19, 2005, Mashriqui warned his listeners in New Orleans of the particular danger posed by MRGO (the Mississippi River Gulf Outlet). He predicted that the U.S. Army Corps of Engineers' 36-foot-deep navigation canal connecting Lake Pontchartrain to the Gulf of Mexico would collect storm surge in its narrow confines, where the water height would build and essentially unleash a tempest in a teapot. He called "Mr. Go" the city's Trojan horse. To considerably lessen and redirect the tremendous funneling action a moderate storm could create there, Mashriqui suggested employing a temporary obstruction, such as a barge filled with gravel, that could be sunk at the channel's entrance until a permanent solution was advanced. The following March, a prominent general in the Army Corps of Engineers dismissed Mashriqui's theory as "urban legend," and today, a lawsuit currently in the courts has the general reexamining those words. "This was not the Big One—not even close," Mashriqui told the *Washington Post* in late October 2005, when the failure of the levees and MRGO had been made pub-



Mashriqui refers to himself and his co-workers as **missionaries** and, in their capacity to empower people (often on a voluntary basis), the term is apt.

lic, and his prediction of a storm surge amplified by 20 to 40 percent validated. Fortunately, three leaders present at his pre-Katrina lecture asked him to give the same talk to their local county officials, a decision that ultimately aided their evacuation processes during the storm.

Perhaps surprisingly for someone whose dissertation at LSU was called "Hydrodynamic and Sediment Transport Modeling of Deltaic Sediment Processes," Mashriqui is gifted at explaining complexities to the uninitiated. Take his description of storm surge: wind-driven waters that come with a storm toward the coast, the height and duration of which determine its impact. "Information is power," he repeats, like a mantra, several times during our talk. Mashriqui refers to himself and his co-workers as missionaries and, in their capacity to empower people (often working after hours on a voluntary basis), the term is apt.

Teaching future researchers is another important means of spreading the word for Mashriqui. Under his tutelage, one of his former thesis students, Stephanie Pedro, created an innocent-looking map with a collection of pink dots populating a crescent-shaped landscape. They represent those places in New Orleans, pre-Katrina, where 50 percent of the residents lived below the national poverty level; they also stand in for those without a high school education, or a vehicle. The chilling discovery, however, revealed in hindsight by Mashriqui and Pedro's statistical data, is that the map also predicted the exact location of those hardest hit during the hurricane.

As Mashriqui speaks while negotiating traffic, I reach under my leg on the van's car seat to find a tiny purple plastic horse from the animated television series "My Little Pony." It's becoming clear that the anguish this man feels over not having been able to help those storm victims resonates on multiple levels: as a civil engineer and native of Bangladesh, where tropical cyclones abound, as a scientist and educator, a father of young children, and a survivor. He acknowledges that a kind of post-traumatic stress became a mantle he and his colleagues wore following Katrina, and that several of that group sought therapy.

Mashriqui's latest work focuses on extension services, community-outreach events such as the aforementioned lectures. One of the things he intends to communicate so that people can better understand what they're facing is that contrary to what the numbers imply, a Category 5 storm isn't necessarily more perilous than a Category 4. The measurements of wind speeds in the former may actually register a tiny, fast-moving space within a storm that doesn't cover much ground. A more accurate means of indicating a storm's potential for damage is currently being developed and will undoubtedly contribute to the kind of valuable information with which Mashriqui hopes to arm his listeners.

TYLER BARBER