A GOOD, CLEAN FIGHT

How a Tech Alumnus Created the 5 Categories of Hurricanes

JOSH STEWART
CIVIL AND ENVIRONMENTAL ENGINEERING

After three relatively quiet years, forecasters predict we'll see something close to a “normal” year in terms of hurricane activity in the Atlantic Ocean this year — 10 to 16 named storms, with up to four of those considered major hurricanes.

“Major” means a Category 3, 4, or 5 storm, vernacular we wouldn’t have without School of Civil and Environmental Engineering alumnus Herbert Saffir.

In fact, it's his name, along with his friend Robert Simpson's, that gives the hurricane classification system its official title: the Saffir-Simpson Hurricane Wind Scale.

Saffir's five-category system correlates a storm's wind speeds with the kind of damage those winds will inflict on structures. For most people who live along the coast in the southern U.S., they’re the gospel by which you decide whether an approaching storm merits plywood on the windows and evacuation, or a trip to the store for bottled water, batteries, and canned goods so you can hunker down and wait it out.

But, 50 years ago, a Category 1 storm might have been simply called a “minor” hurricane and a Category 5 a “major” one. Saffir realized the problem when he was writing a report commissioned by the United Nations.

“They wanted a study on low-cost housing throughout the world that was subject to tropical cyclones, hurricanes,” he told the South Florida Sun-Sentinel in 2001. “That's when I got into setting forth rules for buildings, small buildings, residential buildings, and I also set up the hurricane scale, because there was no scale that corresponded to the [well-known] earthquake scales.”

The U.N. eventually published Saffir's report, including the hurricane wind scale that ended up buried more than 150 pages in, he told a Miami Herald reporter in 2005.

How a Tech Alumnus Created the 5 Categories of Hurricanes

see HURRICANE, page 3

Police Chief Discusses Responding to Active Threats

MICHAEL HAGEARTY
INSTITUTE COMMUNICATIONS

Georgia Tech extends sympathy to the faculty, students, and staff at the University of California-Los Angeles, the latest educational institution to respond to gun-related violence. In light of this most recent campus shooting, Georgia Tech Police Chief Rob Connolly spoke about how Georgia Tech prepares for potential threats.

How does Georgia Tech notify campus of an emergency situation?

We have a network of communications designed to notify everyone on campus of an emergency, as quickly as possible. The Georgia Tech Emergency Notification System (GTENS) disseminates messages by email, campus phone number, and mobile text messaging. Other means for getting the word out are an outdoor siren warning system, campus cable TV, and our social media channels.

How does the Georgia Tech Police Department (GTPD) prepare to respond to an active shooter scenario?

All GTPD officers undergo annual hands-on active shooter training. They have also trained officers at other law enforcement agencies.

Free Transit Passes Available for New Users

For Georgia Tech employees who do not commute to campus by train or bus and would like to try it, the Midtown Alliance is offering 10-trip passes and route planning guidance for area transit during the month of June.

DeWeerth Named Interim Chair for Biomedical Engineering

Stephen P. DeWeerth, associate dean for research and innovation in the College of Engineering, will assume the role Aug. 1 as the search for a permanent chair gets underway.

NEWS BRIEFS

IN THIS ISSUE

Faculty and Staff Achievements 2
Summer Wellness Hikes Begin This Month 2
In the Classroom with Julian Rimoli 4
EVENTS

ARTS & CULTURE

June 9
The Robert C. Williams Museum of Papermaking hosts the opening for
Pure Pulp: Contemporary Artists Working in Paper at Deau Donné from 5 to 7 p.m. The exhibit will run
through Friday, Aug. 5, weekdays from 9 a.m. to 5 p.m.
www.c.gatech.edu/purepulp

June 24
DramaTech Theatre presents Who’s Afraid of Virginia Woolf? Faculty/staff
tickets are $10. Additional showings take place June 25, June 30, July 1, and July 2. All shows begin at 8 p.m.
www.dramatech.org

June 26 – Oct. 2
The School of Industrial Design, the Institute for People and Technology,
the Wearable Computing Center, and the OU Center present On You: Wearing Technology at the Museum
of Design Atlanta. The museum, located in Midtown, is open Tuesday through Sunday. Hours vary.
www.museumofdesign.org

TRAINING

June 14
The Library hosts a Patent Search Class from 1 to 3 p.m. in the Homer
Rice Center, Ground Floor West. Register to attend at
www.c.gatech.edu/patent

July 6-27
The Center for the Enhancement of Teaching and Learning is providing
an on-campus learning community for a course titled Integrating
Creativity, Innovation, and Design Thinking in STEM Courses. The community will meet Wednesdays
from 1 to 3 p.m. in Room 466A, Clough Commons. Learn more and
register at
www.c.gatech.edu/stemlearning

HEALTH & WELLNESS

June 15
The Office of Human Resources hosts a Big Well session on the
Freedom from Smoking program, from noon to 1 p.m. in Room 200,
Scheller College of Business. Register to attend at
www.c.gatech.edu/smoking

Tip of the Week: All employees are encouraged to walk at least 10,000 steps per day to maintain
a healthy lifestyle. Your employer wellness program may offer incentives if you track your
steps. Check with your HR representative.

FACULTY AND STAFF ACHIEVEMENTS

Tamara Bogdanovic, assistant professor in the
School of Physics, has been named a 2016 Cottrell
Scholar by the Research Corporation for Science
Advancement.

John-Paul Clarke, professor in the Daniel
Guggenheim School of Aerospace Engineering,
earned the 2016 Environmental Excellence in
Transportation Award from the Society of Automotive
Engineers. Clarke was honored during the society’s
World Congress event in April.

Rigoberto Hernández, professor in the School
of Chemistry and Biochemistry, received a
Transformational Research and Excellence in
Education Award from the Research Corporation for
Science Advancement.

Steven Liang, Morris M. Bryan Jr. Professor in the
George W. Woodruff School of Mechanical
Engineering, was awarded the Milton C. Shaw
Manufacturing Research Medal. The award will be
presented at the American Society of Mechanical
Engineers' Manufacturing Science and Engineering
Conference in late June.

Sebastian Polutta has been named the David
M. McKinney Family Assistant Professor in the
H. Milton Stewart School of Industrial & Systems
Engineering.

Devesh Ranjan, associate professor in the George
W. Woodruff School of Mechanical Engineering,
earned the U.S. Department of Energy Office of
Science Early Career Research Award.

Wendy Rogers, professor in the School of
Psychology, was named a fellow of the Gerontological
Society of America. She will be recognized at the
society’s annual meeting in November.

If you know of a faculty or staff award that should be included in
a future publication, email editor@comm.gatech.edu.

POLICY UPDATES

New Policy for Low Speed Vehicles

Currently, 145 low speed vehicles help get people around campus. This spring, the new
Low Speed Vehicle (LSV) and Golf Cart Policy was approved and will impact the
purchase, use, and operation of all LSVs and golf carts on campus.

Effective July 1, any Georgia Tech unit owning or purchasing
LSVs or golf carts must ensure these vehicles are street legal and
register each of them with Georgia Tech Fleet Services. All registered
vehicles should display a state registration decal and Campus Fleet
Vehicle permit. Drivers of LSVs and golf carts should obey all traffic
and parking regulations or be subject to citations. LSVs must not be driven
on high-speed streets (above 35 mph), and golf carts should not be driven
on streets with speed limits above 25 mph.

Driving and parking LSVs and golf carts on sidewalks and
pedestrian walkways around campus is prohibited; the only
exception is when they are being used for tasks involving sidewalk
and grass areas for official operational and business functions.

Learn more at www.c.gatech.edu/lsv.

Food OK for Classroom Events

As of June 1, food items are allowed in classroom spaces reserved for events. Events consist of
meetings, non-academic lectures, and some special ceremonies reserved through Capital
Planning and Space Management by
chartered student organizations, departments, or schools.

This past spring, the Student Government Association and
Office of Leadership and Civic Engagement spoke with student
groups on the importance of cleaning up after events and
provided additional cleaning supplies. These combined efforts
have been successful, and feedback from the campus community has
been positive.

In order to use these classroom spaces for events, groups are
required to reserve the space through Capital Planning and Space
Management at www.gtevents.gatech.edu. Visit the Classroom
Use page at www.space.gatech.edu for additional information.

Whistle Staff Writers: Kristen Bailey, Amanda Reaves, Justine Haase, and Maxine DePauw
www.whistle.gatech.edu • THE WHISTLE
HURRICANE, from page 1

“157 mph or higher”

Between his work on the report in the late ’60s and the report’s publication, however, Saffir had shared his hurricane wind scale with a friend at the National Hurricane Center.

Robert Simpson was director of the center then, and he liked what Saffir had put together.

“When I first came down to the Hurricane Center in 1967, I tried to come to grips with how we could do a better job of communicating,” Saffir said to the Mariners Weather Log in 1991. “That’s very difficult; scientists communicate with each other very easily, but a scientist trying to communicate with a person who is a non-scientist on a technical problem is very difficult at times.”

Simpson added descriptions of the potential damage from storm surge for each of Saffir’s categories and thus was born the Saffir-Simpson scale.

Initially, National Hurricane Center forecasters used the scale only internally. But before long, they started including it in guidance meant for government agencies and emergency managers. By 1975, because it made communicating the dangers of a storm so much easier, the scale had gone public.

In addition to developing the hurricane scale, Saffir also widely receives credit for writing and unifying building codes across South Florida, where he was a county engineer for many years. The work made him an expert in how hurricane-force winds damage structures.

“I can’t stress enough the importance of a strong building code and strong enforcement of that code,” Saffir said in that Miami Herald interview. “The truth is, you can write any code you want, but without the proper enforcement, it’s not going to work.”

That interview was in 2005. Saffir, who graduated from Georgia Tech in 1940, was 88 years old at the time. He died two years later.

But every year from June 1 to November 30 — the Atlantic hurricane season — his legacy lives on in the system he created that has forever changed how we understand the strength of tropical cyclones and how we talk about them.

POLICE, from page 1

other University System of Georgia schools | Training is held in different types of buildings to keep skills sharp. In addition, officers train so that they can quickly respond to high-priority incidents.

Our Office of Emergency Preparedness (OEP) organizes active shooter drills for specific buildings on campus; the two we held recently were at the Joseph B. Whitehead Stamps Health Services Center and O’Keefe buildings. OEP also organizes tabletop drills, which are informal exercises to reinforce responder roles in simulated scenarios.

What should an individual do in an active shooter incident?

Don’t wait until it happens — think now how you would respond. Prepare yourself to understand and anticipate the type of event that can do harm, during, and after an active shooter incident.

How does Georgia Tech identify a student, staff member, faculty member, or visitor that could be a potential threat?

Everyone on campus has a responsibility to identify potential threats. “See Something, Say Something” isn’t just a slogan — it is a valuable tool. Call GTPD (404-894-2500) if you’re suspicious or worried, or have a talk with your supervisor if you’re concerned about a coworker or student.

Multiple departments across campus (including GTPD, Human Resources, and the Counseling Center) collaborate regularly to discuss students, staff, and faculty whose behavior is concerning. GTPD also monitors social media for potential threats, and we frequently connect with federal and state law enforcement agencies for watch lists.

Does GTPD offer any training resources?

OEP hosts a “Plan, Prep, React” course related to active shooter response options, and our Crime Prevention unit offers hands-on self-defense training. Attendees of our Citizens Police Academy are exposed to a variety of situations, including a two-hour active shooter drill, with attendees in protective gear actually taking on the roles of “bad guys” and “good guys.” These classes can be requested through the GTPD and OEP websites.

Where should we go for more information?

Our website provides a lot of information on safety and emergency preparedness. You can find a copy of our emergency action plan, response guidebook, and contact information that you can add to your mobile phone’s address book. We also advocate that everyone add our LiveSafe app to their smartphone.

The Counseling Center has some very good resources for faculty and staff who want help with identifying the warning signs and to learn how to help those in distress both before and after a crisis. The CETL Handbook is also a very good resource, and the Office of the Dean of Students encourages the use of an online referral form for expressing concerns about any member of campus.

We don’t hesitate to contact GTPD day or night. We take every call seriously. Your safety is our primary concern.

Six College of Engineering faculty members are among the National Science Foundation (NSF)’s 160 early career researchers who will receive five years of funding to explore new areas of research.

The Georgia Tech researchers are:

• Chloé Arson, assistant professor, School of Civil and Environmental Engineering
• Asegun Henry, assistant professor, George W. Woodruff School of Mechanical Engineering
• Jonathan Rogers, assistant professor, George W. Woodruff School of Mechanical Engineering
• Phanish Suryanarayana, assistant professor, School of Civil and Environmental Engineering
• Alejandro Toriello, assistant professor, H. Milton Stewart School of Industrial & Systems Engineering
• Shuman Xia, assistant professor, George W. Woodruff School of Mechanical Engineering

The financial support for the awards comes from the NSF’s Faculty Early Career Development (CAREER) Program. Begun in 1993, the CAREER program provides promising junior faculty the opportunity to pursue outstanding research, excellence in teaching, and the integration of education and research. Each CAREER award provides a minimum of $300,000 over five years. This year’s Georgia Tech CAREER awards total approximately $80 million, out of an estimated $226 million for the NSF program overall.

MISCELLANEOUS

June 7

The Scheller College of Business hosts an MBA information session from 6 to 8 p.m. in Room 200, Scheller College of Business. Register to attend at www.c.gatech.edu/mba-june7

June 9

The deadline to apply for Center for the Enhancement of Teaching and Learning’s Faculty Learning Communities is at 11:59 p.m. www.cetl.gatech.edu/faculty/flc

June 15-16

The Division of Student Life hosts FASET Orientation for incoming summer freshmen. www.nssp.gatech.edu

June 16-18

Final exams for Early Short Summer Session.

June 20-24

The Petit Institute hosts its annual Swap-O-Rama for summer cleanup of labs in the biotechnology area of campus. www.c.gatech.edu/petitswap

June 20

Classes begin for Late Short Summer Session.

July 2

Withdrawal deadline for Full Summer Session.

July 4

Camps is closed in observance of Independence Day.

July 8

The Student Center and Georgia Tech Athletics present a free showing of Star Wars: The Force Awakens at 8 p.m. at Bobby Dodd Stadium. www.c.gatech.edu/doddafterdark

For a more comprehensive listing of events, or to add your own, visit calendar.gatech.edu.
Rimoli Approaches Teaching as ‘Intellectual Challenge’

Julian Rimoli is an assistant professor in Georgia Tech’s Daniel Guggenheim School of Aerospace Engineering. When he was little, he shared a dream with many other kids who grew up watching space missions: He wanted to be an astronaut.

“People thought I was crazy because I was in Argentina — in a small town,” he joked. Rimoli was born to a family of Italian immigrants and raised in Junín, Argentina, a small town three hours west of the capital, Buenos Aires. He earned an aeronautics engineering degree at Argentina’s Universidad Nacional de La Plata in 2001. In 2004, he moved to the United States for graduate studies at the California Institute of Technology, earning his M.S. in aeronautics in 2005 and his Ph.D. in aeronautics in 2009. After conducting research and supervising graduate students as a postdoctoral associate at the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology for nearly two years, he came to Georgia Tech in 2011.

“I really like this place,” Rimoli said. “I haven’t been able to find another place with the level of energy we have on this campus. The students are very active, and they always have ideas and want to participate in research. The faculty is the same — lots of people are willing to collaborate all the time.”

Classroom Strategies

When teaching, Rimoli says he tries to reconstruct the process and build on the story. “Each lecture has its own story,” he said. “I spend a lot of time thinking on the concept of how something comes to be the way it is.” In his statics class (COE 201), Rimoli said intuition, in addition to the necessary technical knowledge, is very important in order for students to get the physical understanding of what’s going on. He said it can be frustrating to realize that the students are not understanding what he is trying to convey.

“When I perceive that students are not understanding, I think about how to fix it at the next time I teach it,” he said. “But at that moment, I try to come up with new ways of explaining, and try different examples or angles.” He also tells his students that it’s okay if they don’t understand everything in class.

“In the classroom, you get the big picture and, hopefully, you get a good set of notes to help you study. But at the end of the day, there’s no way around studying,” said Rimoli, whose teaching prowess has been recognized through awards such as the Lockheed Dean’s Award for Excellence in Teaching, and the Goizueta Junior Faculty Professorship.

Really Reaching the Students

Rimoli, who teaches a number of undergraduate and graduate courses in aerospace engineering, is excited by the exchange of energy in the classroom.

“The moment I walk into the classroom, I get energy. I give them energy, and they give me energy back,” he said. “It always helps if the students are engaged, and it takes time to build a relationship with the class. The classroom dynamic is not the same the first week of class as it is at the end of the semester.”

Rimoli said the excitement level varies according to what he is teaching.

“When I teach an advanced graduate level class, what excites me is that it really forces me to learn,” he said. “I have to prepare for these smart Ph.D. students who are going to ask tough questions. I want to — as much as possible — know the answer or be ready to think about the answer on the spot. It’s a very stimulating intellectual challenge.”

When teaching statics, an undergraduate course, Rimoli faces a different set of challenges.

“What I enjoy is the challenge of how to teach, what to, me, is obvious,” he said. “I have to put myself in the mindset of the students, and try to remember where I was [at their age].”

He also has to be mindful about actively expressing the commitment he has to his students. Rimoli said that students are really good at reading the commitment of the faculty.

“I think students appreciate the commitment,” he said. “They may or may not like your teaching style, but if you are committed, they will respect it.”

Rimoli’s commitment shows when he was teaching his students about trusses, he took the time to create an app called “Trust Me!” His committing to that extra step to provide a virtual testing environment for his students allowed them to improve their intuition on trusses. The app has had 120,000 downloads in over 140 countries, including 36,000 downloads from educational institutions.

But, Rimoli said that acknowledgement of faculty commitment sometimes doesn’t come until the end of the semester.

“The best reward is on the last day of class when a student shakes your hand and says, ‘I enjoyed your class.’”

In the Classroom is a series that showcases some of Georgia Tech’s award-winning teachers, delving into what they teach, how they do it, and what motivates them. Read more stories at www.e.gatech.edu/classroom.

From the Source

Tiffany Davis, who graduated in May with a bachelor’s degree in aerospace engineering, says she’s forever grateful to Professor Julian Rimoli for “kick-starting my career.”

Davis was a student in Rimoli’s statics class and asked to do structural analysis research with him in preparation for an internship with the Boeing Company.

Rimoli set up a mentorship arrangement with Davis and another student with similar interests: He assigned them books to read on advanced materials, gave them problems to solve, and met with them weekly for discussion.

“i am so very fortunate and grateful that Professor Rimoli advised me in research related to advanced structural analysis and finite element analysis,” Davis said. “This enabled me to be in an excellent position when I took an internship with Boeing in Huntsville, Alabama, in the summer of 2014.”

Because of Rimoli’s assistance, Davis already knew the concepts Boeing wanted to teach her during the first weeks of her internship. As a result, she was able to jump immediately into hardcore engineering work on her first day, saving the company money that would have been spent on training.

That experience helped Davis stand out, and Boeing invited her back for another internship last summer in Los Angeles. Now, the company has offered her a position in its most exclusive rotational program, the Engineering Career Foundation Program, where she is one of only 44 applicants to have been chosen from a pool of more than 4,000.

“I attribute a lot of my professional success to Professor Rimoli’s ambition to not just be a phenomenal researcher but also an outstanding teacher,” Davis said. Now, who will start working for Boeing in July and plans to enroll in an online master’s program in aerospace engineering at Stanford University or Purdue University next spring. “Professor Rimoli has even inspired me to consider getting a Ph.D. later on,” she said.

Julian Rimoli has been at Tech since 2011. His research expertise is in computational solid mechanics, with a focus on aerospace applications.