

TALK OF TECH

The SCIENCE of RUNNING
The DECEPTION of SQUIRRELS

FEATURE

THE LOGISTICS
of PANAMA

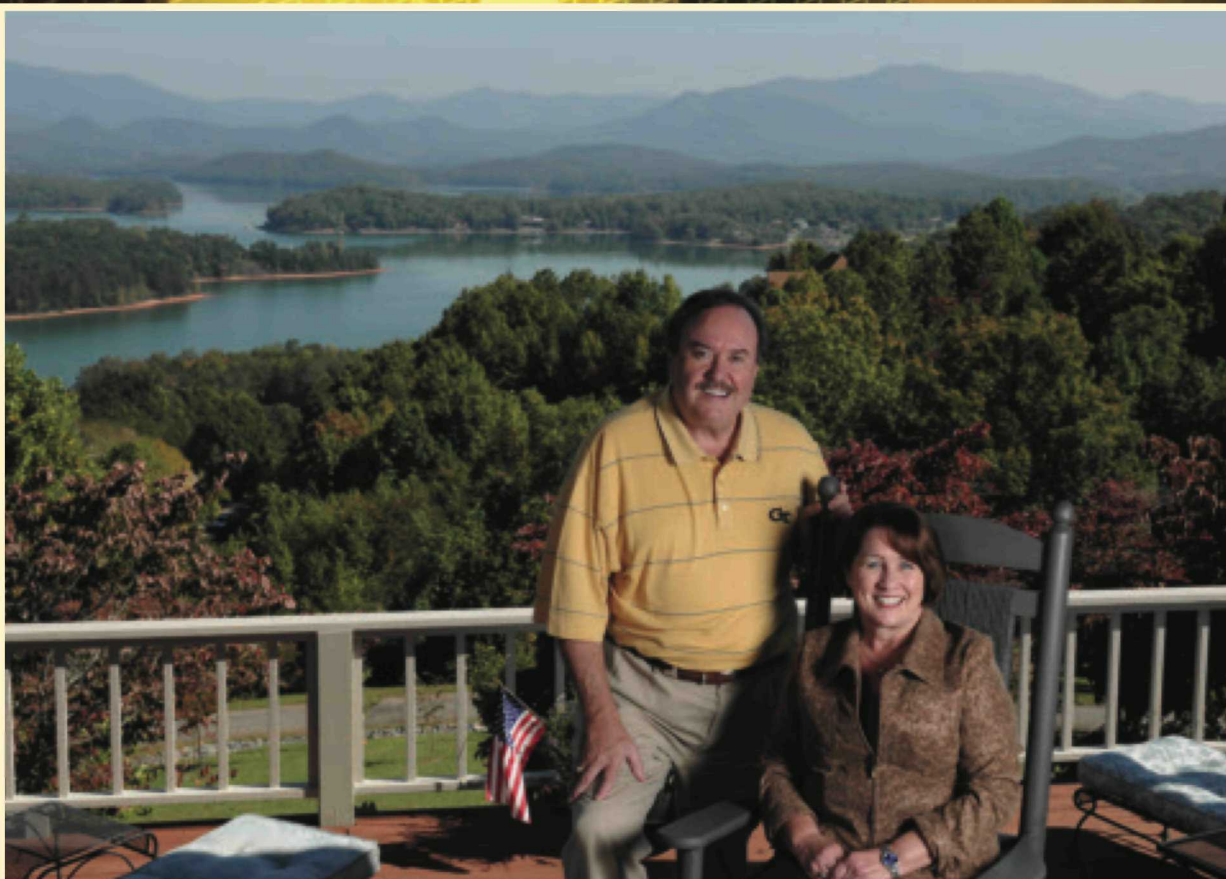
GEORGIA TECH

ALUMNI MAGAZINE

VOLUME
89
NO.1
2013



the
Ramblin' Wreck
Tradition in Motion



“We believe it is our time to give something back to Georgia Tech.”

— Sue Y. and Kenneth R. Entrekin, EE 1973

Most families have traditions. For Sue and Ken Entrekin, EE 1973, their tradition is Georgia Tech. Following in their footsteps are son Cliff Entrekin, MS ECON 2006, daughter Angela Entrekin Medley, BIOL 1996, son-in-law Brian Medley, IE 1995, and grandchildren who are already avid Yellow Jacket fans.

In recognition of their passion for and family history with Georgia Tech, the Entrekins have made a seven-figure estate commitment that will provide vital support for the School of Electrical and Computer Engineering, the Co-op program, the Ernest Scheller Jr. College of Business, and intercollegiate athletics at Georgia Tech.

“We anticipate that our gift will help Georgia Tech in several ways, but we especially want to benefit ECE,” said Ken Entrekin, who identified facilities, scholarships, and faculty support as particular areas of interest.

Co-founder and CEO of Advantage Industrial Automation, a premier automation solutions company in the Southeast, Ken Entrekin knows firsthand how valuable a quality technological education and real-world work

experience can be. Entrekin credits Georgia Tech, and more specifically the School of Electrical and Computer Engineering and the Co-op program, for guiding him toward a career path and helping him develop the skills to build a successful company.

In addition, the Entrekins value the curriculum offered within the Scheller College of Business. They believe engineering students should have solid grounding in business and finance, which will equip them for the challenges of an ever-changing global marketplace.

“Tech students need to be well rounded—to get more than just book knowledge,” said Entrekin. The Entrekins’ estate gift will therefore also support the intercollegiate athletic program. Football and basketball season ticket holders, Sue and Ken Entrekin are proud of the strength Georgia Tech’s student-athletes offer both on and off the playing field.

Through their generous philanthropy, they have shown that the Institute is an important part of the Entrekin family legacy.



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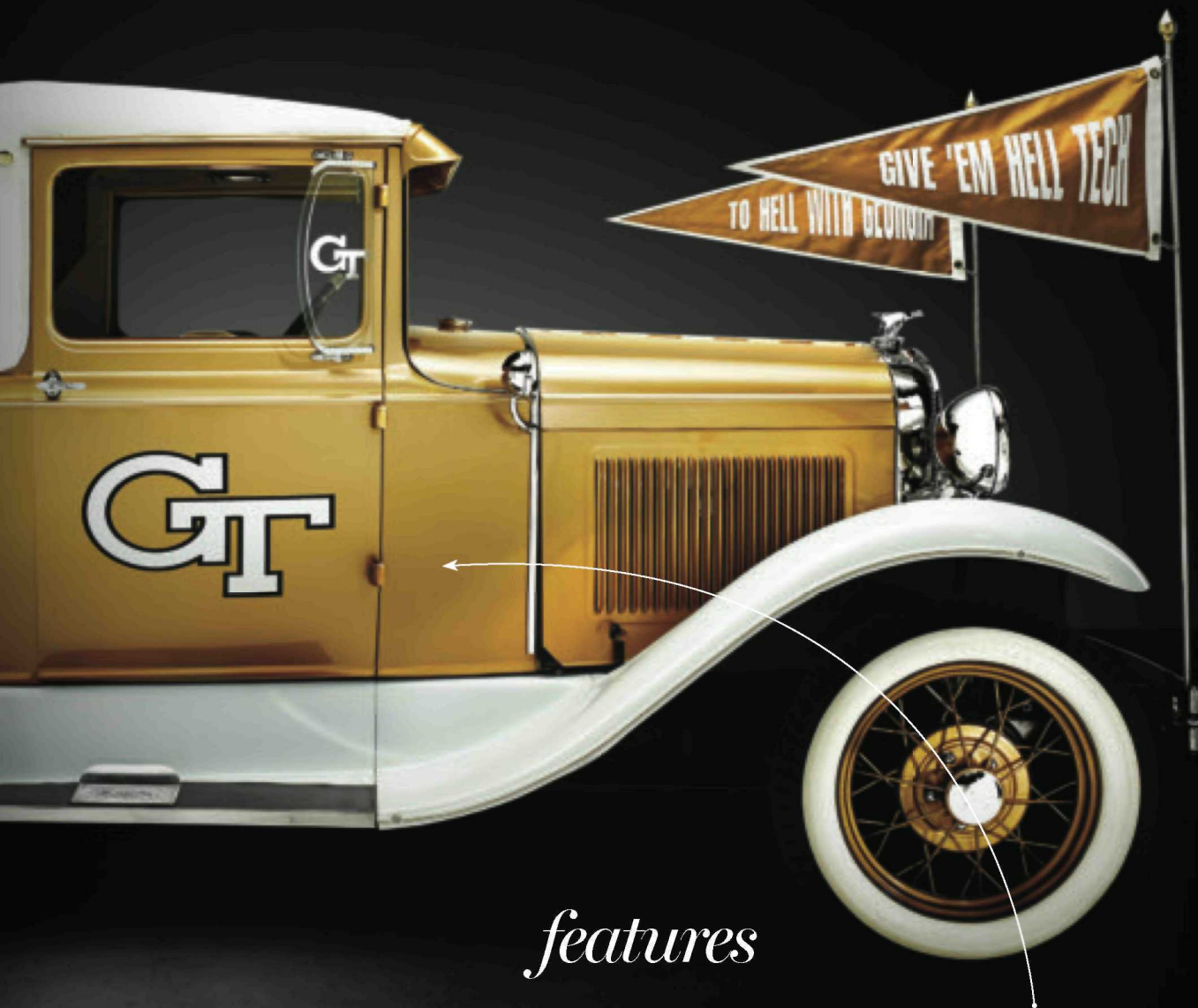
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features

MAN IN MOTION P42

Roger Krone, AE 78, never stops moving in his life as a president at Boeing, pilot, philanthropist and competitive runner.

MISSION TO PANAMA P52

Tech's top-ranked School of Industrial and Systems Engineering helps make sense of the nation's chaotic trade system.

RAMBLIN' WRECK P62

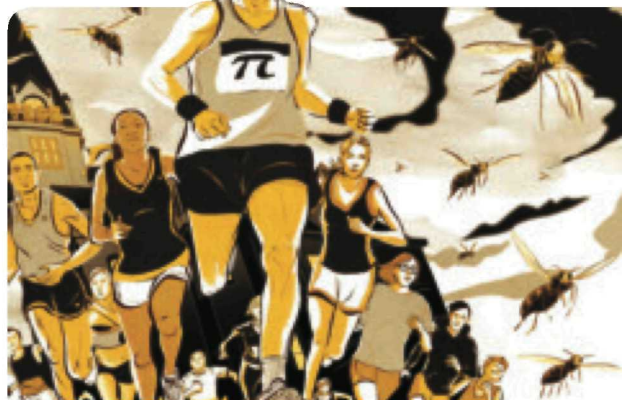
Under the hood and around Georgia Tech campus with the iconic 1930 Ford Model A Sport Coupe.

departments

p12



p78



p83



p106

AROUND CAMPUS 010

012 **Talk of Tech** Animal locomotion inspires Tech researchers.

020 **Student News**

024 **Innovate**

026 **10 Questions** Catching up with the keeper of the trolleys.

ON THE FIELD 028

028 **Athlete Profiles**

030 **Making Waves** Diver Brandon Makinson is helping popularize his sport.

IN THE WORLD 032

032 **Dollars & Sense** Tom DeLoach, ChE 69, has taken his business expertise to the racing world.

034 **@Issue**

036 **Tech Hack** Bill Bulpitt, ME 70, MS ME 72, shares his automotive restoration tips.

038 **Jacket Copy** The latest novels, nonfiction tomes and advice books from Ramblin' Wrecks.

ALUMNI HOUSE 074

076 **Auto Show** The 10th annual Georgia Tech Auto Show is sure to rev your engines.

078 **Pi Mile**

082 **Travel**

RAMBLIN' ROLL 084

084 **Gold & White Honors Gala**

085 **Out & About**

088 **Weddings**

090 **Births**

092 **In Memoriam**

ANNUAL REPORT 098

TECH HISTORY 104

104 **Artifact** Waltz through the past with a look at dance cards from yesteryear.

105 **Memories**



105 **Time Machine**

BACK PAGE 106

Georgia Tech is on the Move

I'm sure you noticed the Ramblin' Wreck on the cover of this issue. The vehicular icon is in many ways the face of Georgia Tech, but it's also more than just a mascot.

The Wreck represents Tech's history and traditions as well as our fascination with cars and mechanics and engineering. It also represents a simple if abstract idea: movement.

The Georgia Institute of Technology has always been on the move. From its origins as a trade school, Tech has progressed over the past 125 years into a renowned research institution and highly ranked university. It's a place obsessed with moving parts: pistons, gears, steam engines, axles, propellers, rockets and so much more. This issue of the *Alumni Magazine* was built around the idea of "motion," and as you flip through the pages you'll see the many ways (some obvious, others more subtle) in which movement defines Georgia Tech.

What you might not realize is that our alumni base is also on the move, and it's moving fast.

By the time you read this, you'll be one of about 133,000 alumni living around the globe. Because Tech's enrollment is so much larger than it used to be, with each new graduating class the alumni body grows younger and younger. Right now, the average alum graduated in 1993 and is 44 years old.

Amazingly, a full 10 percent of our alumni graduated since 2010. About 37 percent graduated since 2000.

Tech is also growing more diverse. Our alumni body is made up of 20 percent women, and that number will change quickly now that more than a third of our current students are female.

Your Alumni Association is always in motion, too, making sure we keep up



with the changing face of our alumni body. We've spent the past year examining what we do and planning our future to best meet your needs.

It's the holiday season as I write this, and I want to thank you for another year of supporting Georgia Tech and your Alumni Association. The tradition of alumni engagement is alive and well. To quote Tech's provost, Rafael Bras, "I've never been to a university where the alumni and the Association are so tightly woven into the fabric of life of the institution."

Georgia Tech is a much better place today because of you alumni who care about Tech long after you've ventured out into the real world. You're part of an amazing network of fellow alumni. It's an asset you can call on, no matter where your travels take you.

JOSEPH P. IRWIN, IM 80

PRESIDENT & CEO

GEORGIA TECH ALUMNI ASSOCIATION

Georgia Tech
Alumni Magazine
Vol. 89, No. 1

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GEORGIA TECH ALUMNI MAGAZINE

(ISSN: 1061-9747) is published quarterly by the Geor-
gia Tech Alumni Association, 190 North Ave. NW,
Atlanta, GA 30313. Periodical postage paid in Atlanta
and additional mailing offices. © 2013 Georgia Tech
Alumni Association

POSTMASTER

Send address changes to: Georgia Tech Alumni
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*A well deserved honor.
Nice to see that players
never forget the impact
their mentor had on them.*

Paul Zanecci, on "Bobby Dodd Returns to the Flats" via gtalumnimag.com

Magazine's New Look

As a Tech ID grad, put me soundly in the "great redesign" column. There seems to have been a welcome and sound editorial re-think, too. It makes a compelling publication. Now turn somebody loose on the Tech-focused ads. They look vintage '50s, not in keeping with Tech today or the magazine.

John Hudson, ID63

San Francisco

Happy to Meander the Pages

My sister [Abbie Kressner, MS ECE 11] and I (who are both Tech alumnae as well as current PhD students) recently started reading the *Alumni Magazine* because of the eye-catching, design-award-worthy layouts. We noticed there were a few comments to the contrary in the Feedback section in the last couple issues, so we just wanted to make sure to send our praise. It's obvious how much time and careful attention goes into each page. It makes us happy just to meander through the pages. Keep up the fantastic work, and we'll keep reading!

Josie Kressner, MSCE 11

Atlanta



Couldn't Stop Reading

I wanted to let you know how much I enjoyed reading the article "Up the Hill" in the latest issue of the *Georgia Tech Alumni Magazine* [Vol. 88, No. 4]. It was beautifully written and poetic. Your descriptive writing made me feel like I was right there in the cemetery with David. I

honestly wasn't sure when I saw the title page of the article if it would be very interesting since it was about a guy tending a cemetery, but once I started reading the 10-page article, I couldn't stop! Keep up the wonderful work!

Katie Tuck, Mgt 07

Augusta, Ga.

UPI Didn't Interview Castleberry

In Bill Chastain's article about Clint Castleberry ["Nobody Had Seen Anything Like That," an excerpt from Chastain's book *Jackrabbit*, Vol. 88, No. 4], he points to an interview Castleberry had with United Press International. This is surprising, as UPI did not exist, as such, until 1958—14 years after Castleberry died.

In 1958 United Press merged with International News Service and became United Press International, or UPI.

William H. Savell, IM57

Atlanta

Credit Earthship's Creator

As someone who lives in an earthship, I was immediately intrigued by the title of the article on page 12 of the recent *Georgia Tech Alumni Magazine* [Vol. 88, No. 4], "Recycled Tires Used to Build 'Earthship.'"

As I read the article, though, I was chagrined at the implication that Steven Van Ginkel came up with the concept of using earth-filled tires as a building material. Writing such an article with absolutely no mention of nor attribution to Michael Reynolds, the Taos, N.M., architect who developed the Earthship Biotecture using recycled materials over 40 years ago, borders on irresponsible journalism.

We Georgia Tech engineering graduates are proud of our own



Beautiful essay on a man who spent 30 years clearing a cemetery, knowing inertia could erase his work in half the time. <http://gtalumnimag.com/2012/11/up-the-hill/?src=longreads> ...@j_fuller

"Up the Hill" @rachaelmaddux, @GTAlumni on a man's dedication to a cemetery in Chattanooga [#longreads](http://lgrd.co/XBLVJt) @longreads

"Cemeteries aren't build for the dead; they're

built for the living." Worth your time. Up the Hill <http://gtalumnimag.com/2012/11/up-the-hill/> ...#longreads @celli

Via @GTAlumni mag: @GTStudents & @TrulyLivingWell use #recycled tires to build 'earthship' <http://bit.ly/WbBXOR> #cleantech @GTGreenBuzz

Wow... talk about shoulder rehab ingenuity... <http://fb.me/2guUbD3rU> @theRotater

→ tweet to us at @gtalumni

Comments posted at gtalumnimag.com



Thank you. This is beautiful.

Gregory DiDona, on "Up the Hill"

The awards should have been given out at half time [of the Homecoming football game]! It would help for future giving to hear and see your frat honored. Or for others to want to give next year to get noticed.

Rick Garcia, on "Fraternalities, Sororities Compete in Greek Alumni Challenge"

In Dodd We Trust!!

Robert Porter, on "Bobby Dodd Returns to the Flats"

If there were any easy solutions, they would have already been implemented. The most encouraging part of this article is some of the kids having an opportunity to visit Tech's campus and spend time with students, being exposed to something other than their normal surroundings of crime,

drugs and in a perpetual spiral with little ambition and a bleak future. Influencing these kids and making a positive impact on their lives, one by one, is what it's going to take to turn it around. Kudos to Tech.

Carol C. Burnson "Westside Story"

This is a great invention that would help so many people. I have had rotator cuff surgery on both shoulders, and it would have been great to have something like this to aid in my recovery and range of motion. I think there should be a commercial-ready version that Georgia Tech could help develop so Brad Edelman would get the copyright and patent for his invention.

Susan Burns, on "Brad Edelman's Shoulder Rehabilitation Exoskeleton"

Having been through a shoulder replacement myself, I want one of these to bring the remaining lost flexibility and extension back to my shoulder. I believe that this would be good for anyone with a "frozen shoulder," as well as potentially useful to people dealing with elbow issues. (They have many of the same flexor issues.)

Amy Price, on "Brad Edelman's Shoulder Rehabilitation Exoskeleton"

accomplishments, and it would seem appropriate to give credit where credit is really due.

As I sit wearing a T-shirt and gym shorts in my office in southern Colorado at 6,600 feet with 20-degree temperatures and a 30 mph wind outside, it is 73 degrees inside—all without

using any energy other than the sun, which has warmed our thermal mass walls. Michael Reynolds has definitely had an impact on everyone who lives in an earthship and on those who build using his concepts.

Thank you for the magazine. It's a wonderful way for this 1966 graduate to keep up with what's happening at the North Avenue Trade School.

Lyle W. Latvala, AE 66
Coaldale, Co

Correction: *Alumnus Edward A. Alex Gregory received a degree in textile engineering. His degree was incorrect in the Ramblin' Roll section of Vol. 88, No. 4.*

CONTRIBUTORS



BRETT WELDELE

is a musician and comic book illustrator best known for his art in the sci-fi series *The Surrogates*. He illustrated a week in the life of alumnus Roger Krone (pg. 42).



CALVIN KIM

experienced a slice of automotive and school history with his in-depth look at Tech's mechanical mascot, the Ramblin' Wreck (pg. 62). Now a freelance writer, his most recent history involved road testing the newest cars as a driver for *Road & Track*.



JOSH MEISTER'S

photography has been featured in *Atlanta*, *Paste* and *Ebony*. He produced the stunning images of the Ramblin' Wreck (pg. 62) among others in this issue.



STEVE WACKSMAN

has been illustrating since he was old enough to firmly grasp a crayon and has worked for a long, varied list of clients. He lives in Brooklyn, NY. He illustrated cyborg animals for an article on motion research (pg. 12).

Want to get in touch? Send letters to: Editor, *Georgia Tech Alumni Magazine*, 190 North Ave. NW, Atlanta, GA 30313, or editor@alumni.gatech.edu. Comment at gtalumnimag.com or at facebook.com/georgiatechalumni. View our letters to the editor policy at gtalumnimag.com/letters-policy.

Around CAMPUS



Welcome back to campus



This image was compiled from thousands of photos taken over several hours in the Clough Undergraduate Learning Commons on Jan. 7, the first day of the spring semester.





Do the Locomotion

Rachael Maddux

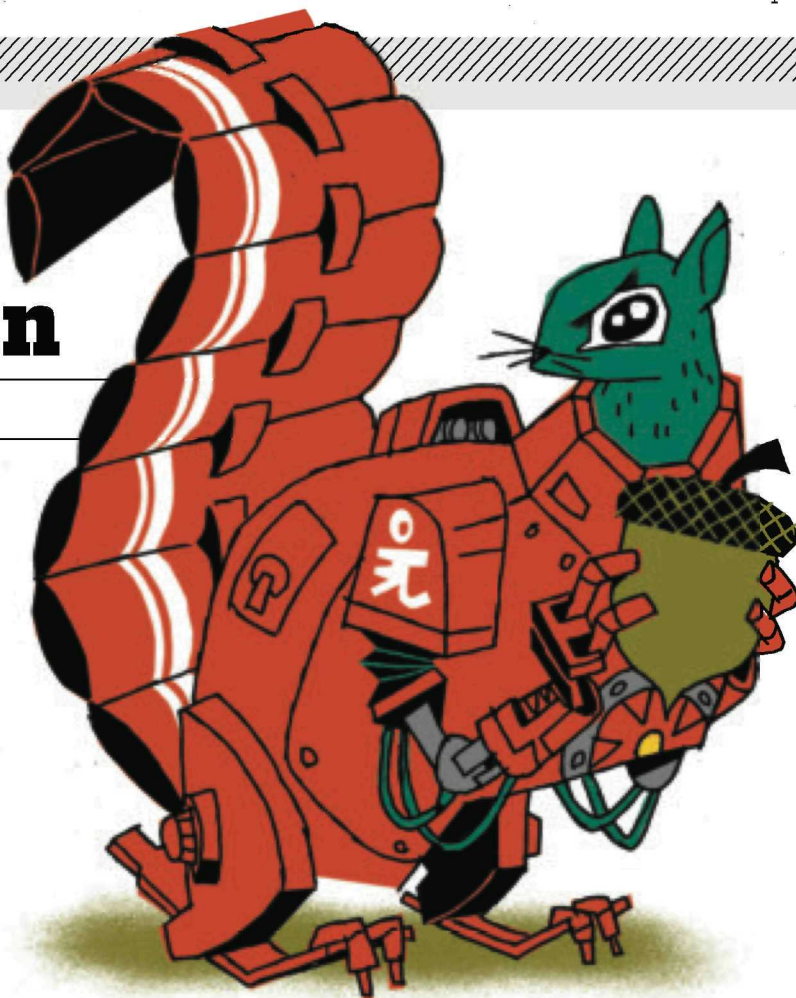
All over campus, researchers are looking to the wild kingdom for insight into complex questions of motion and behavior. Here are three of the many labs in which work revolves (and slithers and scurries) around animal locomotion.

The CRAB Lab

“Most biophysicists study things at the cellular and molecular scale, but there are a few of us who are beginning to study biological systems, particularly locomotion on a larger scale,” says Daniel Goldman, assistant professor in the school of physics, adjunct professor in the school of biology and head of this aptly named research group. (CRAB stands for “Complex Rheology and Biomechanics.”)

The lab’s subjects include sea turtle hatchlings, fire ants and (of course) crabs—any creature, in Goldman’s words, “really good at doing what they do.” His team studies how animals move through complex materials, like sand. CRAB researchers aim to apply their findings to physical models, with the hope of developing applications in the human world.

Most notably, work with a motor-driven, sand-swimming device modeled on the sandfish lizard led to breakthroughs that may assist in the development of unmanned first-responder units capable of moving more easily over uneven terrain—like hurricane or earthquake debris—that poses a challenge for most robotic vehicles.



Hu Laboratory for Biocomotion

David Hu’s research into the physics of wet-dog shaking and mosquitos’ ability to dodge raindrops has earned him press from *Good Morning America*, NPR, and even the esteemed *Georgia Tech Alumni Magazine*. In early 2012, Hamid Marvi, a mechanical engineering PhD candidate and one of Hu’s advisees, made waves of his own with the development of a critter called Scalybot 2, notable for its mobility and energy efficiency.

Marvi’s design for the bot came from the hours he spent observing 20-plus

species of snakes at Zoo Atlanta. Snakes’ scales and unique rectilinear locomotive patterns enable them to move over large distances while expending relatively little energy, and Marvi applied these principles to an all-terrain robot that could be used for search-and-rescue missions staged on tricky terrain. Scalybot 2, steered by a joystick, is able to automatically adjust the friction and angle at which its metal-scaled underbelly meets the ground.

Scalybot 1, which Hu’s lab debuted in 2011, mimicked snakes’ push-and-pull concertina locomotion.



220

years of data analyzed by assistant professor Mark Zachary Taylor to create economic grades for U.S. presidents. No. 1? Franklin Delano Roosevelt.



What looks like aimless, frantic scurrying may actually be a sophisticated method of deception.



Mobile Robot Laboratory

To most observers, a squirrel's behavior may appear completely disorganized, but many researchers—including Ronald Arkin, Regents professor in the College of Computing and associate dean for research and space planning—know better.

What looks like aimless, frantic scurrying may actually be a sophisticated method of deception. Research from the biology community suggests that squirrels are often in the process of finding nuts, hiding them in various caches, obsessively checking the safety of those caches and checking false caches (where there are no

nuts at all) to mislead any sneaky critters that might be watching.

Arkin, who directs Tech's Mobile Robot Laboratory, was inspired to mimic this tactical dishonesty in his lab, training robots to deceive both humans and other machines. "We studied how we can model both the hoarding behavior, which is gathering the nuts in the first place, and the patrolling behavior," he says. "We implemented this in robotic systems as a resource protection strategy, tested it in simulation extensively, gathered data to show that it delays the discovery of your caches by doing this

particular strategy and implemented it on a couple of robots in our laboratory."

Arkin's team has also looked at the bluffing capabilities of birds called Arabian babblers, which often join together in groups to harass and overwhelm a predator.

The Mobile Robot Lab's work on squirrel and bird deception is funded by the Office of Naval Research, and its findings could be especially useful in military operations, allowing robots to assist in obscuring the location of ammunition and supplies, even allowing them to minimize the risk of capture. ▲

1.13 pledge, in millions of dollars, from the Coca-Cola Foundation to Tech, for scholarships for first-generation college students.



29

programs, including Tech's Vertically Integrated Projects, recognized by the National Academy of Engineering for giving students real-world experience.



Tech's Gearheads Unite

by Jeff Haws



With three hours to go, the students stared at a useless transmission in disbelief. The Georgia Tech Wreck Racing team had spent the past year tweaking a 1969 MG Midget to near perfection, and much of the crew was already in Gainesville, Fla., preparing for the Grassroots Motorsports Challenge.

Those still in Atlanta had decided to run their creation through some last-minute testing—but then the panhard bar mount broke away from the body of the vehicle, fracturing the transmission tail-shaft housing.

Nearly a year's worth of work went up in smoke with the transmission, and the vehicle was unsalvageable. The team had just a few hours left before they had to leave for the competition.

"We called up the guys to figure out what to do," said Matt Meister, a fourth-year mechanical engineering major and

president of Wreck Racing. "Our options were: We could do what we could to just get the Midget running and bring it down. We could go ahead and use our same car from last year, which was still in the shop. Or we could just not go."

The Grassroots Motorsports Challenge, held in the fall, is Wreck Racing's main event.

Teams from across the country receive a dollar amount matching the year (it was \$2,012 last year) to put together a competition vehicle to go through a series of races.

"Not going was never an option," Meister said. "Everybody agreed with that."

They were going to compete to the end, win or lose.

The teammates pushed and pulled the vehicle through a series of events, finishing more than 90 seconds behind the field in some—an eternity in racing time.

For their efforts, Wreck Racing garnered the lowest point total of any team there, but the group was presented with the Spirit of the Event award.

It's a testament to the passion and dedication of Wreck Racing, a group of students who love working on cars. The club offers them access to a large garage on campus and resources through the Institute.

Some students work on the car almost every day. Others migrate in and out as class and homework allow. The hours can grow long, and the work can be difficult.

But for those students for whom cars are a passion, there's nowhere they'd rather be.

"I just love cars," said John Gattuso, a third-year mechanical engineering major and press secretary of Wreck Racing. "I've had a rough week at school or a rough day, and I can come to the shop and just turn a wrench or cut something or machine something. It's just relaxing. You can't get that in the classroom."

That real-world application is just one of the benefits for crew members, whose majors run the gamut from mechanical engineering to physics to mathematics.

There's a place for people with all sorts of interests in the Wreck Racing garage. And the benefits of the hands-on experience often carry over to the classroom.

"When I came in [to Wreck Racing] as a freshman, I got to do a little bit of modeling and solid works," Gattuso said. "When it came time to take the 3-D Tech class, it was like, I had already done the leg work—I already knew where stuff was. So it was a really easy jump to start that class." ▲



21 rank of Tech on 2013's most buzzed-about university on the internet list in the TrendTopper MediaBuzz survey.



4.4 funding, in millions of dollars, given to Tech and Florida State by the Department of Veterans Affairs to develop advanced prosthetic sockets.

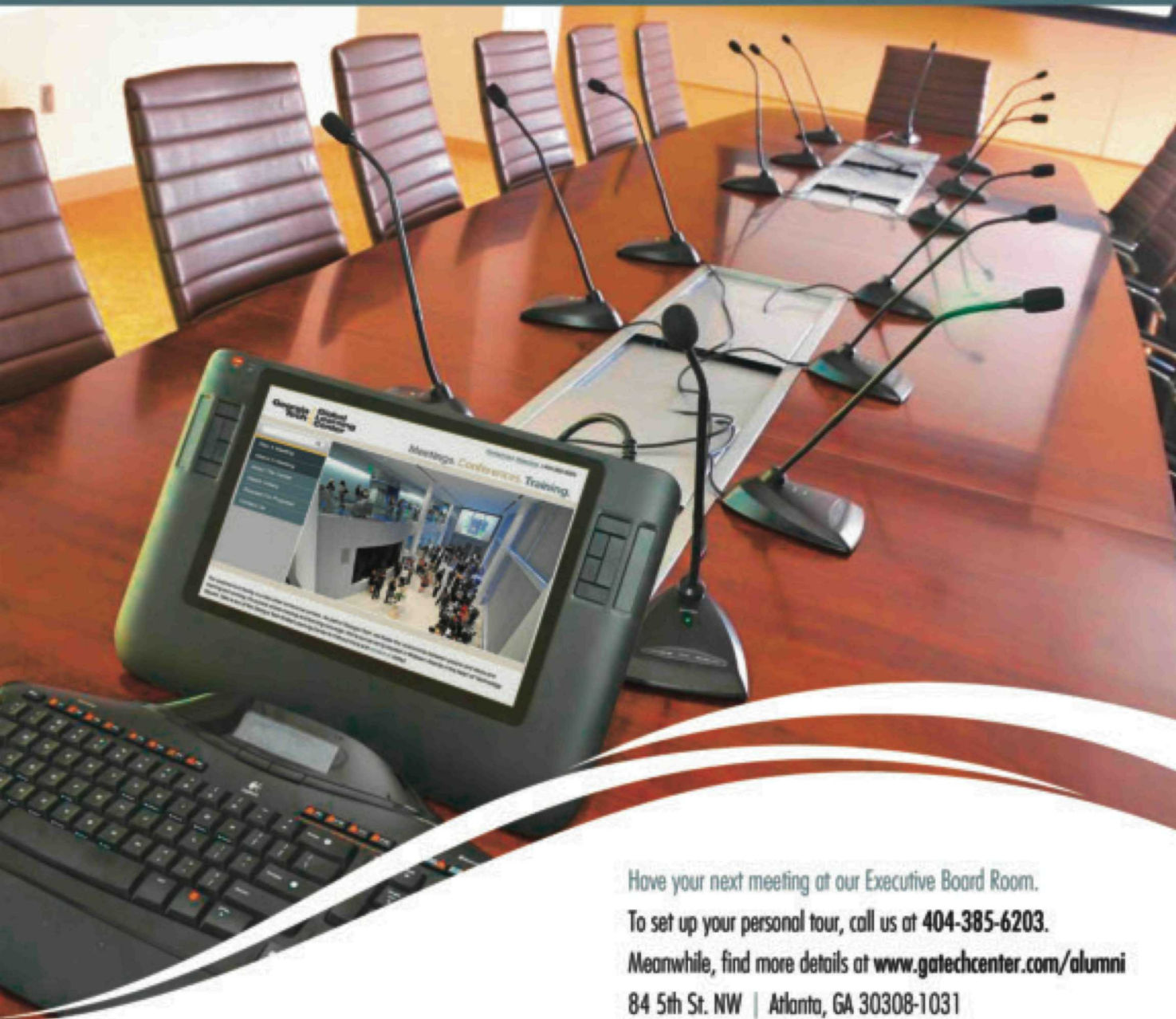
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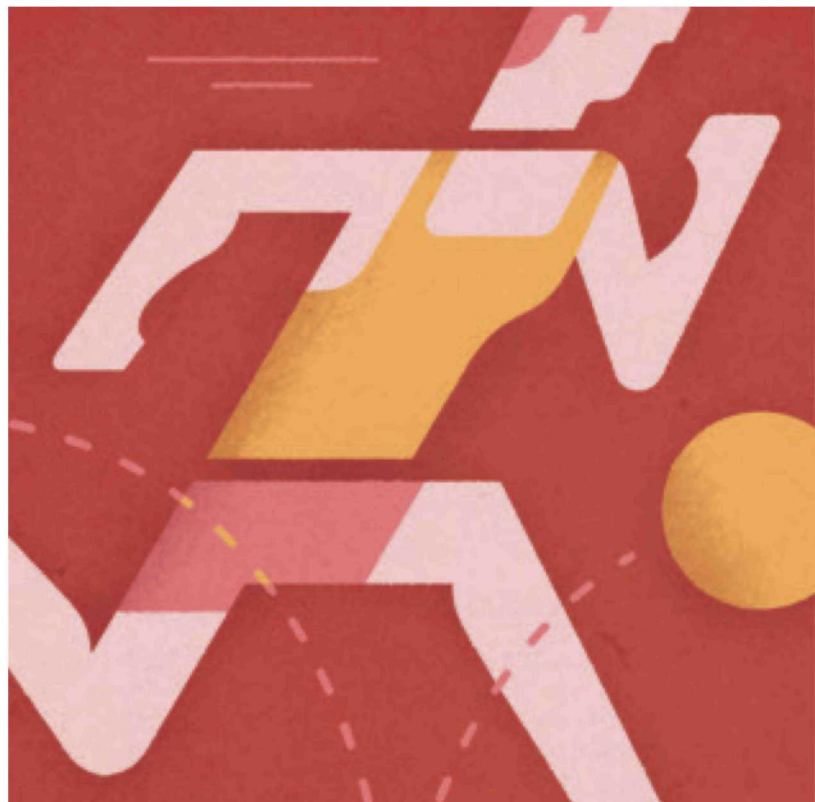
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Van Jensen

The Science of Running



“As scientists, we still don’t understand a lot about how we walk,” Chang says. “A 2-year-old can do it instinctively, but from a scientific perspective, we’re still trying to grasp what the nervous system is trying to do.”

The motion of running has been compared to that of a bouncing ball, but Chang likens it to a pogo stick, bouncing up and down. Still, human legs are far more complex than the toy’s linear springs.

The human leg has “motor redundancy,” Chang says, which means there are more muscles than are needed. Because each step is different, different muscles are used every time a foot touches the ground, each muscle helping the others compensate for injuries or changes in terrain.

“We know we have a destination or speed as a goal, but what are the physiologically relevant targets that the nervous system actually monitors?” Chang asks. “Is it overall force on the ground? Is it foot position?”

To answer those questions, Chang and his team study runners on a specialized treadmill in their lab. It’s actually two treadmills, side by side, and a subject runs with one foot on each belt. The instrumented treadmills measure the force of each footstep while a motion-capture system measures muscle activity.

On the other side of the lab, the team studies the movement of rats using an X-ray system that captures video at 500 frames per second.

Typically the team brings in healthy young people—there are plenty of those to find around campus, Chang notes—to serve as control subjects. They also test out the motion of amputee subjects.

As a child, Young-Hui Chang would watch National Geographic TV shows and marvel at cheetahs chasing down gazelles, apes swinging through trees, vampire bats slicing through the air.

After beginning his academic career in mechanical engineering, Chang’s interest in animal locomotion returned. He wrote his doctoral dissertation on how humans run in strange environments, such as reduced gravity.

Now the director of Georgia Tech’s Comparative Neuromechanics Laboratory and an assistant professor in the School of Applied Physiology, Chang studies how animals—particularly humans—move.



the BASELINE

7 Institute faculty members named fellows of the American Association for the Advancement of Science.



500,000

annual funding, in dollars, for an FAA aviation safety team including Tech and other universities.

“

We're still trying to grasp what the nervous system is trying to do.”

“We've brought in some elite people with limb loss, Paralympic caliber,” Chang says. “It's been really impressive watching them. It's pretty humbling, actually. They're coming in with a prosthetic leg, and they can run circles around most of us.”

Chang hopes that a more thorough understanding of how legs move will improve rehabilitation techniques and prosthetics in the future.

One of his more interesting discoveries is that, contrary to the old proverb, most creatures learn to run before they walk.

“Most people in the field would be surprised to hear that,” Chang says. “Running is relatively simple. Most of your joints are doing the same thing at the same time. When you're walking, joints are doing different things at different times. Different muscles are being activated. In terms of the physics ... like a rolling coin, there's some stabilization just by moving faster.”

Chang notes that baby chickens can take as long as two weeks to learn to walk, but they run almost as soon as they're hatched.

One of the pitfalls of Chang's research is that he's always analyzing how he and others move.

“I do think about it a lot when I run or when I am out in public,” he says. “I'll be at the mall and analyze people as they walk by, try to guess what's wrong with them if I see a limp.”

He describes his research as curiosity-driven, understanding just for the sake of understanding. An upcoming project will look into the mechanics behind flamingos' iconic one-legged pose.

“It might seem very esoteric to study these different and even strange experimental set ups, but they are all carefully thought through to add to the larger puzzle of gaining a fundamental understanding of how locomotion is controlled,” he said. “We're making some really good strides, no pun intended.” ▲



OF COURSE: HISTORY OF ENERGY

(HTS 4081-A: Seminar in History of Technology, Spring 2005)

Instructor: Professor August W. Giebelhaus

Syllabus says: “This seminar will investigate selected topics within the relatively new field of energy history. Although we will spend some of our time looking at energy use patterns in antiquity and preindustrial times, the heart of the course will focus on humankind's use of energy in the industrial era since the 18th century.”

Required Reading: Barbara Freese, *Coal: A Human History*; August W. Giebelhaus, “Farming for Fuel: The Alcohol Motor Fuel Movement of the 1930s,” from *Agricultural History*, Vol. 54 No. 1 (January 1980).

Lecture Notes: “February 9: The modern transition to petroleum; birth of a new industry; Standard Oil and its competitors; monopoly to oligopoly.”

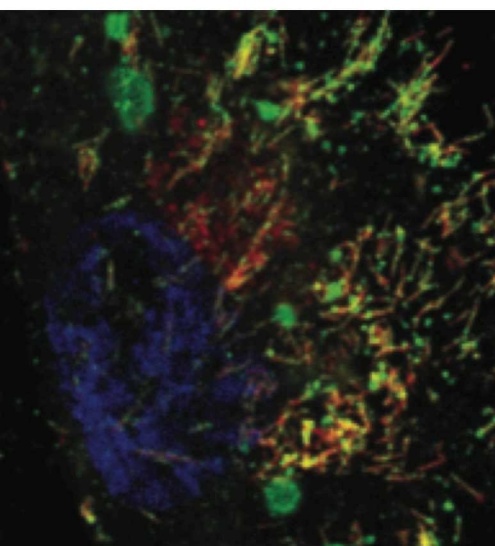
400,000 square feet of research facilities available at the newly renamed Georgia Tech Manufacturing Institute.



On the Hunt for Virus RNA

Van Jensen

Dyes allow researchers to track a virus' every move.



The streaks of color in this microscopic image are virus DNA with dyes bonded to them to track their movement through a cell.

Philip Santangelo has a cold.

Santangelo, an assistant professor in the Department of Biomedical Engineering, doesn't know where it came from, but he has a guess. Several of his graduate students have been sick, and so he figures one of them must have transmitted the virus to a door handle, which Santangelo then touched with his hand, which he then brought to his face, allowing the virus to worm its way into his skin and into a cell where it set up shop

churning out more of its kind, which then spread all throughout his system.

Thus, his cold.

Santangelo's familiarity with virus transmission stretches back beyond his current sniffle. A mechanical engineer by training, he researches the way that viruses move inside a host. And by tracking virus RNA at the single-molecule scale, he's helping to find new treatments to fight viruses.

Much of Santangelo's focus is on the RSV virus, a leading cause of bronchitis and pneumonia in children. Each year, hundreds suffer from it in Atlanta alone. And there's no treatment.

While scientists have long understood the basics of how viruses spread inside the body, they haven't been able to study viruses in their smallest form—as RNA moving inside individual cells.

And so Santangelo has created probes, each about four or five nanometers in size, that attach to RNA. When a certain wavelength of light shines on the probes, they light up a different color. That allows the probes—and the RNA—to be tracked as they move.

"We want to see the genome enter the cell," Santangelo says. "Where does the genome go? Where does it replicate?"

His engineering background helped in the creation of the probes, which called for math more than biology. The probes utilize Watson-Crick pairings to target

RNA and have organic fluors (a fluorescent dye) attached to them. The pairings are chemically altered to have a high affinity for RNA.

Santangelo's big breakthrough was creating a brighter probe that holds more fluors, which has allowed scientists to observe RNA for days on end. Other probe types last less than a minute.

That level of knowledge is crucial because, even though cells are tiny, they're vastly complex. "The cell is a horribly nonlinear system, and it's hard to even quantify the number of elements," Santangelo says.

The hope is that by developing a thorough understanding of what the virus RNA does inside the cell, researchers can create a plan to fight the virus. Like most viruses, RSV sequesters virus-fighting proteins. Santangelo hopes to find a way to prevent the virus from overpowering that innate immune response.

The research also could lead to new discoveries related to cancer. When cancer develops, the body's messenger RNA "gets very messed up," Santangelo says. He's working to track that RNA and see what's going wrong.

There's also the potential to take biopsies and learn beforehand whether certain types of chemotherapy will be effective for a given case. Currently, patients often have to go all the way through treatment to learn if it will help.

The National Cancer Institute's Innovative Molecular Technologies Analysis Program provided a grant for Santangelo's research into cancer RNA.

"Understanding these things at the single-cell level is really important," he says. "The problem now is people are looking for downstream effects. I tend to want to get as close as possible."

Although one assumes his current encounter with a virus is a little too close for comfort. ▲



the BASELINE

25

compounds differing in the metabolic profiles of whale sharks depending on the animals' health, Tech researchers found.



141,000

people who enrolled in the eight Georgia Tech courses offered free online through Coursera.



The Jesse W. Mason Building

 Van Jensen

Jesse W. Mason was nearing the end of a long and influential tenure at the Institute when he learned his name would grace the new civil engineering building on campus.

Mason served on Tech's faculty from 1938-72. He was a Regents professor in chemical engineering, head of the Department of Chemical Engineering and later dean of the College of Engineering.

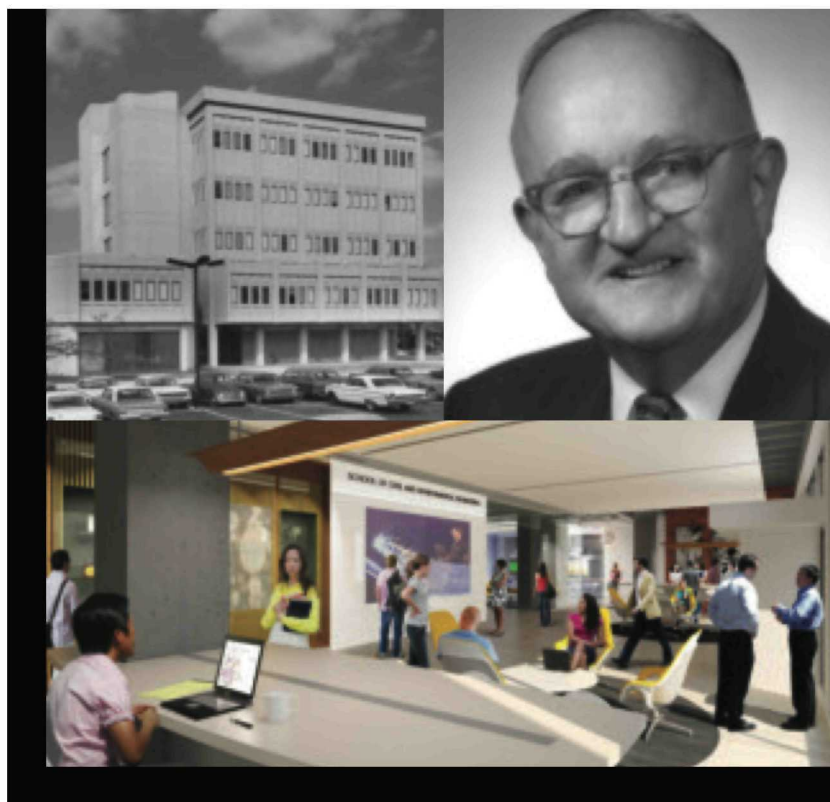
According to *Dress Her in White and Gold*, the history of Tech written by Robert Wallace, Institute President Blake Van Leer selected Mason to head a committee to create an advanced plan for academics at Tech. And later, Mason was an instrumental faculty member in selecting Van Leer's successor, Edwin Harrison. "We ... wanted a man who would work with the faculty to promote a greater Tech, as well as one who would do an outstanding job in representing us before the Regents, the alumni and the general public," Mason said.

Since the Jesse W. Mason Building opened its doors in 1969, it has been the home away from home for civil engineering students at Tech. The five-story, 90,000-square-foot structure was lauded for its cutting-edge classroom design and technology.

In the decades since, slide rules have given way to computers, and all of that foot traffic has worn down the building's halls. On a trip through the Panama Canal in April 2012, alumni Howard Tellepsen, CE 66, and John Huff, CE 68, heard about the Mason Building's deteriorating condition and decided to act. Several hours later, they had raised nearly \$1 million, and a restoration effort was underway.

The \$10.5 million renovation project will leave the major structural components intact, but already construction crews have cleared out asbestos, upgraded HVAC systems and installed a new sprinkler system.

Other efforts include making the space more useful and



• Clockwise from upper left: The Mason Building shortly after its completion in 1969. Jesse W. Mason. An artist's rendering of the renovated lobby.

comfortable for students and making Mason more environmentally friendly.

"The Mason Building was hemorrhaging energy—and money—with the old heating and air conditioning units," said Jimmy Mitchell, CE 05, the sustain-

ability director at Skanska and a leader of the renovation project. "The new building design will give students more places where they can collaborate with other students and faculty on projects. That will make a world of difference when they work in the field."

That type of forward thinking would be music to the ears of the building's future-focused namesake. ▲

 For more information on the renovation project, visit mason.ce.gatech.edu.



If You Can't Stand the Heat, Get Out of the Salsa Club

Eric Hamilton

On Monday nights, the fourth floor of the Campus Recreation Center is home to the usual pickup basketball games and, on the far side of the courts, fencing team practice. One Monday last fall, I walked along the edge of the court and suddenly heard an incongruous sound: Cuban jazz music floating out of a room labeled “Studio C.”

More than 100 students filled the room. Among them were scattered several “Certified Salseros,” as their shirts read. Pierre Thys, one such salsero (Spanish for “salsa dancer”), asked how many of us were new to salsa. I raised my hand, and my nerves slightly calmed when the vast majority of hands also shot into the air.

A year earlier, Jaime Toro, an aerospace engineering graduate student, had been in the same position. Now Toro is serving his first term as president of the Georgia Tech Salsa Club. “I don’t know if I could be president—I have only been here one year,” he said when asked to apply for the role. But since taking the position, Toro has nearly doubled class attendance.

The Salsa Club started in April 2006 and has evolved into two components: a competition team and a noncompetitive organization that teaches salsa classes to students, alumni and the public three to four times a week.

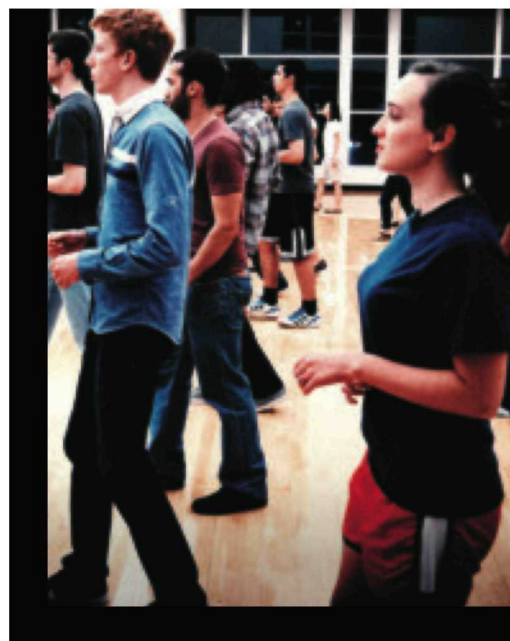
Classes range from beginner to advanced and cover many club-style Latin dances, and they provide members with

access to local salsa competitions.

Each month, the club also holds an event called Salsa Sting at the Georgia Tech Student Center Ballroom—“considered by many the best ballroom in Atlanta,” the club boasts. The event starts off with beginner and intermediate salsa lessons and continues with exciting performances from experienced dancers, and can run as late as 2 a.m. These events draw large crowds of amateurs and experts alike from around Atlanta.

Taking the beginner class that Monday night, I found it to be a great way to escape the stress of classes. But it shared one similarity with my academic courses: The salsa instructors jumped—or in this case *stepped*—right into the material. They showed us the basic steps and right and left turns. With the help of an instructor, I began to feel as though I had become a master salsero myself.

However, that all changed once they



introduced a simple element: music. Everyone in the class began to bump into each other, and we learned that our sense of rhythm wasn’t so refined after all. Then came another complicating factor: It was time to test our skills with a partner.

Unlike in decades past at Tech, the ratio of guys to girls proved to not be an issue. The guys had to “twist” their partners, while the girls had to figure out how to do the steps they’d just learned but in reverse. It wasn’t pretty.

After dancing with several partners, we concluded the class with a recap of what we had learned. Even though the class was as challenging as most of life at Tech, it was great to step out of the classroom and into the rhythm of salsa. ▲



the BASELINE

52

times more toxic the Deep Water Horizon oil spill has become thanks to two million gallons of dispersant used to clean up the spill, Tech researchers found.

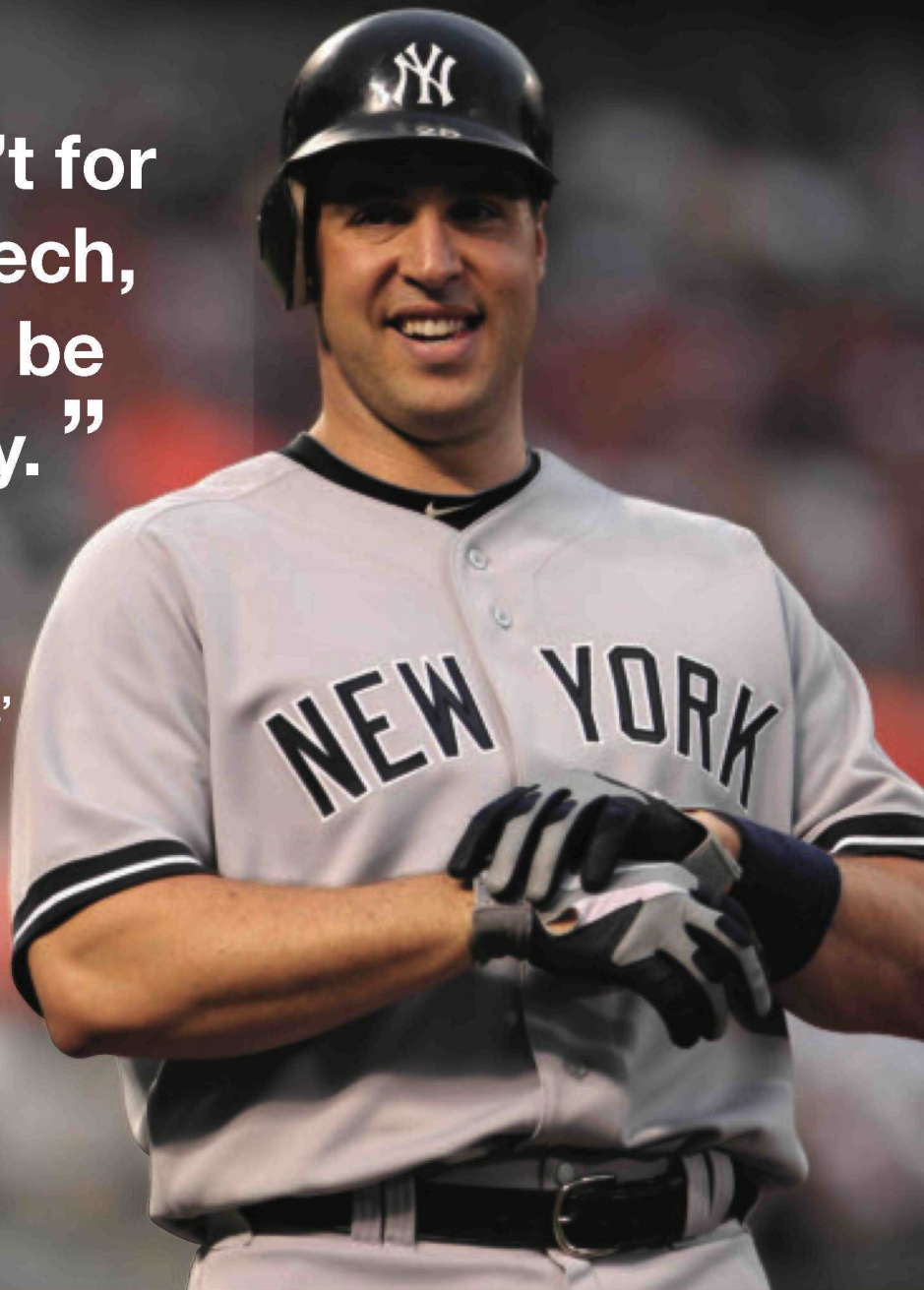


Philanthropy at Work

**“If it wasn’t for
Georgia Tech,
I wouldn’t be
here today.”**

Mark Teixeira

**Class of 2002,
New York Yankees’
first baseman**



- Athletics scholarship recipient
- 1999-2001 letterwinner
- 2001 National Collegiate Player of the Year
- Philanthropist

Hometown: Severna Park, Maryland

Hobby: Golf

Endowments supporting undergraduate scholarships, graduate fellowships, and athletics scholarships are a top priority for Campaign Georgia Tech, the \$1.5 billion effort to enable Georgia Tech to define the technological research university of the twenty-first century.



**Campaign
Georgia Tech**
Our time. Our legacy.



Movin' On Up

In October 2010, the *Alumni Magazine* introduced you to a fresh-faced batch of first-year Tech students. Here, we check in on their progress at the Institute and their ever-growing plans for the future. For more on these crackerjack Ramblin' Wrecks, and to track their time on campus so far, visit gtalumnimag.com/thirdyears.

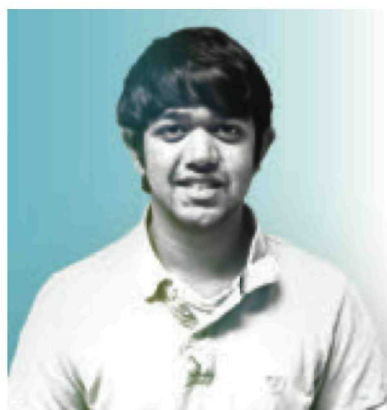


Mike Jasper, Jacksonville, Fla. — Mechanical Engineering Last May I was elected chief engineer for Tech's Formula SAE Team, which designs and builds small formula-style racecars and competes with 120 teams in Detroit. That helped me grow as a leader and a project manager. I am constantly amazed by how hard Tech pushes us in our academic studies. There is a sink-or-swim attitude here, but I appreciate an atmosphere that rewards hard work. I know when I get out, I will have been work-hardened to the point where I am able to tackle any challenge.

Lily Ponitz, Sarasota, Fla. — Environmental Engineering I've been dedicated to Engineers Without Borders-Georgia Tech since my freshman year, and it's changed my life. I've been to Cameroon twice in the past year to set up a clean water supply for a rural village. Seeing clean water flowing from the taps was a realization of one of my biggest dreams. My plan for the distant future is to either work for or



have my own firm that designs sustainable breweries. The brewing process is incredibly resource intensive, and breweries are a perfect place to make an impact on conservation, sustainability and cost savings. And I can't imagine the work environment being too unbearable.



Anirudh Sundararaghavan, Alpharetta, Ga. — Biomedical Engineering I've

been heavily involved in research as a Petit Undergraduate Research Scholar. The progress that I have made through the entire research process has been my proudest accomplishment in the last year. Soon I'll be taking the MCAT exam—one more step in the direction of medical school, a goal of mine for a long time. Last semester I took a class that involved observation inside an emergency department; there were some gruesome moments, but seeing doctors and nurses actively trying to save lives was inspiring.



Norquata Allen, Chattanooga, Tenn. — Aerospace Engineering I am realizing that I am getting older and will be graduating soon, which is slightly disheartening. I will be starting the last rotation of my co-op at Delta Air Lines in the spring. The next semester, Fall 2013, will mark the beginning of 100 percent major classes as opposed to having an elective or social science on my schedule. As far as this upcoming summer, studying abroad would be nice, but I am

searching for an internship. I love where I am right now and plan on involving myself in the school much more. I am a recent initiate in Sigma Gamma Tau, an AE honors society, and plan on joining an aerospace affiliate/interest group on campus.



Tanner Smith, Suwanee, Ga.

— **Computer Science** This past summer I studied abroad in Barcelona with the College of Computing. Barcelona was awesome, and I am proud of how much I accomplished outside of my comfort zone. Now I am trying to get an internship for the summer. The interviewing process has been pretty stressful, but I remain positive and confident I will find the right place to work eventually.



Hope Brown, Cincinnati, Ohio
— **Chemical & Biomedical**

Engineering My proudest accomplishments in this last year are being initiated as a brother of Alpha Chi Sigma Fraternity (a professional chemistry fraternity) and getting a job at the Georgia Tech Post Office. The biggest challenge that I work everyday to overcome is my schoolwork. With the advice of past students and advisers, I have changed how I am going to approach my course of study. I will be spreading out a lot more of my classes so that I will understand the material better. Next semester I will be here in Atlanta taking classes, but in the summer of 2013 I will be interning in order to gain more experience in my field.



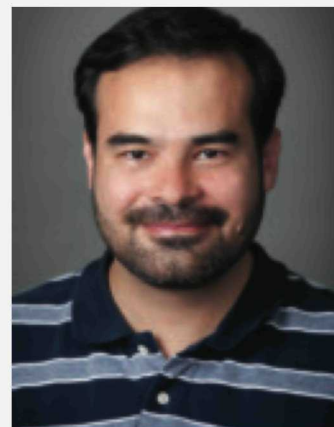
Ronnie Foreman, Bethesda, Md.

— **Aerospace Engineering** The fall semester has been about developing my engineering intuition. I have found that knowing the exact procedure for completing an assignment is not nearly as valuable as the ability to look at a situation and work based on instinct. Each time I fly home for the holidays, I'm more fascinated by the wing manipulations of the planes taking me home as I see first hand what I'm learning here at Tech. I'm hoping to complete my master's degree at Tech in aerospace, but I'm not sure where I'd like to pursue my PhD yet. I'm thinking astrophysics for now. ▲



SERVICE SPOTLIGHT

PHD STUDENT HONORED AS YMCA VOLUNTEER OF THE YEAR

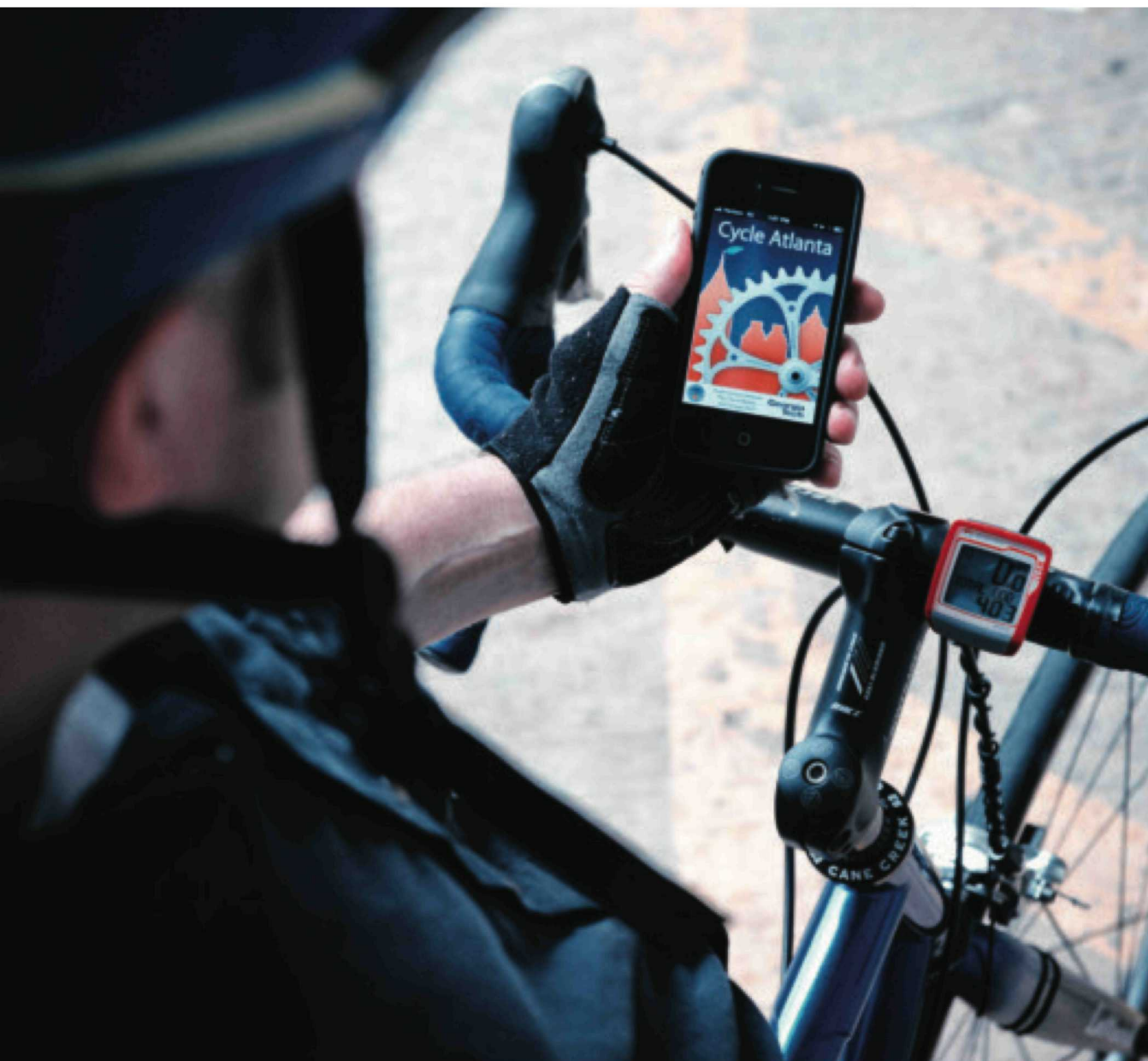


When Carlo Davila Payan moved to Atlanta to pursue his PhD in industrial engineering at Georgia Tech, he enrolled his son in the Head Start program at the YMCA of Metro Atlanta.

After seeing up close how effective the Y's early childhood education program could be, Payan decided to get involved. He now serves on the Head Start policy council, has served as the parent committee president and volunteers as a classroom assistant, reading to the children.

For all his efforts, Payan has been named the Volunteer of the Year by the YMCA of Metro Atlanta. He was honored at a dinner on Nov. 12.

"I see all kinds of people at the Y, and it's great that there is room for everyone there," Payan said. "The Y involves the entire family, not just the children, so good things develop for the entire community. I'm glad I decided to volunteer and support such a wonderful effort"



→ **CYCLE ATLANTA** **What is it?** An iPhone app that tracks cycling routes through Atlanta and shares information with the City of Atlanta to help plan cycling initiatives. **Who made it?** Kari Watkins, assistant professor of transportation systems engineering, and Christopher Le Dantec, PhD CS 11, an assistant professor of digital media, with support from the City of Atlanta Department of Planning and Community Development, the Atlanta Bicycle Coalition and the Atlanta Regional Commission. **What inspired it?** Le Dantec said one reason many Atlantans don't commute by bicycle is a lack of lanes, racks and other bike-friendly amenities. He and Watkins wanted to encourage infrastructure development. **Why is it game changing?** Cyclists can record their rides, and the free app will relay that data to City officials, helping them know what to build and where. "The city has a desire to put proper infrastructure in place," Le Dantec said, "but needs better information from citizens about where they currently ride and would like to cycle." Fellow cyclists can benefit from the information, too.

→ AMAZING CREATURES

What is it? Computational models of human and animal motion used to build simulation tools for scientists, engineers and artists. **Who made it?** Karen Liu, associate professor in the School of Interactive Computing. **What inspired it?** Liu long has been interested in human motion—“The coordinated operation of 206 bones, more than 600 muscles, and countless tendons and ligaments,” she says—and her thorough understanding of the physics and motor control behind motion proved to be invaluable to animators as they sought to generate animation automatically. **Why is it game changing?** Liu’s research has been influential in computer animation as well as robotics, bioengineering, neuroscience and anthropology. What sets her apart, she says, is “the incorporation of our partial understanding of human biomechanics, incomplete observation of motion from the real world, and limited computing resources and algorithms to design scientifically sound and practically robust computational models.”



→ **BIKE TOW LEASH** **What is it?** A leash that attaches to a bicycle, allowing someone to safely walk a dog while riding a bike. It clamps low on the bike near the rear axle. It automatically communicates bike speed and direction to the dog without tipping the bike or tangling the leash. **Who made it?** Mike Leon, ME 85. **What inspired it?** Leon and his wife raised service dogs and had a black Labrador with seemingly endless energy. Leon was biking their children to school, and he wanted to take the dog along. He couldn’t find a safe way to leash the dog to the bike, so he decided to build one. **Why is it game changing?** Leon used his knowledge of physics to create a leash that would prevent tipping even if the dog lunges. The Bike Tow Leash is essentially a prosthetic arm that guides the dog. The device earned the American Pet Association’s five-star rating and was featured as an editor’s choice in *Dog Fancy* magazine. “The responses to the Bike Tow Leash have been fabulous from the people who use them,” Leon said.

→ **DRAGONFLY DRONE** **What is it?** A robotic dragonfly that can mimic the insect’s flight. It measures 6 inches long, weighs about 25 grams and is powered by a lithium polymer battery that provides hover times of 8-10 minutes. **Who built it?** A team led by Jayant Ratti, MS ECE 08, a PhD student in robotics, and Emanuel Jones, a mechanical engineering master’s student, with a \$1 million grant from the Air Force. **What inspired it?** The project began in Tech’s Robots and Intelligent Machines lab, where the team was developing designs for small drones. The dragonfly, with its wide range of swift motion, struck them as an ideal creature to replicate. **Why is it game changing?** The TechJect Dragonfly is small enough to navigate, patrol and map tight spaces, and it can be camouflaged to look like a real dragonfly. The team’s recent fundraising campaign on indiegogo.com allowed them to put the Dragonfly into production.





David Williamson, Keeper of the Trolleys

📍 Jeff Haws

For David Williamson, transportation isn't his job—it's who he is. As Georgia Tech's associate director for parking and transportation, Williamson helps keep the school's trolley and bus system moving on a daily basis. But this is just the latest stop on his 40-year career of keeping people on the move.

Where did you do your transportation work prior to Tech? I started with Regional Atlantic division transit in Richmond, Va. I spent 10 years with them. Then I moved here and went to work for MARTA. I spent 20 years with them, then came to Tech nine years ago.

How much has the fleet of trolleys and buses grown since you've been at Tech? When I came on board, the system had pretty well just begun. The system that's running as you see it today, it's grown a couple of buses.

What's the lifespan of a bus or a trolley? Our expectation with the buses is 10 years. The trolleys are very similar. They're sitting on the same frame; they just have a different body on them.

What powers the fleet? When I first came on, we had diesel buses, and the trolleys were natural gas. Now, we run biodiesel through them all.

What are some of the challenges you face in your work? It's about peak times of the day. Ours starts at 7 a.m. and ends at 6 p.m. You're constantly trying to meet the demand at those times of day. You have the challenges of the class schedule and trying to meet that. We're in an urban area, another huge challenge for us.

How much do the buses and trolleys run each year? Our principal measure is hours of service. The trolleys, with the schedule we draw up, if you added it up for a year, it's probably 20,000 hours of service. If someone's butt is in that seat, that's an hour of service. On the bus side, it's 27,000 per year.

How much maintenance do the vehicles require?

We have eight trolleys and 13 buses. Six of the trolleys and 10 of the buses are in service each day. The rest are out for the maintenance people to work on them.

What do you do with vehicles that can't run anymore? These vehicles are expected to last 10 years. At the end of this contract [with Groome Transportation], these vehicles will go away, and I expect to get new vehicles. The downside to that is, year nine and year 10, things are starting to show their wear.



What do you think Georgia Tech transportation does well? You don't really have to pay any attention to the clock if you're a rider. You can just get out there, and a trolley will come soon. That's a very high level of service.

What's your favorite part of the job? I love working with these students. It's a great environment. If I can get one or two of these kids interested in going into this arena ... I know we've churned out civil engineers; if I can get somebody interested in this field, that's good enough for me. ▲

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Tech's Five-tool Outfielder

Do-everything outfielder Brandon Thomas has racked up statistics, awards and honors in his three seasons on the Flats. Heading into his senior season with the Yellow Jackets, he's looking to help the team to a successful campaign.



Why did you come to Tech?

It offered the best combination of a great baseball program and strong academics. I also grew up in Atlanta and have gone to GT baseball games my whole life. It's been great having my family in town at the games.

What's your favorite memory from your time with the Yellow Jackets?

Winning the ACC Championship last year. Not many people expected us to do much, so it was a great feeling when we upset some of the better teams in the country.

What hobbies do you have outside of baseball?

I like hanging out with family and friends, attempting to

play guitar and watching movies.

Who's the toughest pitcher you've faced?

It's a toss-up: Matt Harvey from North Carolina or Danny Hultzen from Virginia. Harvey is in the big leagues with the New York Mets, and Hultzen is close to the big leagues with the Seattle Mariners.

What's your favorite movie?

The Town.

What are your plans after college?

I plan on playing baseball professionally. After my playing career is over, I would like to somehow combine what I have learned in the business school with my experiences in baseball.



CREATING, ON AND OFF THE COURT

As point guard for the Yellow Jackets, Dawnn Maye is always looking to create scoring opportunities for teammates and herself. Off the court, the third-year History, Technology & Society major turns her creativity toward video production. Maye's "This I Believe" video is used in Tech's first-year English classes.

Why did you come to Tech? I chose Tech because of how family-oriented the team is. Also because of the genuine and true love Coach MaChelle Joseph has for each of her players.

What's your favorite memory from your time with the Yellow Jackets? Playing in the ACC championship and also all of our trips we've taken outside the United States.

Who's the toughest player you've gone up against? Baylor's Brittney Griner.

How did you get interested in video production? Because of my love for music and my imagination to create. I really enjoy making my ideas come into form. Unlike others who use writing, I love to use music, cameras and digital software.

What's your favorite movie?
The Incredibles.



the BASELINE

6.81

seconds needed for Tech's Perron Jones to complete the 60-meter dash at the Orange & Purple Winter Classic. He finished first.



459

kills recorded in the 2012 season by Tech volleyball's Monique Mead.



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Brandon Makinson, one of the Atlantic Coast Conference's best divers, has been working on the technical side of his sport since he was an 8-year-old at summer camp. He knows, too, that there's a bit of art to it all—the beauty of diving is in its motion, its twists and turns of the body that lead to the perfect entry.

What judges see as perfect “comes and goes in waves,” said Makinson, a senior who was an All-ACC diver last season and won the ACC Diver of the Week honor three times in 2012. “Recently, they’ve changed the degree of difficulty, where they want more flips. They want to get back to how diving started, where you had the front dive straights and lots of easy technical dives but more artistic in appearance. A lot of Olympic-level divers will take ballet and yoga to get in touch with a more artistic level of it.”

That extra effort to build beyond his technical base has vaulted Makinson into the upper echelon of the ACC and earned him the opportunity to compete for a spot on the Olympic team for his native Canada. It helped make him Georgia Tech's all-time record holder in both the 1-meter dive (375.25 points) and 3-meter dive (408.1).

What started as casual swimming during summer break as a child has blossomed into a skill that's allowed Makinson to pursue his interest in aerospace engineering in one of the best such programs in the country. He makes the most of his time out of the tank, qualifying for the ACC All-Academic Team and being named to the ACC Academic Honor Roll in each of his first three years at Georgia Tech.

Making Waves

Jeff Haws

Yellow Jackets diver creates a splash. Figuratively, that is.



the BASELINE

1:59.44

time needed for Tech's Anton Lagerqvist to finish the 200-meter breast stroke at the GT Invitational. He won the event.



20

rushing touchdowns on the season by quarterback Tevin Washington, who also passed for eight scores.



Makinson shows that passion and dedication can turn diving—a nontraditional sport that doesn't earn the same attention as football, baseball, basketball and even swimming—into something big.

"I would relate it to any other sport that people get into," Makinson said. "Once you like it and commit to it ... once you put your mind to it, there's nothing that's going to hold you back. It takes the same amount of commitment that any of those sports did."

Maybe even more commitment, at times, given how individual the sport is. Coaches can give divers tips and help them refine their craft, but diving is very much about repetition and competing against yourself.

Makinson knows this well. Every time he ascends the diving platform, he's up there alone.

Diving is also one of the more subjective sports, which Makinson admits can cause a certain amount of frustration. Knowing what the judges are looking for in each dive can make a difference in the score a diver gets, and all great scores aren't equal.

But after more than a dozen years of work, Makinson says he knows sooner than spectators or even the judges when he's nailed his dive.

"I can almost tell how dives are going to go as I leave the board," Makinson said. "How I set up, my balance, my ride on the board sets it all up. As soon as I hit the water, I can say 'That was good; I should get some good scores for that.'"

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Dollars & Sense: Tom DeLoach

 Van Jensen

Despite growing up in prime racing country (south Georgia) and attending a car-crazy school (Georgia Tech), Tom DeLoach, ChE 69, didn't go to a race until well into his career at Mobil. But one taste of the track was enough to hook him.

He became a fan and headed up the Mobil Motorsports program. In "retirement," he launched Red Horse Racing, which competes in the NASCAR Camping World Truck Series.

DeLoach also started up Performance Instruction & Training, a pit crew training facility in his hometown of Mooresville, N.C., that also offers Six Sigma and other training lessons for business professionals.

When did you get into racing? I never went to a race until I was vice president of marketing for Mobil in the United States. I needed to make an appearance at a race because we had some big customers in attendance. I went to the time trials at the Indy 500, and it was just going to be: Go in, say hi. Two weeks later I came back for the 500, and I've been a race fan ever since. I have no interest in driving. It's more the technical side and the marketing side. I see the incredible appeal that the sights, the sounds and the smells have with a customer.

How did you get more involved in the sport? At the time, we were trying to sell Mobil 1. No one wants to smell a lubricant, but put it in a racecar, and suddenly you have a lot to talk about. We could tell customers, "There wasn't a drop of water in the radiator, but the lubricant was so good we managed to finish the race." I

went from marketing to heading up strategic planning for the entire corporation. I'm worried about where we're going to find oil, refining, how we're going to make cleaner products. The corporation decided that racing is like everything else—it's based on relationships. You want to maintain a consistent face. So even though I changed jobs, I maintained the race portfolio. There was the five-day-a-week job, and then there was the weekend job.

When did you decide to retire? When we merged with Exxon, I was one of the senior executives, and usually the senior executives of the smaller companies aren't going to be around much longer. I knew that, so I took a package and retired at 51. That was good for about a week, then I couldn't stand it. So I called Roger Penske and said, "Will you sell me a piece of a team?"

Was it hard transitioning into racing? I'm a chemical engineer. I'm having to learn a lot about aerodynamics. We're trying to make the tires think they're carrying a 45,000-pound vehicle. If they think they're carrying a heavier vehicle, they grip the road better. It's fascinating to me. That's the natural curiosity that's characteristic of Tech engineers.

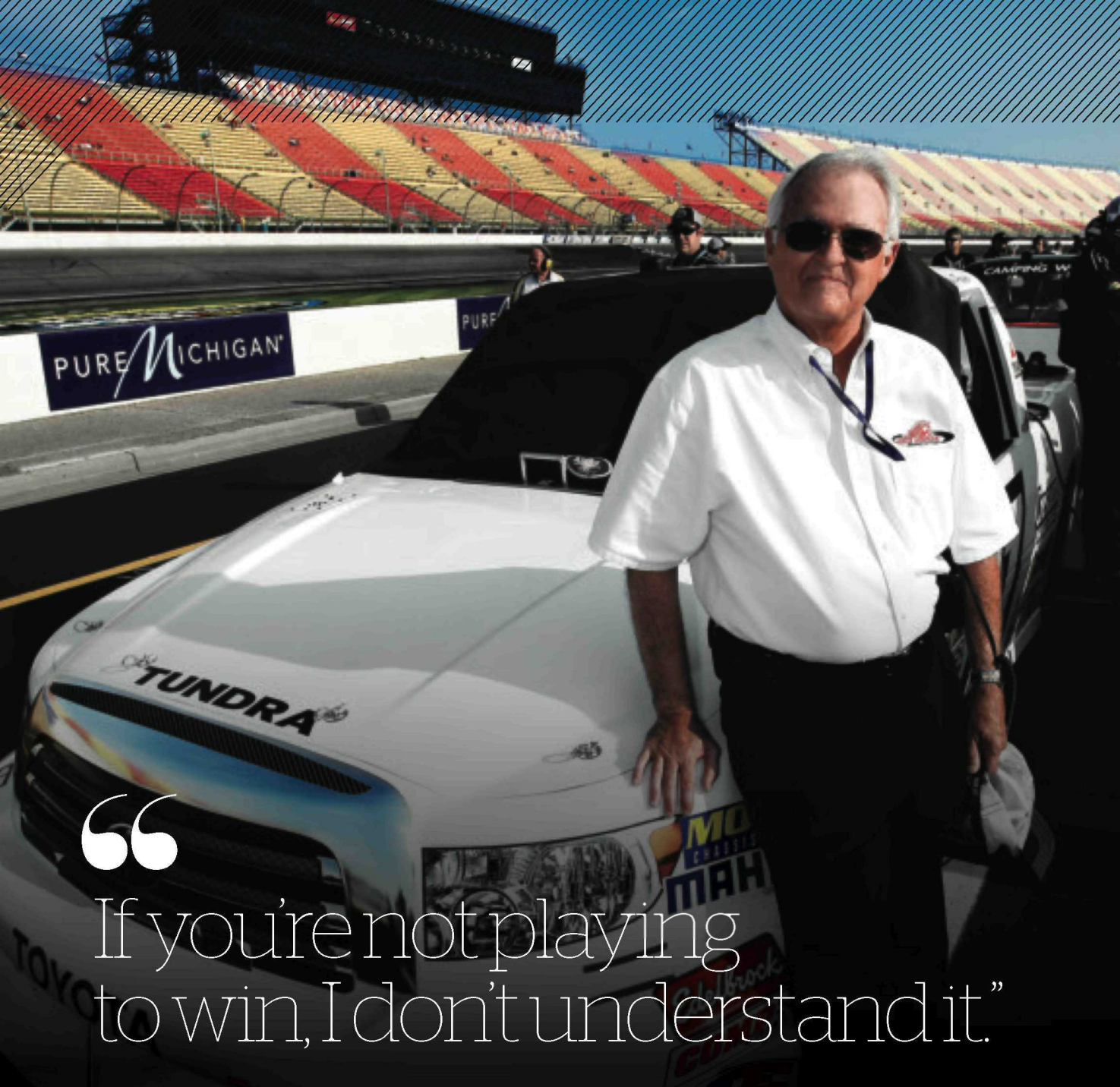
Are there similarities between business and racing? It comes down to people. You put the right people in place to make

something happen. I've got guys working for me, and I have no idea how to do what they do. My job is to put all the best players on the field, even if I can't play.

How did the business-training endeavor get started? I did a lot of business training in my career. You go into a nice classroom, and you go through training, and you have another class, and another class. There's too much classroom. We built something around business training that has corporate executives doing pit stops. You're going to discover, "Wow, I really need some training here. I've got to have the right tools, and they have to be in the right place. And I have to know what my colleagues are doing." Everything you do in business I can show you in a pit stop.

Are there some things in racing that are totally different from the business world? Everyone likes to demonize big corporations. I tell you, the big corporations I worked with, I ran across people with tons of integrity. If you shake hands on it, it's a done deal. The race industry, you don't see near the degree of integrity. It's more of a Wild West deal. It's not as developed with the systems and processes. I'm going in and that [corporate model] is my standard of behavior. We live by the same codes of behavior from the corporate world. I've had some lessons that this world doesn't always work by the same rules.

Most of your employees probably come from the racing world, though. So how do you teach them those corporate standards? We spend a fair amount of time coaching these folks. These are not your graduate engineers. These are guys that are in racing from the grassroots up. These folks have more of a street sense and know how to put things together. I thoroughly enjoy it. At the end you go through a winnowing process. You realize after a period of time that they don't fit, they don't work with the people that are here. And if you



“

If you're not playing to win, I don't understand it.”

can't work with this group of folks, I'll help you find a job elsewhere.

How do you pick drivers? It's assessing their skill base and the equipment they were trying to drive. You can put an incredible driver in a piece of junk, and he's going to show up as a poor driver. ... I look for a patient-aggressive driver. We're going to give you a vehicle that's capable of winning a race. You don't need to drive through someone to win, because you're going to wreck. The guy in front of you is going to make a mistake, and

our equipment is superior. You're going to be able to go past him. It's the same in business. You don't need to roll over everybody to get to where you need to be. Don't hit me with bluster.

How did this season go? We came within six points of winning the NASCAR Camping World Truck Series championship. It's frustrating, because you can look back over the season and say we left a little on the table here and a little on the table there. We didn't lose the championship; it was just that time ran out.

What do you drive? With the race team I have a Toyota Sequoia. At home I have two Mercedes. That came out of work. Mobil was working to build an account with Mercedes-Benz. I rolled an oil filter cap across the table to the chairman of Mercedes, and it said, "Mobil 1 recommended for use with this vehicle" on the cap. Everyone in the room about passed out. We ended up with the contract to have Mobil 1 in every Mercedes dealership. That was a big win. I enjoy playing the game. I say, we go to the racetrack to win. If you're not playing to win, I don't understand it. ▲



Atlanta's transportation network includes railroads, MARTA trains and buses, freeways, bike paths and the world's busiest airport. Georgia Tech alumni and faculty have played a significant role in shaping that infrastructure, and now Ramblin' Wrecks are helping plan Atlanta's transportation systems of the future.

Adapt, Improvise, Innovate

📍 Keith Golden, CE 86, MS CE 89, and Todd Long, CE 89, MS CE 90

Georgia transportation funding is in a time of transition. Much hard-asset infrastructure, like the Interstate System, is 50-plus years old and in need of significant rehabilitation, if not replacement. Unaddressed, congestion will stifle growth and the city's vibrancy. Billions of dollars are needed for long-term solutions.

Anything close to that amount, however, is not likely to be available—at least not from traditional sources. The prevailing view is that foreseeable federal funding will remain static or decline, perhaps as much as 25-30 percent. July's rejection of the T-SPLOST one-cent sales tax referendum showed a majority of Georgians oppose increased state transportation taxes for a variety of reasons. For the 46 counties that did pass the transportation sales tax, expect to see growth as they resolve many of their transportation problems.

Our mission is to continue transforming the bureaucracy into a responsive, customer-focused enterprise making better use of the Department of Transportation's 4,300 dedicated employees. We aim to implement initiatives like variable speed limits, flex and auxiliary lanes, signal synchronization and immediate incident response to maximize the efficiency of our existing infrastructure. We strive to eliminate inefficiencies and privatize work when it makes sense to do so. We want to develop more public-private partnerships and managed toll lanes when they best serve mobility and taxpayer interests, and we'll focus available resources on projects that yield the highest benefit/cost ratio to Georgia.

It is a daunting challenge. But thanks to Tech, we know we are well prepared. ▲



▲ L-R: Keith Golden and Todd Long are the commissioner and deputy commissioner, respectively, of the Georgia Department of Transportation.

Build Upon Existing Vision

🏠 Ryan Gravel, Arch 95, M Arch/CP 99

• Ryan Gravel imagined the Atlanta BeltLine—a 22-mile path for pedestrians, bicycles and light rail circling Atlanta—in 1999 as his Tech master's thesis; he is now a senior urban designer with Perkins+Will.



T-SPLOST, the proposed penny sales tax that would have raised \$8.5 billion for roads and transit in metro Atlanta, suffered defeat at the polls on July 31.

Explanations for this are as divided as the vote. What is clear is that developing a nuanced plan to address the varied transportation needs in a diverse, sprawling region is challenging, and the politics of doing so are even more challenging.

But instead of starting from scratch, what if we built on a bold, sustainable vision already underway?

In the 1960s, Fulton and DeKalb counties and the City of Atlanta began to build the current MARTA rail system.

With nearly half a million boardings every weekday, MARTA is now America's ninth-largest system. It consistently ranks among the most cost-efficient and cost-effective systems in the country and contributes significantly to Georgia's transportation solutions.

But it receives essentially no money from the state. MARTA was last expanded over a decade ago. Complaints about the rail system "not going anywhere" are explained by our lack of investment in it.

The original MARTA Act was far more aspirational and visionary than T-SPLOST, but it was not entirely successful because three of metro Atlanta's five core counties opted not to participate. Perhaps now the time is right.

Clayton, Cobb and Gwinnett Counties—which stand to gain the most from transit expansion—could buy into the system right away.

With significant demographic shifts taking place in these counties, and with leadership changes underway at MARTA, now is the perfect time to leverage our existing assets, mend relationships and move forward with a shared vision befitting Georgia's role in the global economy. ▲


 Van Jensen

Bill Bulpitt's Sunbeam Tiger

Among the many gearheads in the Georgia Tech community, Bill Bulpitt manages to stand out.

Bulpitt, ME 70, MS ME 72, restored a Ford Model A when he was 12; rebuilt a flathead Ford V-8 at age 16; served as chairman of his fraternity's Ramblin' Reck committee; was captain of the mechanical engineering team in the 1970 Clean Air Car Race, a coast-to-coast low-pollution vehicle contest; wrote his master's thesis on the Wankel engine and set up a dynamometer lab in the process; rebuilt and restored a 1966 Sunbeam Tiger, which was featured in *Motor Trend*; supervised restoration of a replica Ramblin' Wreck for the Georgia Tech Hotel; and has participated in almost every Georgia Tech Auto Show. (For more on the Auto Show, see page 76.)

Most recently, Bulpitt bought a second Sunbeam Tiger from a late friend's estate. It had been off the road for 20 years. Here, Bulpitt explains how he returned the Tiger to its previous glory.



When I was in junior high school in 1962, Carroll Shelby introduced the Shelby AC Cobra, an aluminum car powered by the new small-block Ford V-8. It was an absolute sensation. Of course, the car was expensive. A few years later, Shelby helped the Rootes Group of England develop the "poor man's Cobra" by putting the same small-block engine in the Sunbeam Alpine. Suddenly a car that performed like an MGB had acceleration and speed as good or better than an Austin-Healey or a Jaguar.

After I graduated from Tech, I began my quest for a Sunbeam Tiger and found my first one (a 1966 Mark I) in Fort Walton Beach in 1973. Sunbeam Tigers today are relatively rare—they made just more than 7,000.

I acquired my second Tiger (a rare Mark II—only 533 examples) in March 2011. It looked pretty sad, with three flat tires, shellac and other foul substances in the gas tank, the remnants of what was once antifreeze in the radiator and engine and locked up brakes from slow seepage of brake fluid onto the drums and disks.

The first step was to get the car running to make sure the engine made the right noises and there were no broken connecting rods. That was relatively easy after cleaning out the gas tanks, fitting a new fuel pump, rebuilding the carburetor and fiddling a little with the ignition.

After firing it up, it became clear that the clutch was beyond hope, so that became the first priority. In a Sunbeam Tiger, clutch replacement requires complete removal of the engine and transmission, which can be quite a chore.

With the engine out, I did a general cleanup of the engine bay and components, fitted a new flywheel and all new clutch parts, and added a complete set of valve springs and valve seals.

I painted the engine and added and re-installed new dress-up items. The radiator was re-cored, and all new hoses for the radiator and heater were fitted. A new carburetor was obtained when the rebuilt one proved troublesome, and solid-state ignition was added to the distributor and a new ignition coil and ignition wires were added.

Some shorty glasspacks were added just to get it running, and the engine was restarted.

Redoing the brakes was more troublesome than expected—the calipers needed some new parts and refinishing.

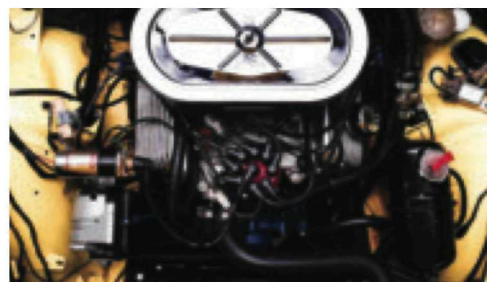
After some run time it was clear that I was just postponing the inevitable by not completely hot-tanking and resealing the gas tanks, so that had to be done—a dirty and time-consuming job.

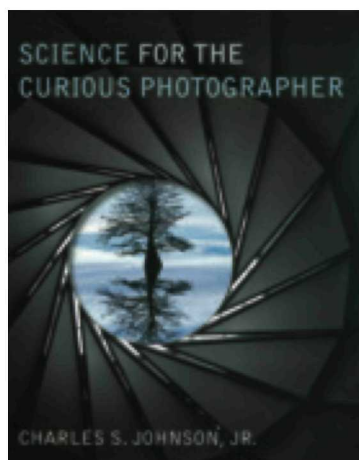
There are still some challenges remaining—getting some rare stainless trim straightened, probably redoing the clutch since the one installed is much too stiff. And eventually the paint job.

The first drives were just short bursts around my friend's driveway, but it was clear the car had power. When I was finally ready to drive it the 49 miles back to my house in Dunwoody, Ga., it was really a little scary. Since the tires had been sitting flat for at least 10 years, they were not happy getting on the highway. The front end vibrated so bad at 60 mph that I could barely hang onto the steering wheel. As soon as I got it home a new set of tires were installed, along with a new (barely legal) exhaust system.

I must admit, though, I felt like a teenager again. ▲

Have a Tech Hack of your own to share? Send details to Editor, *Georgia Tech Alumni Magazine*, 190 North Ave. NW, Atlanta, GA 30313, or publications@gtalumni.org. Entries will be selected for publication in the magazine and at gtalumnimag.com.





Science for the Curious Photographer

Charles S. Johnson Jr., Chem 58

A professor of chemistry emeritus at the University of North Carolina, Johnson is also a hobby photographer, and he melded his passions in this 2010 book.

FICTION

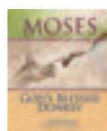


Grandma's Hands: Cherished Moments of Faith and Wisdom
Calvin Mackie,
ME 90, MS ME

90, PhD ME 96 Proverbs, family wisdom and Bible passages are paired with tender photos of grandmothers and grandchildren in this inspirational book.



Reconnecting and Moses, God's Blessed Donkey
Ronald Stock,
IM 65 Stock, currently president of WMC Insurance Services in Laguna Beach, Calif., has found time to write two new works of fiction: one about re-discovering lost love, the other a retelling of the life of Jesus through the eyes of a stable hand.



NONFICTION



Atomic Assistance
Matthew Fuhrmann,
IA 04 Fuhrman, an assistant professor of political science at Texas A&M University,

explores how "Atoms for Peace" programs inadvertently help spread nuclear weapons and foster insecurity.



Plan B Sucks!
Barry Givens, ME 08; Anthony Hylick, CE 05; Mario Taylor II, Mgt 08; and

Omari Worthy, CS 05 Advice on how to avoid the rat race, follow your dreams and still pay the bills from four young Yellow Jackets who've been there, done that.

Active Leadership: A Blueprint for Succeeding and Making a Difference
Hodges L. Golson, IM 67



Golson, a consulting psychologist, published his second book, a guide to becoming a superior business leader, in July. His first, *Influence for Impact: Increasing Your Effectiveness in Your Organization*, was released in 2011.



Be Extraordinary! Crush Mediocrity. Spark Curiosity.
Justin Honaman,
IE 96

This conversational book on leadership focuses on transformation of the reader as an individual and as a leader within his organization, featuring insight from key leaders in a variety of professional fields.



CEO's Secrets to IT Success
Linda Lee Hughes,
IE 83

Hughes, president and CEO of the Great Ridge Company and a former divisional CIO of Coca-Cola, presents the first book in a series guiding C-level executives through every aspect of IT organization.



The Synergy Shift
Shannon E. Karafanda,
Mgt 95

Karafanda, an ordained Methodist deacon with a background in family ministries, reflects on the joys and challenges of the first years of a new church.

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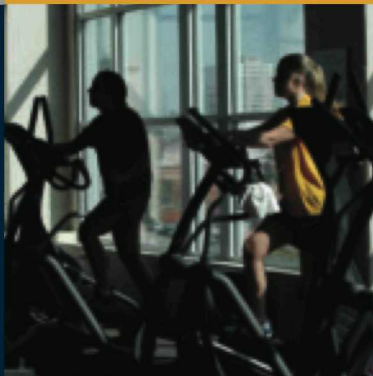
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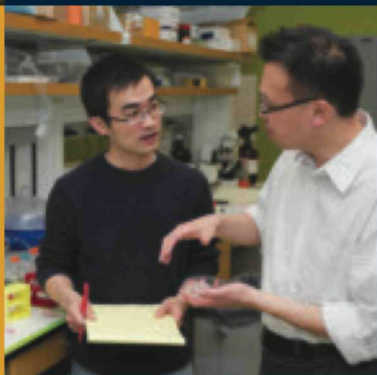


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Energetic.

Focused.

Intense.

These are a few of the words that come to mind when thinking of Roger Krone. Since earning a bachelor's in aerospace engineering from Tech in 1978, Krone has been rocketing up the ranks in the aerospace industry. He started as a junior aircraft designer toiling at a drawing board, and now he's president of Network and Space Systems at Boeing, managing 16,000 employees in 38 states and 11 countries. He's also a husband, father, licensed commercial pilot and a competitive runner.

When Krone isn't jetting to the divisions he oversees or leading development of

next-generation spaceflight systems and satellites, he is a Six Sigma green belt, a certified public accountant, an associate fellow of the American Institute of Aeronautics and Astronautics, a fellow of the Royal Aeronautical Society, a board member of the United Launch Alliance, a board member of the Greater Washington chapter of the Urban League and a member of the Georgia Tech Advisory Board.

Here, we take a look at a week in the always-moving life of Roger Krone. **Fasten your seat belts.**

SUNDAY, 11 A.M. ANNAPOLIS, MD.



KRONE RAN 12 MILES TO TRAIN FOR THE ARMY TEN-MILER AND MARINE CORPS MARATHON.



THE 45-MINUTE DRIVE FROM ANNAPOLIS TO REAGAN NATIONAL AIRPORT WAS THE FIRST LEG IN A WEEK FULL OF TRAVEL.



SUNDAY, 5 P.M. REAGAN NATIONAL AIRPORT, WASHINGTON, D.C.



SUNDAY, 6:19 P.M. LAGUARDIA AIRPORT, NEW YORK CITY.



KRONE WAS IN NEW YORK CITY TO RECOGNIZE NATIONAL CYBER SECURITY AWARENESS MONTH, LED BY THE NATIONAL CYBER SECURITY ALLIANCE.

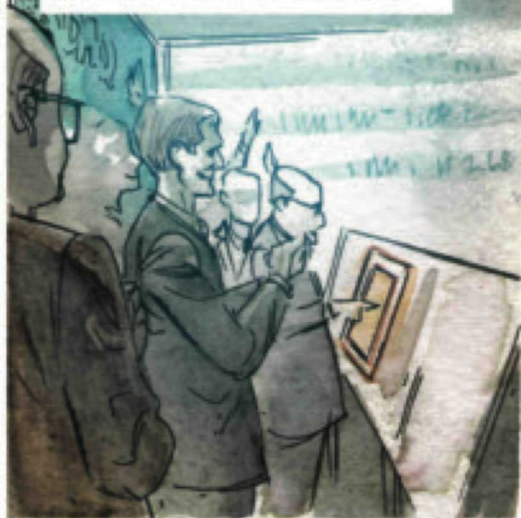


MONDAY, 9:30 A.M. EN ROUTE TO NASDAQ HEADQUARTERS, NEW YORK CITY.

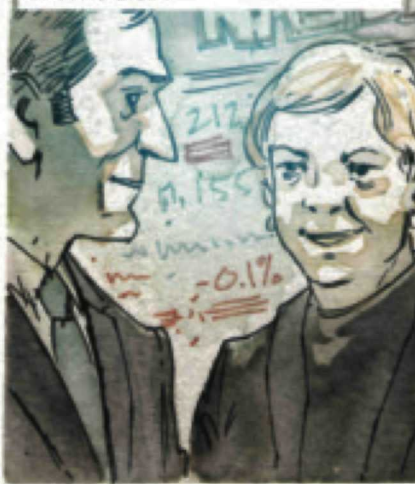
KRONE WALKED THROUGH TIMES SQUARE, PASSING BY A TAPING OF GOOD MORNING AMERICA.



THE NASDAQ BELL RINGING HELPED RAISE ATTENTION TO THE IMPORTANCE OF CYBER SECURITY TO COMPANIES LIKE BOEING.



DEPUTY SECRETARY OF HOMELAND SECURITY JANE HOLL LUTE WAS AT THE EVENT. KRONE EXPRESSED HIS THANKS FOR INCLUDING BOEING IN THE NASDAQ EVENT.



KRONE WALKED TO A MEETING WITH A REPORTER.



MONDAY, 12:30 P.M. WEST BANK CAFÉ, NEW YORK CITY.

THEY DISCUSSED BOEING'S CYBER AND SATELLITE BUSINESS.



MONDAY, 1 P.M.



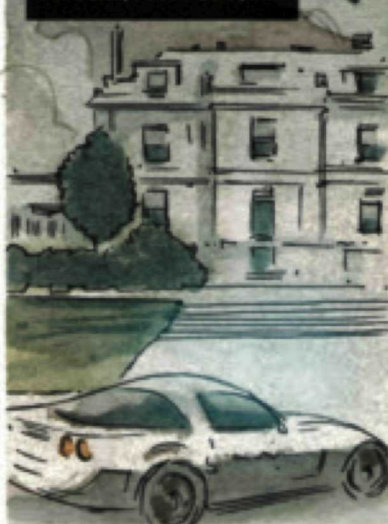
MONDAY, 3 P.M. LAGUARDIA AIRPORT, NEW YORK CITY.



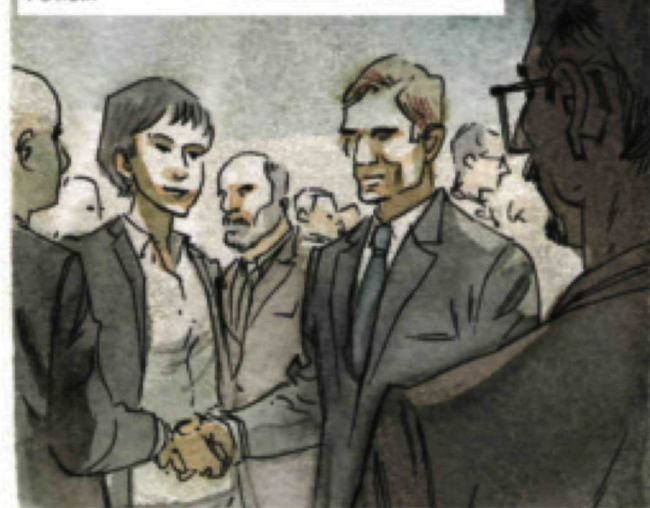
MONDAY, 4:15 P.M.
REAGAN NATIONAL AIRPORT,
WASHINGTON, D.C.



MONDAY, 4:30 P.M. NAVAL
ACADEMY, ANNAPOLIS, MD.



KRONE ATTENDED A RECEPTION FOR THE U.S. NAVAL ACADEMY'S 2012 HISTORY CONFERENCE ON CYBER POWER.



TUESDAY, 7 A.M.



TUESDAY, 10 A.M. BOEING OFFICES,
ARLINGTON, VA.

KRONE JOINED SEVERAL HUMAN RESOURCES
TEAM MEMBERS TO TALK ABOUT PEOPLE
DEVELOPMENT AND SKILLS IMPROVEMENT.



TUESDAY, 1:30 P.M.

THE ASSOCIATION OF THE U.S. ARMY CONFERENCE WAS
COMING UP; KRONE TALKED WITH HIS TEAM ABOUT THE
SCHEDULE OF CUSTOMER MEETINGS AND WHAT BOEING
WILL HAVE ON DISPLAY.

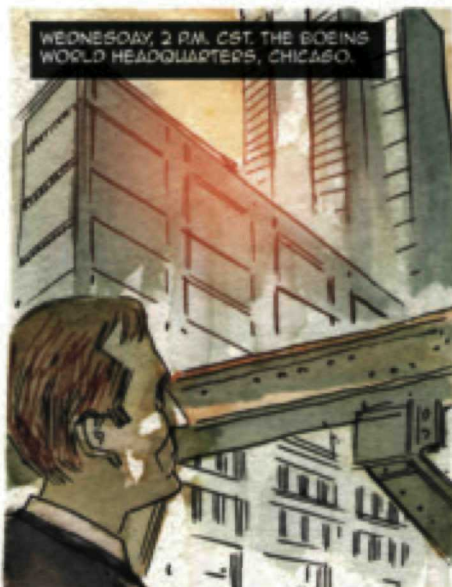


WEDNESDAY, 9:45 A.M. REAGAN NATIONAL
AIRPORT, WASHINGTON, D.C.



WEDNESDAY,
10:45 A.M. CST.
O'HARE
INTERNATIONAL
AIRPORT,
CHICAGO.

WEDNESDAY, 2 P.M. CST. THE BOEING
WORLD HEADQUARTERS, CHICAGO.



KRONE PRESENTED THE STATUS OF HIS BUSINESS UNIT,
NETWORK AND SPACE SYSTEMS, TO BOEING CORPORATE
LEADERSHIP.

WEDNESDAY, 8 P.M. CST. O'HARE
INTERNATIONAL AIRPORT, CHICAGO.



THURSDAY, 12 A.M. CST. EL PASO
INTERNATIONAL AIRPORT, EL PASO,
TEXAS.

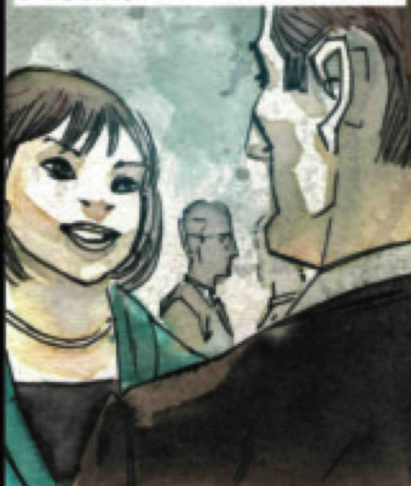


THURSDAY, 8:45 A.M. CST. NEW MEXICO
FARM AND RANCH HERITAGE MUSEUM,
LAS CRUCES, N.M.



BOEING IS DEVELOPING A COMMERCIAL CREW VEHICLE TO REACH THE INTERNATIONAL SPACE
STATION, AND KRONE GAVE A KEYNOTE SPEECH AT THE INTERNATIONAL SYMPOSIUM FOR
PERSONAL AND COMMERCIAL SPACEFLIGHT.

THE GOVERNOR OF NEW MEXICO, SUSANA
MARTINEZ, WAS COMING ON STAGE AS
KRONE LEFT, AND HE THANKED HER FOR
HER SUPPORT OF BOEING'S BUSINESS
IN THE STATE.



THURSDAY, 11:30 P.M. CST. EL PASO
INTERNATIONAL AIRPORT, EL PASO,
TEXAS.



AFTER A SHORT DRIVE FROM LAS
CRUCES, KRONE BOARDED A FLIGHT
TO ATLANTA TO ATTEND THE GEORGIA
TECH ADVISORY BOARD MEETING.

FRIDAY, 8:30 A.M. GEORGIA TECH
CAMPUS, ATLANTA.



KRONE HAS BEEN ON THE ADVISORY
BOARD FOR ABOUT SEVEN YEARS. HE
PARTICIPATES IN THE BOARD TO HELP
IMPROVE TECH FOR CURRENT AND
FUTURE STUDENTS.

FRIDAY, 4:15 P.M. ATLANTA.

KRONE CAUGHT UP WITH FELLOW
ALUMNUS JIM READY TO TALK ABOUT
THE YELLOW JACKET FLYING CLUB.



SATURDAY, 7 A.M.



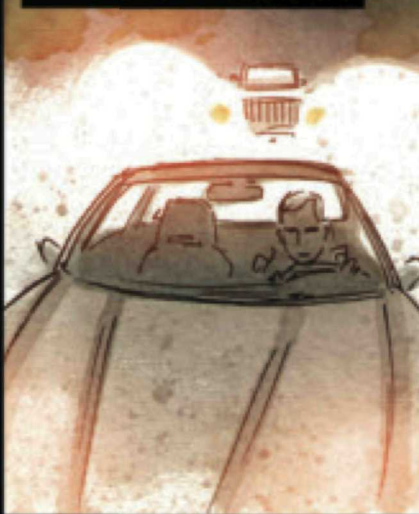
SATURDAY, 3 P.M. BOBBY DODD STADIUM.



SATURDAY, 7 P.M. HARTSFIELD-JACKSON
INTERNATIONAL AIRPORT, ATLANTA.



SATURDAY, 9:15 P.M. ANNAPOLIS, MD.



ON THE DAY OF THE ARMY TEN-MILER,
KRONE WAS UP EARLY.

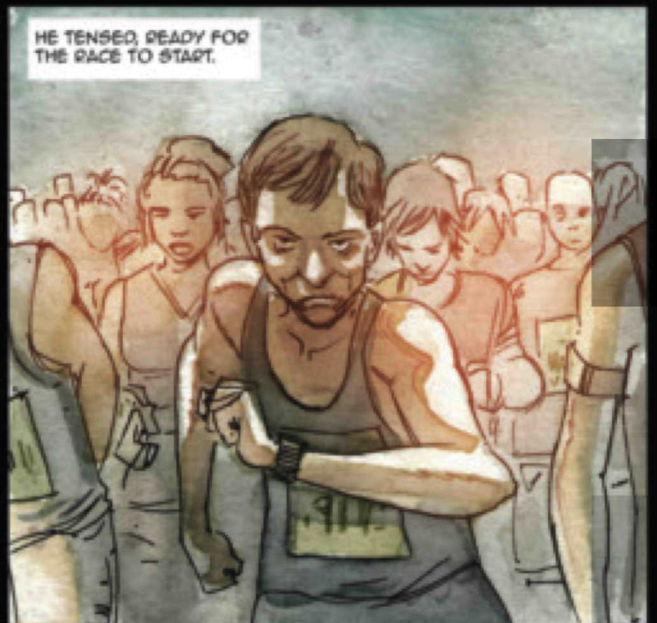


SUNDAY, 7:15 A.M. ARLINGTON, VA.

AT THE RACE SITE, HE JOINED SEVERAL
BOEING EMPLOYEES. BOEING HAD EIGHT
TEAMS PARTICIPATING AND WAS ONE OF
THE PRESENTING SPONSORS.



HE TENSED, READY FOR
THE RACE TO START.



AND HE WAS OFF.

AGAIN.



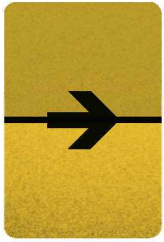


A

Q & A WITH

ROGER

KRONE



DID YOU ALWAYS HAVE AN INTEREST IN AVIATION AND AEROSPACE?

For as long as I can remember, I wanted to design and build and fly airplanes. We would

go over to my grandparents' house for dinner every Sunday night, and my grandfather was bouncing me on his knee when I was 3 or 4, and he said, "What do you want to be when you grow up?" And I said, "I want to be an aerospace engineer."

WHERE DID THAT INTEREST COME FROM?

My dad was in World War II. He was a bombardier on a B-29 and came back to Cincinnati and went to law school at night on the GI Bill. On the weekends he had to study. He threw everyone in the station wagon, and we'd go to the local airport and he would study. My mom and my brothers and I would watch the airplanes do touch-and-goes. Between that and Sputnik and the space race, I just had this love affair with aviation.

You can imagine what my room looked like growing up. I ran a thread from the door to the window and we hung little plastic rocket and airplane models. I had posters of airplanes and jet fighters.

WHAT BROUGHT YOU TO GEORGIA TECH?

I wanted to go to one of the top aerospace engineering programs in the country, and Tech clearly met that requirement. Home was wonderful, but I wanted to get some distance. The valedictorian of the high school class the year before mine went to Georgia Tech, so that's how it got on my radar screen.

WHEN DID YOU BECOME INVOLVED WITH THE YELLOW JACKET FLYING CLUB?

I showed up on campus in 1974 and threw down my footlocker in the dorm and went to the Student Center and joined the flying club, probably before I even registered for classes. I was an officer, involved in leadership all four years.

HOW HAVE YOU STAYED INVOLVED WITH THE CLUB?

A lot of my recent charitable giving has been to modernize the fleet. If you're

training, it's nice to have a couple of airplanes that are almost exactly alike. That way, scheduling is less difficult.

When I was in the club, we had a mixed bag of Cessnas and Grummans and various aircraft. If you went out and your aircraft was down for maintenance, you weren't able to fly.

We've been able to improve the fleet in partnership with student government. We've been able to standardize with [Cessna] 172 trainers. They have a standard paint scheme and a standard interior and standard radios and navigation equipment.

WHERE DID YOUR CAREER START AFTER GRADUATION?

I went to General Dynamics in Fort Worth, Texas, in the advanced design department. I started on the drawing board. They issued me pencils and paper and a 10-foot drawing board and a drawing machine, and I started doing design work. I went from the junior designer to a senior designer.

HOW DID YOU GET INTO MANAGEMENT?

When I got out of Tech, I thought one person could design an airplane. [But] if you're going to design the next jet fighter or commercial airliner, it's about a team. It's as much of a management challenge as it is a technical challenge.

I was much more interested in helping to lead and manage the project than I was in getting a PhD in computational fluid dynamics.

ALONG THE WAY YOU PICKED UP AN MBA AND A CPA LICENSE. HOW DID THOSE COME ABOUT?

I woke up one day and realized I was working with budgets and marketing and finance, and I had no formal training. I went out of my way not to take courses in marketing when I was at Georgia Tech. And suddenly I realized maybe I needed to know more about marketing and product positioning and placement.

I went from program management into marketing. I had to go international to sell aircraft. I spent some time as a CIO. I spent some time in finance.

It was always really interesting work, a chance to contribute something that satisfied my intellectual curiosity. I never

turned down a hard job. My best assignments were the hardest ones.

WHAT'S AN EXAMPLE OF THAT?

In early 2000, I was a CFO for the aircraft division, and the boss came into my office and said, "The general manager in Philadelphia just turned in his resignation. We need someone to go run the helicopter division."

The operation wasn't working very well. We weren't making any money. We had major development programs that were in trouble. But it was a terrific experience. I think you learn more in a turnaround situation than you do with something that's performing well.

WHY IS THAT?

When you're losing money and the customer has issues and you have technical challenges, you come to work really early, really excited about the challenges. You get to build a team and drive change and make a difference.

HOW DID YOU COME INTO YOUR CURRENT ROLE?

In 2006, Boeing reorganized. I knew we were going to end up with three divisions: airplanes, space and networks, and support and services. My new boss called me in and said, "We want you to run the network and space operation." I looked at him and went, "What!?" I spent most of my career on the fly-through-air side. I said, "Wow, OK, this is going to be another learning experience."

The engineering principles are the same, and the disciplines and critical thinking and intellectual curiosity apply across the industry. But to apply that in an area where I hadn't spent 25 years was great, because I came in with some fresh thinking. And I got to learn.

The terrific thing about my career is I've never stopped learning.

WHAT DID YOU LEARN?

The things you have to do if you're going to fly into space are different from what you're going to do if you're flying in the atmosphere. You can't take the space shuttle, land it at the nearest airport, park it and change a battery. There is no gas station in a 200-plus-mile orbit above the Earth.



“THE MORE PROJECTS WE HAVE GOING ON, THE MORE STUFF WE’RE TRYING TO DO, THE BETTER. THIS MEANS RUNNING THE BUSINESS FASTER THAN THE COMPETITION. THIS MEANS CLOSING THE DESIGN CYCLE FASTER THAN THE NEXT PERSON. THIS MEANS HAVING THE NEXT GREAT IDEA.”

WHAT’S YOUR MANAGEMENT PHILOSOPHY?

Tech fueled my desire to understand how things work from a technical standpoint. That has served me really well in my management role. I’ve got a series of reports and graphs to keep tabs on things, but what I’ve done is set up a regular schedule of meetings and reviews. I fly out to places like Houston, where we’ve got the program to design a new commercial capsule for low-earth orbit. And I sit in on a design review with the team along with my staff, and we do a program review. We go through all aspects of what it takes to design a new space capsule. I sit at the end of the table and satisfy my curiosity on the engineering side. And at the same time I think about how it fits into the business, how to allocate resources and create value for our customers and shareholders.

You’ve got to work on something

that matters. For me, I’m passionate about aerospace. You also have to leverage the world around you. This means celebrating the team, not the individual. And it’s important to know who your partners are. The foundation for all of this is personal integrity—to trust and be trusted.

HOW DO YOU FEEL ABOUT THE END OF THE SPACE SHUTTLE ERA?

When people talk about the space shuttle, they think about the orbiter, and that was a Boeing product. The history and the passion for that program runs very deep at Boeing.

There’s always some sadness when you go through a transition, but for us there’s excitement about new development in the human spaceflight program. We have the heavy lift NASA program to support planetary missions, called Space Launch System. We have an opportunity to play in a more commercial space role.

YOU’RE A RUNNER AS WELL, RIGHT?

[A group of Boeing employees] did the Army Ten-Miler, the Air Force Half Marathon and we did the Marine Corps Marathon this year.

WHEN DID YOU START RUNNING?

Seventh grade. I weighed about 90 pounds, and all my friends were playing football, and someone said, “There’s something called cross country.” I had no idea what that was. You just start running. Here I am, 45 years later, and I haven’t stopped.

What’s great about running is you can take a pair of shoes and some gym shorts and a T-shirt, and they don’t take up much room in your luggage. I’ve run in probably 50 countries. When I land, I like to immediately go for a long run. It helps to reset the body clock. If you’ve run 10 miles in the morning, you have no trouble falling asleep at the end of the day.

HOW DID YOU COME TO BE SO INVOLVED WITH GEORGIA TECH AS AN ALUMNUS?

I was among the last classes that graduated from the North Avenue Trade School. We had drownproofing. We had labs on Saturdays. It was, “Look to your right,

look to your left.” It was hard. We built things, we broke things. You were expected to be able to turn a wrench and do a computer simulation.

That fit well with me. The harder the course, the more fun it was. But it was all a means to an end to get out and begin designing airplanes.

For the first five to 10 years, I lost touch with Georgia Tech. I was focused on me and my career. But then the preparation Tech provided me started to pay dividends, and I started to be more successful in my career. I came to realize how valuable Tech was.

I continued to get promoted and have greater responsibility, and I felt this need to contribute back and get back on campus, to reconnect with some of the people who reached out in my four years and taught me lessons I didn’t understand at the time.

It’s about giving my time, coming back to give presentations to the Student Alumni Association or to the aerospace program. And then eventually I had the chance to sit on the Georgia Tech Advisory Board.

WHAT HAS BEEN THE HIGHLIGHT OF THAT EXPERIENCE?

I think GTAB helped to transition [President G. P.] Bud [Peterson] into the Tech community. One of the things he wanted to do was to build a strategic plan and use it as a blueprint for what he wanted to accomplish in his tenure. And we helped with that.

YOU KEEP SO BUSY. DOES THAT FRENETIC LIFESTYLE STEM FROM YOUR PERSONALITY?

I keep tabs on everything. Everybody around me knows it. I walk into the room, and everybody’s heartbeat quickens. The more projects we have going on, the more stuff we’re trying to do, the better. This means running the business faster than the competition. This means closing the design cycle faster than the next person. This means having the next great idea.

HOW DO YOU RELAX ON THE WEEKEND?

I go down in the basement and I get my saw out and I cut up pieces of wood and I nail them together and I build things. I put in a low voltage stereo system in the house and fix the air conditioner and putz around with airplanes. ▲

An aerial photograph of a large shipping yard filled with stacks of colorful intermodal containers. In the background, a city with various buildings and greenery is visible. The title 'MISSION TO PAINT' is overlaid in large white letters. A dashed line with circular endpoints connects the top left of the title to a container in the lower right. Another dashed line with circular endpoints connects the top left of the title to a container in the upper right.

MISSION TO PAINT

By Rachael Maddux



What happens when the United States' top industrial and systems engineering program teams up with one of the world's most crucial trade hubs? **All this** starts making a lot more sense.

AVIA



ON

THE

MAP,

the Republic of Panama

appears as an umbilical arc connecting the southern tip of Central America with the northwestern corner of South America, bordered on its north by the Caribbean Sea and its south by the Pacific Ocean. The country's population of just more than 3.5 million is spread out over an area roughly the size of South Carolina, an isthmus peppered with shipping ports and bisected by the 48-mile-long Panama Canal.



▼
Don Ratliff, Regents professor in the School of Industrial and Systems Engineering and executive director of the Georgia Tech Supply Chain & Logistics Institute

Trade between Latin America and the United States is growing faster than trade between the United States and Asia, and Panama's geographic location and existing resources mean it's poised to become one of the most important trade hubs in the region, if not the world.

At the moment, though, its position is precarious.

Take Panama's famous canal, for example: First dug out by the U.S. Army Corps of Engineers in the early 1900s, the passageway is, in some places, no more than 110 feet wide—too narrow to accommodate massive modern cargo ships. Those vessels' containers are often offloaded in one of Panama's many ports, loaded onto a train, shuttled across the country, then loaded onto another ship waiting at another port on the opposite side. Any snafu along the way can send the supply chain toppling like dominoes.

"Whenever there's any sort of disruption, containers get backed up," says Don Ratliff, Regents professor in the School of Industrial and Systems Engineering and executive director of the Georgia Tech Supply Chain & Logistics Institute. "And when they get backed up, they get delayed, and when they get delayed then you have a big problem because now they miss their ship schedules and they're late getting wherever they go."

An eight-year effort is underway to broaden the passageways, but even when that's done, in 2014, Panama's internal supply chains—the systems of organization, transportation and communication that keep the physical elements of its economy running smoothly—still will be outdated and inefficient, and the country still will lack the academic and applied knowledge base necessary to keep it competitive among the ever-changing international marketplace. That is, unless Ratliff and the industrial and systems engineers of Georgia Tech have something to say about it.

Georgia Tech's H. Milton Stewart School of Industrial & Systems Engineering is the largest of its kind in the United States, boasting nearly 60 tenure-track faculty members, and it has been recognized as having the top undergraduate and graduate program in its field for 23 years. And in 2010, Tech's ISyE program brought its world-class logistics know-how to Panama with the founding of the Georgia Tech Panama Logistics Innovation & Research Center, which aims to bolster the supply chain and logistics systems that will power Panama into the future.

"Whenever there's any sort of disruption, containers get backed up, and when they get backed up, they get delayed, and when they get delayed then you have a big problem because now they miss their ship schedules and they're late getting wherever they go."

The Center also is focused on helping Panama improve its standing with the World Bank, which annually ranks countries in terms of the ease of doing business. For 2012, Panama was ranked at No. 61, but would prefer to be closer to top-ranked Singapore.

It's a tall order, but Gary May, EE 85, dean of Tech's College of Engineering, has equally high confidence. "We've been the number one program in industrial engineering for more than 20 years, and I think the reason why you become number one is because you are providing solutions that solve challenges that are relevant to worldwide issues," he says. "My hope is that we will be able to [meet] this particular challenge and lend our expertise and demonstrate why we have the best industrial engineering minds at Georgia Tech."

WHY PANAMA?



The Georgia Tech Panama Logistics Innovation & Research Center may be the most ambitious of its kind, but it's not the first of Tech's international trade outpost endeavors. In 1999, Tech partnered with the National University of Singapore to launch The Logistics Institute-Asia Pacific to promote research and education in the field of global logistics. Tech



↘
Jaymie Forrest,
Mgt 89, managing
director of the Georgia
Tech Supply Chain &
Logistics Institute

“From a logistics standpoint, Panama is Disneyland.”

has since mostly phased out of operations there, but similar research centers followed in San Jose, Costa Rica and Monterey, Mexico.

Ratliff had wanted to get the ball rolling on a Panama center before the launch of the Costa Rica project, but hadn't established the needed government contacts. In 2009, the Panamanian government changed hands, and plans for the center took off.

Panama City is just a four-hour flight from Atlanta and also is in the Eastern time zone, so there's less jet lag and fewer middle-of-the-night phone calls with team members; plus the local economy accepts U.S. dollars, and many Panamanians speak English. And in terms of logistics, Panama was the perfect combination of prime location and raw potential, its canal and rail system offering relatively easy access between Asia and the eastern United States, Central America and South America.

“It's just naturally a good place for logistics,” Ratliff says. “And [the country] has yet to live up to that potential, so it was very intriguing to figure out why, and what it had to do to improve.”



IN & PANAMA'S TRADE STATS OUT

A look at
Panama's
consistently
growing import
numbers and
the wide variety
of products their
ports export
each year.



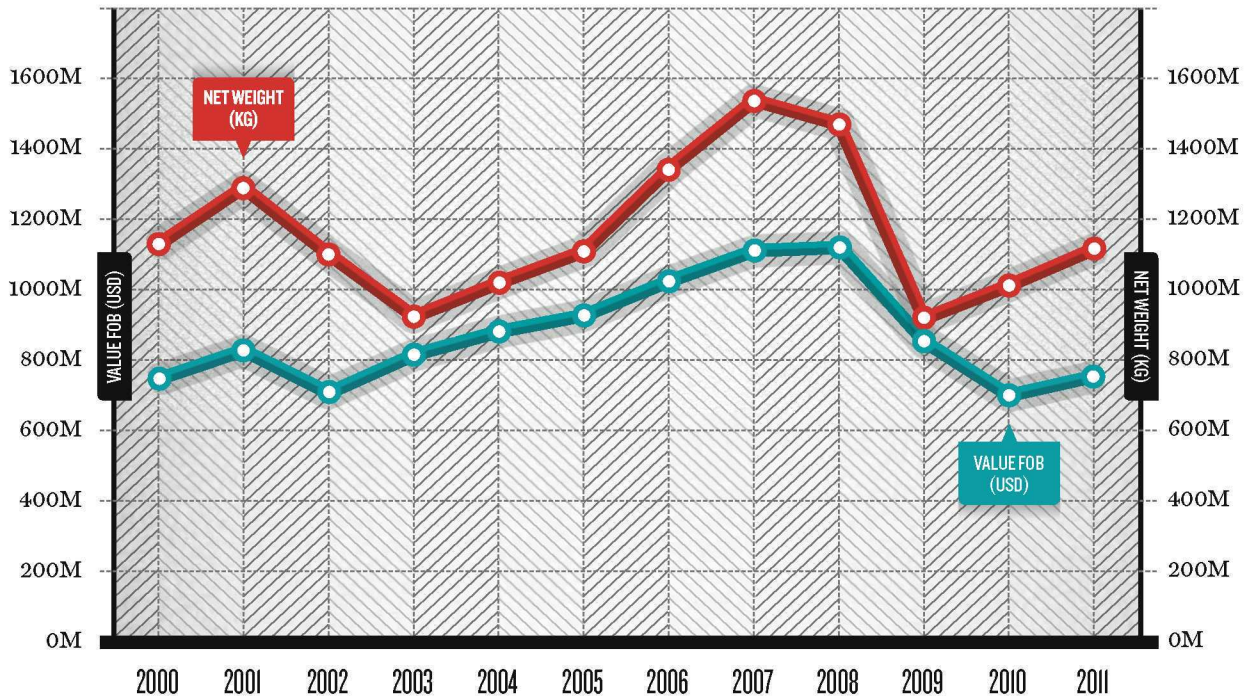
FOB
“free on board” value



CIF
“cost, insurance
and freight” value

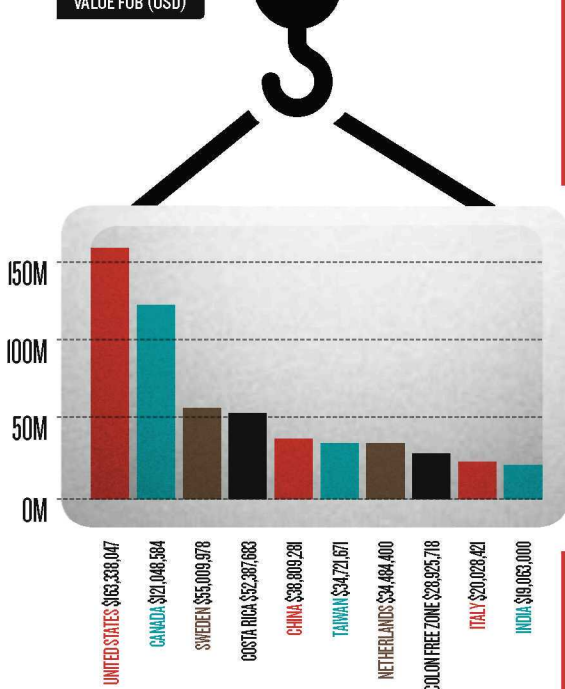
Source: gatechpa/research/portal/

PANAMA EXPORTS ▽ 2011



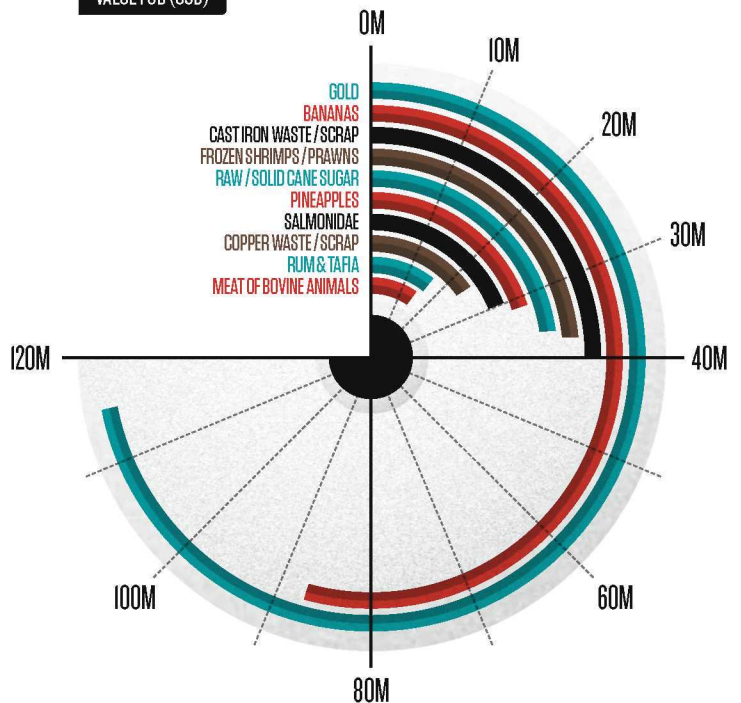
TOP COUNTRIES EXPORTED TO ▽ 2011

VALUE FOB (USD)

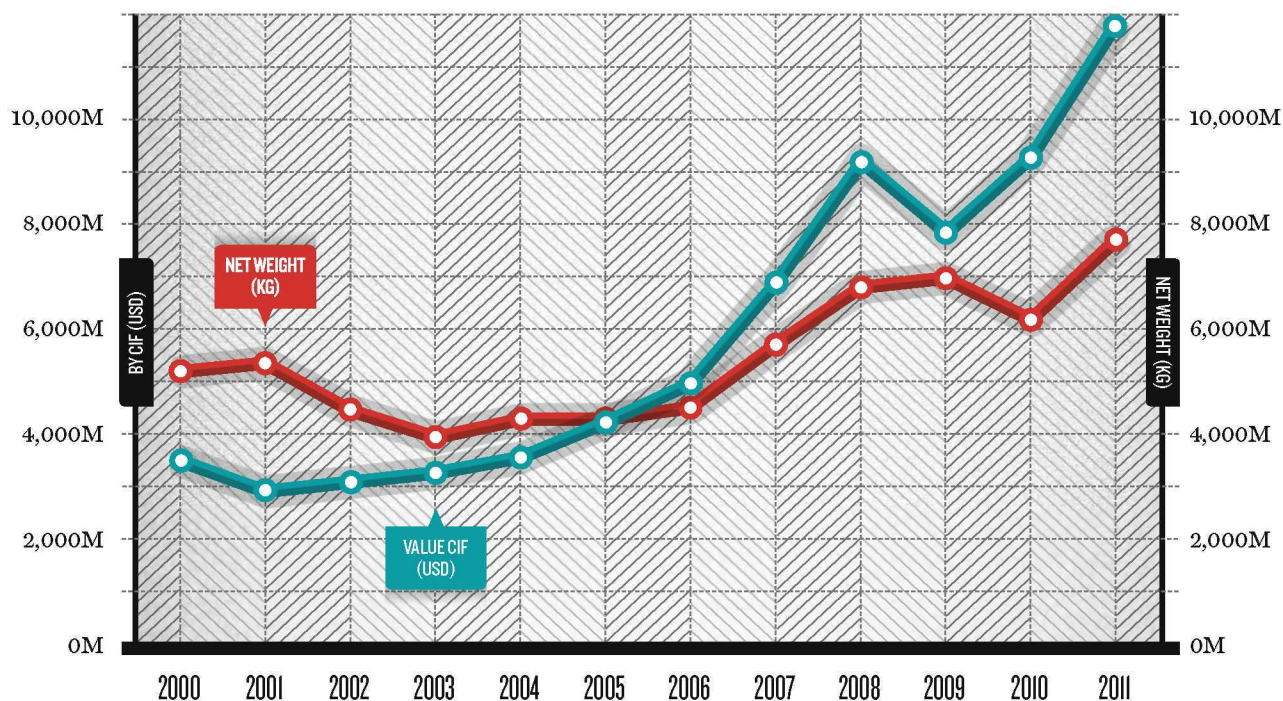


TOP PRODUCTS EXPORTED ▽ 2011

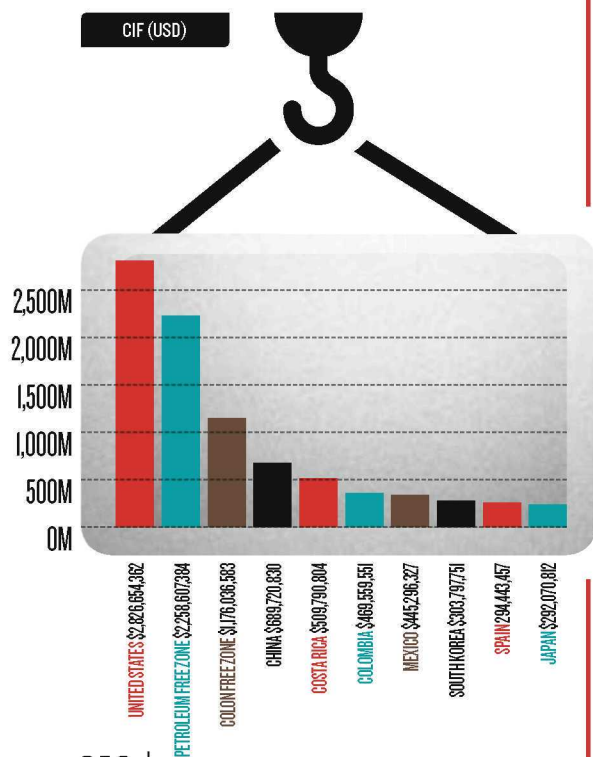
VALUE FOB (USD)



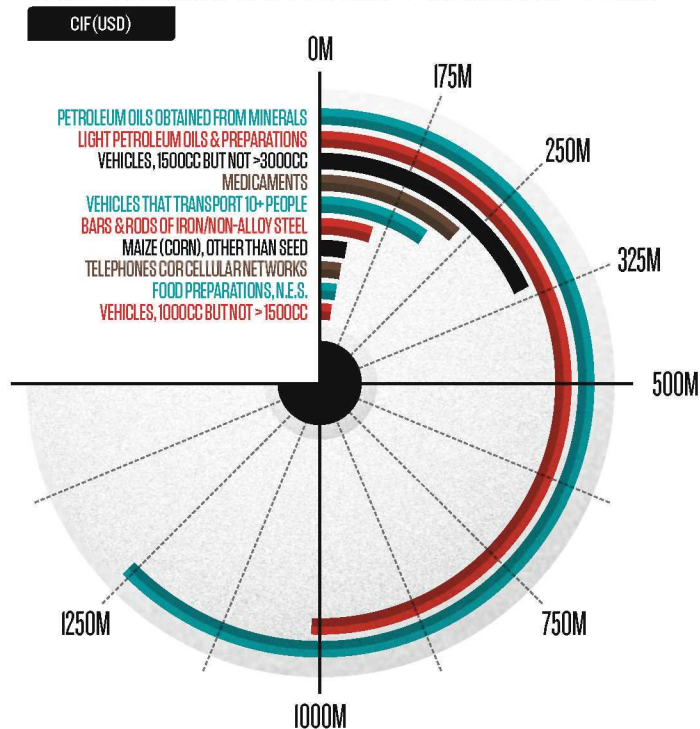
PANAMA IMPORTS ▽ 2011



TOP COUNTRIES IMPORTED FROM ▽ 2011



TOP PRODUCTS IMPORTED ▽ 2011

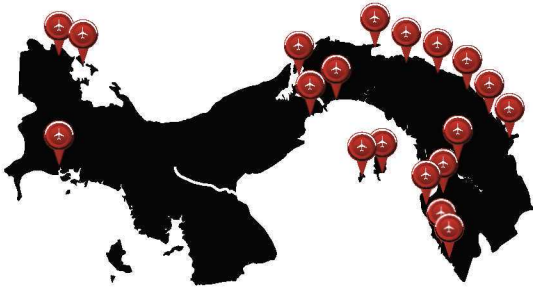




TRADING PLACES

PANAMA'S LOGISTICS ASSETS

AIRPORTS



SEAPORTS



CANAL AND RAILWAY



GEORGIA TECH LOGISTICS INNOVATION & RESEARCH CENTER

Jaymie Forrest, Mgt 89, managing director of the Georgia Tech Supply Chain & Logistics Institute, puts it more bluntly. "From a logistics standpoint," she says of Panama, "it's Disneyland."

WHY LOGISTICS?



According to Gary May, in 2013 the study of supply chain and logistics management has "probably never been more important."

"What that field is trying to do is optimize the method in which materials and goods are transported from place to place to ensure that they go from their manufacturer to the customer in such a way that it's seamless and efficient and low cost and on time," May says. "There can be a significant distance between where materials and supplies exist for a particular product, where it's manufactured and where it's ultimately sold on the marketplace. So to get all those materials and supplies into the right place at the right time is a pretty significant undertaking."

Supply chain and logistics management requires expertise across a variety of fields: trade, transportation, policy, manufacturing. And there are always unknown qualities demanding to be identified; like snowflakes, every supply chain in every country is unique.

"You can't sit in your office in Atlanta and understand how these supply chains work," Ratliff says. "If you want to look at what the role of Singapore is or Panama is in global supply chain networks, you have to actually go there and see what's different about what they actually do—what their functions are, everything about them."

Academically, the field of supply chain and logistics management is concerned with both the micro level (the most efficient way to stack pallets in a warehouse, for example) and macro level (like the complex interactions between a country's ports and railways).

"Supply chains and logistics and trade are very closely interrelated," Ratliff says. "The more efficient [a country's logistics] capability is, the less friction there is in trading between countries, and the less friction there is, the better the product's going to move. If you want to improve your trade, then improving your logistics is one of the essential components of doing that."

Supply chains aren't something the average person usually has to be concerned with, but they become a matter of great public significance when they are poorly organized, mismanaged or otherwise disrupted. Forrest notes that, because of a scarcity of temperature-controlled supply chain elements within Panama, the country is wasting close to 50 percent of the food that it produces. That lack of cold-chain food supply especially

a private company—and the leadership base isn't always as accustomed to thinking about their work in the logistics context.

"I believe we're the only engineering group, maybe in the world, that tries to look at country-level logistics performance and the ideas to improve the ability of private sector companies to have better supply chains," Ratliff says.

"I believe we're the only engineering group, maybe in the world, that tries to look at country-level logistics performance and the ideas to improve the ability of private sector companies to have better supply chains," Ratliff says.

affects the country's more remote populations, including its indigenous tribes. "If [Panama] can improve [its] logistics performance, even if they could just save 20 percent of that food, they could feed the rest of the country," she says.

It's the job of the Center's team of engineers to ask: If there's a disruption within the supply chain, what can be done immediately to lessen the impact? After the disruption, what can be done to get everything back on schedule as quickly as possible? What is the best way to amplify capacity? And what's the best way to work with public officials to determine the priority of a project's solution?

Most supply chain and logistics work is done in relation to private companies, but one of the many unique aspects of Tech's Panama Center is that it's about "trying to figure out how a country can do it better," Ratliff says. The concepts are the same, but the challenges are different. In the public sector, he says, the major players are elected officials, so the turnover rate is higher than within

MEET THE PYRAMID



To maximize Panama's emerging role in the international trade economy, the Panama Logistics Research Center has developed a three-part plan that interlocks and builds upon itself, each element—research, education, competitiveness—integral to the rest. Ratliff thinks of it as a pyramid, with research as the foundation, education the middle rung, and competitiveness the pinnacle.

The research aspect has been underway since Tech first established itself in Panama and began to ask the most basic questions: What is the country's supply chain system like? What are all the elements, the moving parts? What works? What doesn't?



The education component allows Panamanians to become involved with that research, to both directly benefit from it and carry it forward. The Center itself offers two professional certifications, Principles of Supply Chain and Logistics and the Lean Supply Chain series, both three-module programs aimed at quickly developing human capital to support the country's burgeoning logistics needs. And Tech has partnered with local Panamanian universities to offer dual master's degrees through a combination of university coursework in Panama, online coursework with Tech professors, a semester in Atlanta and a capstone project completed back on the ground at the Center. As those students move through the programs, their work generates more research, more data to funnel into the knowledge pool.

As more is learned about the supply chain logistics in Panama, more can be done to improve them. And as more Panamanians graduate from the Tech program, they're better equipped to work toward that improvement themselves.

BOOTS ON THE GROUND

Pablo Achurra, MS SCE 11, is a graduate of the dual master's program. His capstone project on "Panama's ocean containerized connectivity" complemented the Center's research agenda, and he was hired as a research engineer upon the completion of his degree. A year and a half into his stint at the Center, he's collaborating with the Inter-American Development Bank on a project relating to port performance and connectivity in Central America and the Dominican Republic.

"Some projects have expanded from a Panama-only scope to a regional scope. Methodologies and problem-solving techniques developed for Panama are applicable to other countries with similar logistics issues," he says. "This is a win-win situation because it facilitates future improvement of regional logistics performance and even integration."

Yuritza Oliver has been a senior research engineer at the Center for a little more than two years. "At the beginning, in order to comply with our research agenda, we needed to request information in many places and knock on doors, since people did not know that much about the Center," she says. Now, though, as knowledge of the Center's purpose and reputation have spread among those higher-ups, she says, "Sometimes they're even the ones looking for us."

Bridging the gap between the research and competitiveness components of the Center's pyramid is a cabinet of some of Panama's most influential players in the technology and transportation industries. Among them are Jose Barrios Ng, MS EE 71, deputy administrator of the Panama Canal Authority; and Roberto Roy, ME 69, MS

IM 71, secretary of Metro, Panama's countrywide public transportation system. Panama's vice president, Juan Carlos Varela, is also a Tech alumnus (IE 85) and has been supportive of the Center.

The center's research engineers provide analytics and data-derived concepts to the cabinet, whose members are in a position of power to act on those suggestions. "It's the first time that we've been involved with that level of activity," Ratliff says, "where you're not only trying to do the research and the education, but you're trying to help the public sector understand what they need to do."

LOOK TO THE FUTURE

So far, one of the Center's most visible accomplishments has been the development of the Panama Logistics Portal (logistics.gatech.pa), an extensive, open-access repository for the data gathered by researchers. It's open to Panamanian officials, industry leaders, potential trade partners—even just curious internet users who want to gawk at video of cargo ships moving through locks in real time or fiddle around with the seemingly endless scalable maps.

In many ways, though, it's too early to speak of the Center's major successes or predict what its future may bring. Ultimately, it all depends on how Panama's industry leaders choose to utilize the knowledge and the skilled workers the Center produces.

One way to measure the success is a tally of how many other countries call Ratliff and his team to see about installing a center on their own turf. Recently he's heard from industry leaders in Argentina and Chile interested in forging a partnership with the Institution similar to Panama's and Costa Rica's. He's had to shuffle those projects to a wish list, for now, but he recognizes that Tech is in a unique position.

"Most countries want to improve their exports, and poor logistics is a barrier. And so they're very interested in what we do," Ratliff says. "When it comes to logistics and trade, I don't believe there's another university anywhere that has comparable knowledge. If you look at people who do research in trade, they're mostly economists—they're not engineers."

For all its success so far, the Panama center is still an experiment, and one at the mercy of SENACYT, Panama's equivalent of the National Science Foundation, which partly funds the center. It could always pull the plug, leaving Ratliff and his team no choice but to pack it up and apply what they've been able to learn in Panama to their next overseas foray. But the director feels confident about the Center's mission and its future.

"You're going in, and if you're providing value then you stay, and if you're not providing and getting value then you do something else," he says. "But I think we've just sort of scratched the surface." ▲



A close-up, high-angle photograph of a vintage car's front end. The image is dominated by the car's headlight, which has a round, chrome-rimmed lens. Above the headlight, a portion of the car's grille is visible, featuring vertical chrome slats. The car's body is painted a light cream or off-white color. The background is dark and out of focus, suggesting an outdoor setting at night or in a dimly lit area. The overall aesthetic is classic and nostalgic, emphasizing the car's design details.

the Ramblin' Wreck

Under the hood
and around
campus with
a Tech icon.

BY CALVIN KIM | PHOTOGRAPHY BY JOSH MEISTER

062

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VOLUME 88 NO.1 2013



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THE CRIME-FIGHTING CAR KITT and the starship Enterprise don't have much in common. But both served as mechanical mascots for TV shows and took on personalities of their own: Kitt's snarky Britishisms, the Enterprise's near-endless technological tool-chest of solutions. And at a single glance, each vehicle conjures the purpose and meaning of its fictional universe. Out here in the real world, that's exactly what the Ramblin' Wreck does for Georgia Tech.

A 1930 Ford Model A Sport Coupe, the Wreck has been with the school since 1961. Purchased by Dean James Dull for \$1,000 (about \$15,000 in today's dollars) the Wreck represents Tech's technical prowess and dedication to tradition. Needless to say, having a chance to get up close and personal with the Wreck, much less ride along in it before Tech's football win over Duke, was a rare treat.

It all started with an email to Stephen Webber, a fourth-year business major and member of the Ramblin' Reck Club. As this year's Wreck driver, he is responsible for the car's care and feeding. We met on campus the day before the game to chat about the Wreck, and then I watched Webber and his fellow club members wash and clean it in preparation for its performance the following day.

The Wreck is only driven about 500 miles a year, but keeping a 1930 Model A fully operational is no easy feat. The Wreck was designed before computerized ignition, fuel injection and advanced materials, and so maintaining it often proves a learning experience.

Webber says the Wreck likes to be exercised at least a few times a week, and it runs best once the engine is warmed up.







066





068

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Unlike modern cars, the Wreck uses no computer controls or automatic engine monitoring. Aside from the traditional accelerator pedal, brake pedal and steering wheel, the other controls are a slaved hand throttle, manual ignition advance lever, choke control, gas adjusting valve and, of course, the horn.

Mechanically speaking, it's a simple vehicle. Providing locomotive energy to the body-on-frame chassis is a water-cooled, 3.3-liter inline-four, side-valve engine that, on the best of days, could produce 40 hp. (A modern 1.6-liter engine, meanwhile, produces about 140 hp.)

Mated to the engine is a 3-speed manual transmission. Without the aid of synchronizers, the gears grind going into first. Once up to speed though, it's easier to match the speeds with the revs and make the shifts buttery smooth.

Feeding the cast-iron block and head is a tiny up-draft carburetor, its intake manifold mounted on the same side of the engine as the exhaust manifold. In a nod to usability, its distributor and points-based ignition system offers adjustable ignition advance via a steering wheel mounted lever. Undoubtedly, this—just like the fuel mixture valve, which adjusts the ratio of fuel-to-air dispensed into the carburetor; and the manually actuated choke, which reduces the amount of air through the carburetor thereby richening the fuel mixture—were primarily meant to ease engine start and warm-up.

Although seemingly complicated, the car starts and runs smoothly and downright purrs when it's warmed up.

Considering it's about 82 years old, the Wreck is surprisingly stock. Modifications include a modern alternator in place of the original generator, a new horn and a decorative radiator cap that also indicates engine coolant temperature. Otherwise, all modifications are cosmetic, like additional step plates that allow multiple cheerleaders to stand on the reinforced running boards when the Wreck escorts the Georgia Tech football team into the stadium.

Primping before the game is easy, especially when club members help. The spoked wheels and whitewall tires

demand special attention, though, as does the white vinyl interior and non-retractable soft-top. Then there's the endless array of chrome parts that requires elbow grease to make game-ready.

In order to maintain the car, Wreck drivers have to ensure a consistent flow of money to keep the budget healthy. Spark plugs, 600-weight gear oil, 10W-30 engine oil and cleaning supplies don't come cheap. The Wreck earns its keep by making appearances at weddings and special events.

The Wreck driver must be detail-oriented. During the football off-season, the new Wreck driver apprentices with his predecessor; drivers pass down intimate knowledge: all the intricacies of the start

ALTHOUGH SEEMINGLY COMPLICATED, THE CAR STARTS AND RUNS SMOOTHLY, AND DOWNRIGHT PURRS WHEN IT'S WARMED UP.

process, how-to information on repairs, proper presentation.

To see the car in action, I rendezvoused with Webber on game day at the end of fraternity row. I spent a couple of hours with him and the Wreck, touring the campus and seeing how the car held sway over the students and alumni.

Driving the car, especially at slower speeds around campus, is an easy affair. The additional engine controls, lack of power-assisted steering and mechanical drum brakes at all four corners are the shining indicators that you're not in a modern car. The lack of boosted steering necessitates a high-ratio steering box, which means you get an upper-body workout if you make a series of three-point turns. To make even the slightest of turns requires generous steering input. The manual brakes require some

sensitivity; they're mildly grabby. But copious amounts of engine braking ensure you only need to use a dash of brakes.

The suspension system, composed of a beam front axle and solid rear axle, is similar to today's commercial trucks, but cruder. Underneath the relatively lightweight car (about 2,300 pounds) the suspension is stiffly sprung and undamped. Thankfully, the relatively flexible, unboxed chassis, spoked wheels, and tall and skinny tires (roughly 120/105-19) soften the ride.

The fuel tank is located in between the dash and firewall, so the fuel gauge in the dash is actually just a window into the gas tank. How's that for crash safety?

Exterior dimensions are familiar: A wheelbase of 103.5 inches and overall length of 152.7 inches makes the car relatively standard sized. For comparison, a 2012 Ford Fiesta 5-door hatchback sits on a wheelbase of 98 inches and an overall length of 160.1 inches.

The Model A is marginally a four-seater. You'd better be OK with personal-space intrusions in the front seats, and let's not even talk about the rumble seat. Because of the upright seating position, head room is not as good as it could be, and leg room isn't fantastic either.

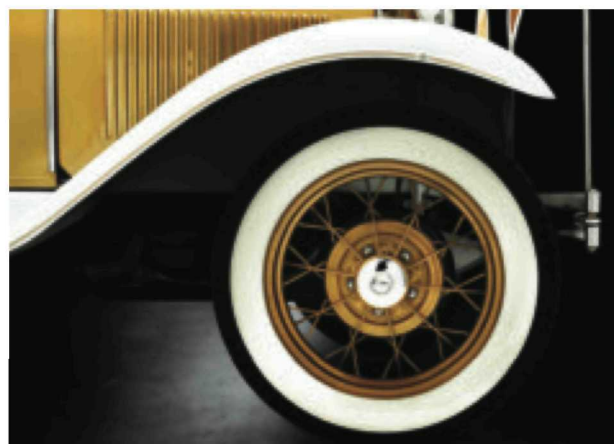
As we made our way through campus honking at tailgating fans and stopping to pose for pictures, I was amazed

at how smooth the car idled. The mercury level never rose on the radiator cap's Boyce Motorman temperature gauge, indicating the engine was content to hum along.

As we made our way toward Freshman Hill, the crowd thickened. One club member leaned into the driver's window, looked at her clipboard and updated Webber on the next mission: a passenger ride-along down the hill and into the stadium.

This time, there would be cheerleaders on the running boards, leading the Yellow Jackets, Buzz and the rest of the cheerleaders onto the field.

After climbing out of the car, I watched the Wreck disappear into the throng, the comfortable chuff-chuffing of its well-maintained engine drowned out by the sound of the band and crowd, students and alumni alike cheering on all that this little 1930 Model A represents. ▲



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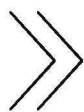


alumni
house



Giddyup! A Georgia Tech contingent went on one of the first rides of the Speedwell Conservation Carousel at the Smithsonian National Zoo in November. The carousel features a yellow jacket, among other creatures. L-R: Wayne Clough, CE 63, MS CE 65, Smithsonian secretary and former Tech president; John Huffman, CE 81, president and CEO of Pepco Energy Services; Michael Messner, CE 76, founder of the Speedwell Foundation; and Dennis Kelly, ME 76, National Zoo director. For more on the Tech connection to the carousel, see page 86.





Georgia Tech Auto Show Revs up for 2013

Rachael Maddux

There's nothing quite like watching a car's odometer flip over from a line of nines to a nice, round row of zeros. This spring, the Georgia Tech Auto Show will get to experience something close to that when it celebrates its 10th anniversary on March 30.



and students, plus locals and out-of-town auto devotees.

"I have been to hundreds of car shows and I can honestly say I have never been to one like this," Lynn says. "It's a cross between an art gallery, a picnic and a corner gas station from the 1950s."

Specimens on display have ranged from the classic (Lynn remembers an especially stunning 1937 Cord) to the sleek and modern. "We are proud to have played host to literally millions of dollars worth of Ferraris," Lynn says before rattling off the names of other exotic cars that have made appearances over the years: a De Tomaso Mangusta, a Maserati Bora, a Mercedes 300SL, a Porsche Carrera GT.

But, he says, organizers are most interested in showcasing the cars designed, engineered or built by Tech graduates.

Each year a panel of judges doles out prizes for excellence in engineering and design, but Lynn downplays the show's competitive aspect: "If you are there primarily to win a trophy, we would probably prefer that you stay home."

"The show is really very simple: People who love cars get together to show them off and share their knowledge and passion," he says. "The show is always a success if we secure the parking lot and people show up." ▲

The Auto Show was founded in 2003 by Sterling Skinner, ME 91, MS ME 95, director of instructional labs for the Woodruff School of Mechanical Engineering. It took some pushing to get the event out of the garage, recalls David Lynn, M ID 06, a former Tech professor of industrial and automotive design, and a show organizer since year one.

"Most people had no idea what a car show was, so we would patiently, enthusiastically explain to them why we wanted to have one on the Tech campus," he says. "I am not sure even half of them

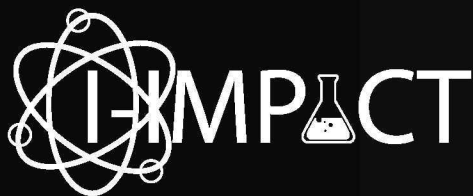
really grasped why we wanted to clear the cars out of a parking lot so we could fill the parking lot with cars."

But the organizers' passion was enough to get the show rolling. And every spring for a decade, remodelers, designers and all stripes of enthusiasts have gathered at Tech to show off their cars and marvel at others' handiwork.

Attendees include Tech faculty, staff

Want to attend the 2013 Georgia Tech Auto Show? For more information visit gatechautoshow.com. For more about the Automotive Design and Technology Affinity Group, visit georgiatechgearheads.ning.com.

INSPIRE
CHANGE
GROW
ENLIGHTEN
ACHIEVE
TEACH



The Initiative to Inspire and Mentor Physics And Chemistry Teachers

KENNESAW STATE UNIVERSITY'S NOYCE II

Do you have a degree in a science, engineering, or technology field? Have you considered teaching middle or high school? With the nationwide shortage of science teachers, prospective teachers with STEM undergraduate degrees are in very high demand.

Kennesaw State University, in partnership with the Georgia Institute of Technology and through an award from the National Science Foundation,

has created the I-IMPACT Noyce II program designed to recruit talented STEM professionals into physics and chemistry teaching careers.

Selected applicants will receive annual \$10,000 stipends during the five year program, totaling \$50,000 per participant. Additional funds are available for graduate tuition, professional development activities, memberships in professional organizations, travel, and supplies for classroom activities.

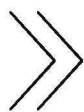
For more information, email iimpact@kennesaw.edu, and to apply, complete the online application at www.GANoyceScholars.org.

EXPLORE CAREER CHANGE



THE ROBERT NOYCE SCHOLARSHIP PROGRAM IS FUNDED BY THE NATIONAL SCIENCE FOUNDATION AND IS A PARTNERSHIP BETWEEN KENNESAW STATE UNIVERSITY AND THE GEORGIA INSTITUTE OF TECHNOLOGY

Kennesaw State University and the Georgia Institute of Technology. University System of Georgia. Equal opportunity/Affirmative Action Institution.



Start Training for the Pi Mile Today



Experienced runners, casual joggers and walkers are all invited to the 41st annual Dean Griffin Pi Mile 5K Road Race, which will start at 8 a.m. April 13 on the Georgia Tech campus.

The event features chip timing, a T-shirt and a post-race party. Want to run but need to get up to speed? Here are beginner and intermediate training plans put together by Evan Cahill, a second-year biomedical engineering major, competitive runner and president of the Runnin' Wreck club.

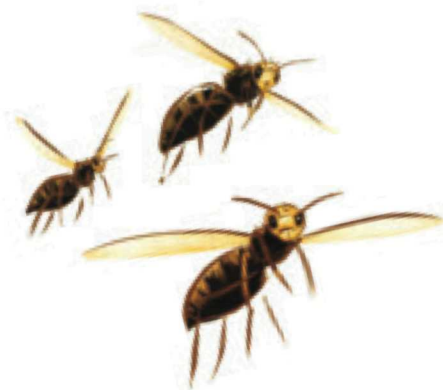
Want to run the Pi Mile? For more information or to register, visit gtalumni.org/pimile or email Nicole Ikeda, events coordinator, at nicole.ikeda@alumni.gatech.edu. More information on the Runnin' Wreck club, including a schedule of group training runs on campus, is available at runninwreck.gtorg.gatech.edu.

Beginner Training Program

WEEK	SUN	MON	TUES	WED	THURS	FRI	SAT
1	OFF	1.5 mile jog	OFF	1.5 mile jog	OFF	1.5 mile jog	25 min. walk/jog
2	OFF	1.5 mile run	OFF	1.5 mile run	OFF	1.5 mile run	30 min. walk/jog
3	OFF	2 mile jog	OFF	2 mile jog	OFF	2 mile jog	35 min. walk/jog
4	OFF	2 mile run	OFF	2 mile run	OFF	2 mile run	40 min. walk/jog
5	OFF	2.5 mile jog	OFF	2.5 mile jog	OFF	2.5 mile jog	45 min. walk/jog
6	OFF	2.5 mile run	OFF	2.5 mile run	OFF	2.5 mile run	50 min. walk/jog
7	OFF	3 mile jog	OFF	3 mile jog	OFF	3 mile jog	3 mile run
8	OFF	3 mile jog	OFF	2 mile run	OFF	OFF	Race!

Intermediate Training Program

WEEK	SUN	MON	TUES	WED	THURS	FRI	SAT
1	OFF	3 mile run	4x400m	3 mile run	OFF	3 mile run	2 mile tempo
2	OFF	3 mile run	5x400m	3 mile run	OFF	3 mile run	2 mile tempo
3	OFF	4 mile run	6x400m	4 mile run	OFF	4 mile run	3 mile tempo
4	OFF	4 mile run	3x800m	4 mile run	OFF	4 mile run	3 mile tempo
5	OFF	5 mile run	4x800m	5 mile run	OFF	5 mile run	4 mile tempo
6	OFF	5 mile run	4x800m	5 mile run	OFF	5 mile run	4 mile tempo
7	OFF	5 mile run	4x400m, 2x800m	6 mile run	OFF	6 mile run	5 mile tempo
8	OFF	3 mile run	4 mile run	3 mile run	OFF	OFF	Race!



FOR BEGINNERS, no running experience is expected and the goal is to simply complete the 5K with little to no walking. “Jog” is a comfortable running pace with walking as needed. “Run” is a comfortable running pace with ideally no walking. “Walk/Jog” is to jog if comfortable, and walking is OK for the entire workout.

FOR INTERMEDIATE RUNNERS, some running experience is expected, and the goal is to complete the 5K in a specified time. Track work includes 400 meter runs and 800 meter runs, which should be run at a pace of 1 minute/mile faster than the 5K goal pace and 30 seconds/mile faster than the 5K goal pace, respectively. For the tempo of each run, the first quarter to a third of the run should be at a comfortable pace, the next third to a half should slowly build to near race pace, and about two thirds or three quarters into the run, the pace should stay near the race pace for two to five minutes. The run should be finished at the initial comfortable pace.

FOR ALL SKILL LEVELS, remember to hydrate by starting to drink more water at least two days before the event. Get plenty of sleep both nights before the race. Eat a well-rounded dinner that includes some carbohydrates the night before, and eat enough breakfast that will give you the energy you need to run—but not enough to irritate your stomach. Warm up and stretch before the race, and don’t forget to cool down after. Most importantly, have fun! ▲

Add Tech Pride to Your Ride

Tech alumni in six states—plus Georgia, of course—can show off their school spirit with official Georgia Tech license plates. The plates are available in Maryland, North Carolina, South Carolina, Tennessee, Texas and Virginia. A percentage of plate sales in South Carolina and Texas goes toward the scholarship funds of Alumni Networks in those states.

Want to get a Georgia Tech plate?

Contact your DMV or email Jane Stoner, senior manager of Alumni Networks, at jane.stoner@alumni.gatech.edu.



Leadership Circle Donors to be Lauded at President's Dinner



The annual President's Dinner will be held June 22 at the Georgia Aquarium in Atlanta.

The black-tie event will feature dinner, remarks from Georgia Tech President G. P. "Bud" Peterson and dancing. It is open by invitation only to members of

Roll Call's Leadership Circle, which includes donors who give \$1,000 or more per year to the annual fund. These donors are instrumental in providing

the resources necessary to continue Georgia Tech's reputation of academic excellence. For more information, visit gtalumni.org/leadershipgiving.

CAREER FAIR ATTENDANCE PAYS OFF

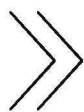
Nathan Davis, Mgt 11, attended last year's Georgia Tech Alumni Career Fair looking for a position in finance, and he was especially interested in working for Home Depot. "The recruiters for Home Depot were [looking for] Operations and IT majors," Davis says. "So initially I thought I was out of luck." But he was wrong. He handed over his resume anyway, and he impressed one of the Home Depot managers with his Tech degree and work experience.

And that wasn't the only interest. Within two days of his trip to the Career Fair, Davis had six interviews lined up; four of those led to second interviews, and in the end he wound up with four job offers. He took the one from Home Depot, where he's now a senior financial analyst. "I'd be happy to stay here for the rest of my career!" he enthuses.

For 30 years the Career Fair has been making these kinds of success stories possible. The 2013 fair will be held March 12 at the Cobb Galleria Centre in Atlanta. More than 100 employers are slated to be in attendance, all eager to recruit the best and brightest Tech alumni. ▲



Want to learn more about the 2013 Career Fair? To register as an attendee or an employer, email caroline.player@alumni.gatech.edu or visit gtalumni.org/careerfair.



The Alumni Travel program takes Yellow Jackets to exciting locales around the globe.

'Great Journey' Lives Up to Its Name

Van Jensen

Here follows a comprehensive list of the modes of transport used during the Alumni Travel program's Great Journey Through Europe, June 27-July 7, 2012.

➔ An airplane—a massive airliner with, thankfully, plenty of legroom—cruising overnight from Atlanta to Zurich, Switzerland.

➔ A motor coach, humming through Switzerland's pastoral northern cantons, rolling hills dotted with livestock.

➔ Our feet, stepping through the narrow, anarchic streets of Lucerne, its cobalt lake reflecting 16th century architecture, the towering Alps and a cerulean sky above all.

➔ A gondola, pulling us atop scenic Mount Pilatus, a mountain famed for two myths: that a dragon resides near its peak, and that Pontius Pilate is buried there.

➔ A cogwheel train, the steepest in the world, clanking down from Pilatus through fragrant mountain grazing land and clutches of wildflowers.

➔ A boat, gliding over Lake Lucerne, churning up a breeze to offer a welcome reprieve from the summer's warmth.

➔ The Glacier Express railway, chugging through the Alps, disappearing into tunnels, reappearing into valleys, summits clawing at the cottony clouds far above.

➔ Another cogwheel train, clanking up from Zermatt toward Gornergrat, best known for its views of the Matterhorn, but this day known for its views of soup-thick clouds and nothing more.

➔ Our feet, sprinting out into the city center, carrying us to where we finally caught



Europe

TRIP ITINERARY

1. **LUCERNE, SWITZERLAND:**
City tour and venture to Mount Pilatus
2. **ZERMATT, SWITZERLAND:**
Viewing of the Matterhorn
3. **GRUYERE, SWITZERLAND:** City tour
4. **BASEL, SWITZERLAND:**
Embark on MS Amadeus river cruise
5. **STRASBOURG, FRANCE:** City tour
6. **HEIDELBERG, GERMANY:** City tour
7. **RUDESHEIM, GERMANY:** Winery tour
8. **COLOGNE, GERMANY:** City tour
9. **AMSTERDAM, NETHERLANDS:**
Departure and optional trip extension

a glimpse of the Matterhorn, which shone blindingly in the morning sun.

➔ Another motor coach, humming through Montreux (the lake front!), Gruyere (the cheese!) and Basel.

➔ The MS Amadeus Princess river cruise ship, powering gracefully along



the Rhine River, affording us a luxurious vantage point to admire the clusters of ancient castles.

➔ Our feet, climbing hundreds of steps to the top of the famed gothic cathedral in Strasbourg, France, lifting us up to the gargoyles' perch, affording us an unbroken view of the city.

➔ A coach, carrying us to Heidelberg, Germany and the Heidelberg Castle, home to tales of court intrigue.

➔ Our feet, striding through Cologne, seeking out the region's famed liquids: the world's oldest perfume and the world's best Kolsch beer.

➔ A plane, soaring east to west, from our great journey to home. ▲

Want to travel with fellow Ramblin' Wrecks? More information is available at gtalumni.org/travel, or call Martin Ludwig, director of Alumni Travel, at (404) 894-0758.



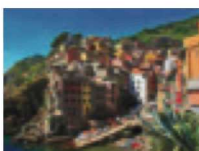
If you're itching to travel the world, who better to globe-hop with than your fellow Ramblin' Wrecks? The Georgia Tech Alumni Association has a bevy of trips planned for 2013 that will take you from Alaska's majestic wilderness to a cruise through the Italian and French Riviera. For more information or to register for any of these trips, visit gtalumni.org/travel.



Alaskan Discovery Cruise, Aug. 6-14 Deluxe suites, impeccable service and world-class cuisine are only part of the attraction of this cruise. During shore excursions, travelers will discover unspoiled wilderness,

friendly locals and native culture. Stops include Ketchikan, Juneau, Skagway and Sitka.

The Rivas, Aug. 22-Sept. 1 Enjoy the excitement and splendor of the French and Italian Riviera from the comfort of a state-of-the-art, 72-passenger mega yacht. Stops include St. Tropez, Corsica, Elba, Portovenere, Cinque Terre, Côte d'Azur and, of course, Monte Carlo.



Taste of Europe, Aug. 26-Sept. 6 Relax as the elegant, intimate Oceania Cruises Nautica takes you to fabulous ports of call in France, Spain and Portugal. Experience Saint-Malo, Pont-Aven,

Bordeaux, Bilbao, La Coruña, Oporto, Lisbon and Seville—places that define the flavor of Europe, past and present.

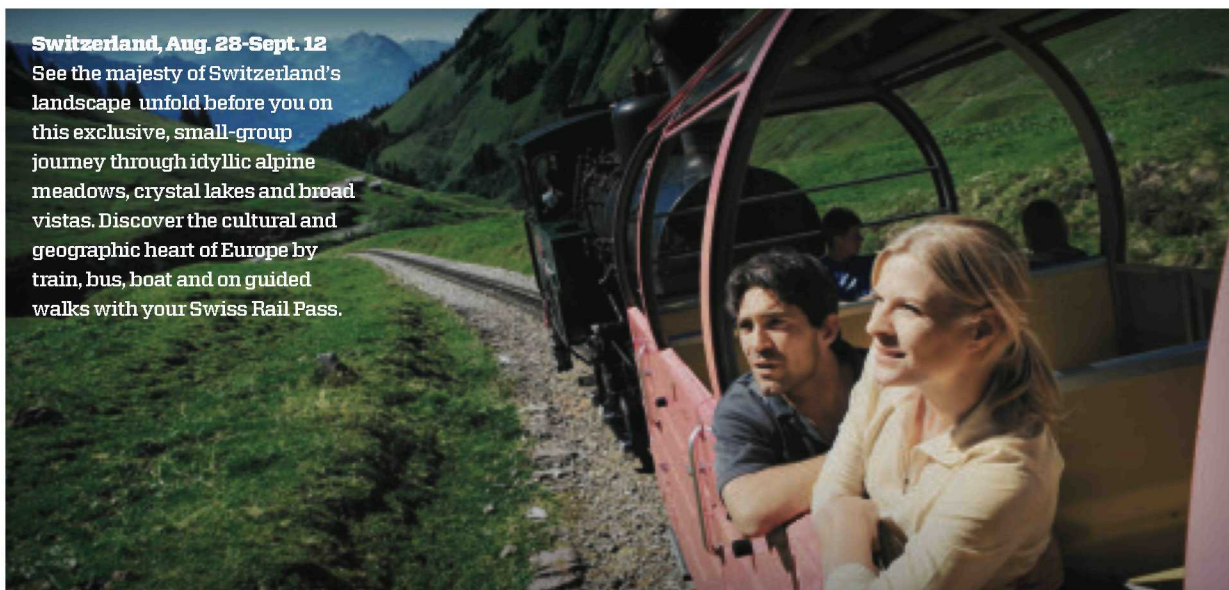
St. Petersburg, Russia, Sept. 8-16

Witness the vision of Peter the Great as you discover opulent, extravagantly colorful and irresistible St. Petersburg, a masterpiece of design and ingenuity, a vibrant tapestry framed by sparkling water.



Sorrento and the Amalfi Coast, Sept. 11-19

Discover the natural wonders and wealth of antiquities in the stunning region of Campania, home to writers, artists and emperors for more than 2,000 years. Stroll through sweet lemon groves and experience the beauty of Sorrento and the towns along the Amalfi Coast.

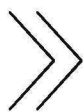


Switzerland, Aug. 28-Sept. 12

See the majesty of Switzerland's landscape unfold before you on this exclusive, small-group journey through idyllic alpine meadows, crystal lakes and broad vistas. Discover the cultural and geographic heart of Europe by train, bus, boat and on guided walks with your Swiss Rail Pass.



ramblin' roll



*Honoring those who give
back to Tech and their
communities.*

Gold & White Honors Gala Celebrates Tech's Best

At the Gold & White Honors Gala on Feb. 21, 2013, the Alumni Association will recognize outstanding contributions made by members of the Georgia Tech community. The honorees are an inspiration to the next generation of alumni leaders. This year, for the first time, the event will be open to the public with proceeds benefiting student programming. Here are the 2013 honorees and the awards they will receive.

THE JOSEPH MAYO PETTIT DISTINGUISHED SERVICE AWARD IS THE HIGHEST AWARD GIVEN BY THE ALUMNI ASSOCIATION. IT HONORS ALUMNI WHO HAVE PROVIDED OUTSTANDING SUPPORT TO THE INSTITUTE AND ALUMNI ASSOCIATION, AND WHO HAVE PROVIDED LEADERSHIP IN THEIR CHOSEN PROFESSIONS AND LOCAL COMMUNITIES.



John F. Brock III, ChE 70, MS ChE 71, is the chairman and CEO of Coca-Cola Enterprises. He is the chair of the Georgia Tech Campaign Steering Committee, a trustee of the Georgia Tech Foundation, a member of the Alexander-Tharpe Fund Board and a past member of the Georgia Tech Advisory Board. In 1996, he was named a College of Engineering Distinguished Alumnus.

John B. Carter Jr., IE 69, is the president and COO of the Georgia Tech Foundation. He is a trustee of the Athletic Association Board, a trustee of the John and Mary Franklin Foundation and a past executive director of the Alumni Association.



Ernest Scheller Jr., IM 52, is the chairman emeritus of Silberline Manufacturing. He is the honorary co-chair of the Georgia Tech Campaign Steering Committee and an emeritus member of the College of Business Advisory Board. In 2004, he was named a College of Management Distinguished Alumnus. Scheller's \$50 million gift to Tech resulted in the renaming of the Ernest Scheller Jr. College of Business.

J. Leland Strange, IM 65, is the chairman, president and CEO of Intelligent Systems Corporation. He is a board member and past chair of the Georgia Tech Research Corporation,



a trustee emeritus of the Georgia Tech Foundation, a past member of the College of Business Advisory Board, the Alexander-Tharpe Fund Board and Alumni Association Board. He has been inducted into the College of Business Hall of Fame and the Georgia Tech Hall of Fame.

THE DEAN GRIFFIN COMMUNITY SERVICE AWARD RECOGNIZES ALUMNI WHO HAVE PERFORMED EXEMPLARY COMMUNITY SERVICE.



Marc A. Corsini, IM 80, is the president of Corsini Consulting Group. He is a past trustee of the Alumni Association, past president of the Birmingham, Ala., Georgia Tech Network and past member of the Roll Call Class Steering Committee. In the wake of the tornadoes that devastated Birmingham in 2011, Corsini led a group that cleaned up debris and rebuilt destroyed homes.

THE OUTSTANDING YOUNG ALUMNI AWARD HONORS ALUMNI UNDER 40 WHO HAVE DEMONSTRATED OUTSTANDING LEADERSHIP AND SERVICE TO GEORGIA TECH, THE ALUMNI ASSOCIATION, THEIR COMMUNITY AND THEIR PROFESSION.

Whitney Setzer Owen, IA 03, is program manager of health systems management at LMI Government Consulting. She is a past president of the Washington, D.C., Georgia Tech Network, a member of the Trachtenburg School of Public Policy Advisory Board and a volunteer with the Caroline Can! Campaign, which raises scholarship funds for physical therapists.





Michael John Raftery Jr., EE 02, is a civilian engineer for the U.S. Air Force and Navy. He is the student recruitment chair and past president of the Emerald Coast Georgia Tech Network. He has volunteered with Big Brothers Big Sisters and the Catholic Charities Board, and he curates a Facebook group dedicated to Georgia Tech history and memorabilia.

THE HONORARY ALUMNUS AWARD HONORS ANY NON-ALUMNUS WHO HAS DEVOTED HIMSELF OR HERSELF TO THE GREATER GOOD OF GEORGIA TECH.

Mary Rockett Brock

is a partner in Dream Too, the Atlanta Dream basketball team's ownership group. She is a co-chair of the Georgia Tech Campaign Steering Committee. She and her husband, John, have provided significant support for the Institute, including for the John and Mary Brock Football Practice Facility.



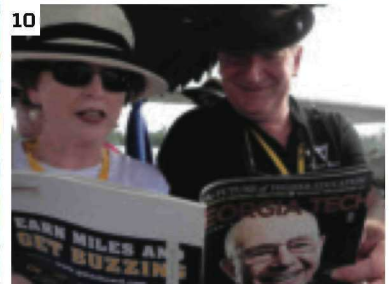
Roberta Scheller is a trustee of the Roberta and Ernest Scheller Jr. Family Foundation and a member of the B'nai Vail Congregation Board of Directors. She and her husband, Ernest, have provided extensive support to education initiatives at Georgia Tech and around the world.

Raymond P. Vito

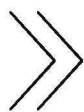
is a professor emeritus at Georgia Tech and retired in May 2012 as the vice provost for graduate and undergraduate studies at the Institute. He is a past recipient of the Wallace H. Coulter Award for Innovation and Entrepreneurship, the Georgia Tech Outstanding Service Award and ANAK's Outstanding Professor Award.



Out & About



1. J.T. Genter, Mgt 07, and his wife, Katie, show off their Tech pride from atop Guadalupe Peak in Texas. **2.** David Haddow, MCP 79, sent this photo of the groom's cake at the wedding of his son, Ladson. Alumni Association Chair and Waffle House CEO Walt Ehmer, IE 89, sent Waffle House T-shirts to the groom, a big fan of the restaurant chain. **3.** Kevin Rogstad, a second-year management major; Daren Pietsch, ME 91; and Nick Wellkamp, IE 09, met up at the University of Oxford, where all three were studying. **4.** Susan Mitchell, ME 85, and her husband, Robert, ICS 84, pose with their racecar, nicknamed "Pumpkin." **5.** The Ramblin' Wreck makes a guest appearance at the Georgia Tech West Lanier Network's annual golf tournament. **6.** Dale Hanson, Mgt 91, poses with his 1963 Corvair Rampside that, he says, one day will be gold with a white stripe. **7.** George Corbe, EE 64, greets guests at the visitors' center in Red Lodge, Mont. **8.** Members of the Band Alumni Affinity Group play at a Georgia Tech volleyball game. **9.** After climbing Mount Kilimanjaro, James Thomson, IE 70, shows his Tech pride. **10.** John Smith, CE 68, and his wife, Sharlene, read the *Alumni Magazine* while cruising Vietnam's Mekong Delta on a sampan boat.



Zulma Toro-Ramos, PhD IE 88, was appointed provost and vice chancellor of academic affairs at the University of Arkansas at Little Rock.

1940s

Richard "Dick" Collier, AE 48, competed in his fifth Huntsman World Senior Games, winning two silver medals in tennis. He has won eight medals in the past four years. He lives in Englewood, Fla.

1970s

Gary Bottoms, Mgt 75, was named the 2012 Marietta Citizen of the Year by the Marietta Area Council of the

Cobb County Chamber of Commerce. He is chair of numerous organizations and is a former member of the Alumni Association Board of Trustees. He is president of The Bottoms Group, a provider of insurance and employee benefits.

Tim Heilig, IE 75, retired from Norfolk Southern Corporation as vice president of mechanical after 41 years. He is now senior vice president of customer solutions for Progress Rail Services, a Caterpillar Company.

Robert Hughes, IM 70, was selected as the president and economic development director for the Morgan County Chamber of Commerce in Madison, Ga.

Edward Mihalak, EE 71, retired from Solers Inc. as director of sensor technologies after 12 years supporting the Defense Advanced Research Projects Agency.

Rod Westmoreland, Mgt 74, was recognized as one of the top 100 wirehouse advisors in America by *REP* magazine. He works for Merrill Lynch.

1980s

Douglas B. Alston, EE 80, MS EE 88, joined Sprint as director of technology strategy and architecture.

Jeff Hubbs, EE 85, was selected as a graduate research assistant in the Tech public policy master's program's Climate and Energy Policy Laboratory.

Mark Konenkamp, ME 83, is celebrating 25 years at Hyundai Motor America. He was the first Georgia Tech graduate to be employed at Hyundai and now serves as senior manager of field engineering. He lives with his wife, Jo Ann, and their two children in Dunwoody, Ga.

Jeff Kuester, EE 89, was voted one of the top 100 attorneys in Georgia for 2012. He is an attorney with Taylor English Duma in Atlanta.

Zulma Toro-Ramos, PhD IE 88, was appointed as provost and vice chancellor of academic affairs at the University of Arkansas at Little Rock. Previously, she was the dean of the College of Engineering at Wichita State University in Kansas.

Craig Vellon, IM 83, was named senior vice president of business development for Class Action Refund LLC in Harrison, NY.



The Buzz at the National Zoo

Visitors to the new Speedwell Conservation Carousel at the Smithsonian National Zoo will see 58 custom-carved animals representing creatures on exhibit at the zoo as well as those Smithsonian scientists are working to save from extinction. Oh, and there's a yellow jacket. The Washington, D.C., Georgia Tech Network sponsored the yellow jacket after hearing about the carousel project in fall 2011 from fellow alumni involved in the construction: Wayne Clough, CE 63, MS CE 65, secretary of the Smithsonian and former pres-

ident of Tech; Dennis Kelly, ME 76, director of the National Zoo; and Michael Messner, CE 76, founder of the Speedwell Foundation. Network leaders who contributed to the fundraising effort include Andrea Finnegan, Mgt 09; Lauren Pinson, MS IA 05; David Nelson, BC 92; Elizabeth Serafine, IA 08; and Anthony Priest, EE 88, MS IE 90. At the grand opening, the first song the carousel played was "Ramblin' Wreck from Georgia Tech." "We are planning to hold a family event in the spring and hope that in the future Ramblin' Wrecks of all ages will discover Buzz on the carousel in our nation's capital," Pinson said.

1990s

Paul A. Bizier, MS EnVE 97, was awarded the 2012 American Society of Civil Engineers Presidential Medal. He is the vice president of water and wastewater at Pape Dawson.

Freda Washington Bredy, MS EE 94, completed an eight-month tour in Kuwait as an IT analyst and Army reservist.

Renee Butler, IE 96, MS OR 99, PhD IE 03, was selected as the first department chair for the systems and mechanical engineering department at Southern Polytechnic State University in Marietta, Ga.

Brian H. Frank, Mgt 90, was named a "Best of Best" financial advisers attending Barron's Winner's Circle Top Advisors Summit. He's the managing director at Morgan Stanley Wealth Management in Atlanta.

Cassandra Johnson, IE 92, was promoted to senior vice president of operations at CredAbility.

Ashley Joseph, IA 94, was named to the board of directors for the Children's Theatre of Charlotte, N.C. She is the owner of two Gymboree franchises and a former principal with McKinsey & Company.

Eric Lausten, HTS 98, is chief of staff for U.S. Congressman Dan Lipinski from Illinois' third district.

Kenneth "Abi" E. Norman, EE 92, retired from the U.S. Air Force on Sept. 30 as a lieutenant colonel. He is a veteran of Operation Iraqi Freedom and served on the U.S. Forces-Iraq joint staff in 2010. He returned to work at Georgia Tech.

William Keats Pierce, Bio 95, has joined Woodbine advertising agency as a senior art director.

Wendi Sturgis, Mgt 90, was named among "13 Powerful Women Running Today's Biggest Startups" by *Business Insider*. She is the executive vice president of sales and services at Yext in New York City. Previously, she was a vice president at Yahoo! and Oracle.

Ashley Turner, IE 95, graduated from the Kelley School of Business at Indiana University with an MBA focused on international business.

Richard Tyler, IE 90, was appointed as director of land management for the United States with Lafarge, a global leader in construction materials. He serves as a consultant for the International Olympic Committee.

2000s

Ryan Kaysen, ME 05, was promoted to senior manager in the operations management consulting practice of Accenture. He specializes in supply chain planning within the consumer goods industry.

Shilvi Gandhi Leinwand, IA 01, was nominated to the board of directors for Prevent Blindness Georgia. She is employed with The Coca-Cola Company in the Global Information Technology group.

Kristin Lundberg, IAML 06, is a U.S. State Department official serving as director of programs for the Bureau of International Information Programs.

Sean Michael Solomon, Econ 09, has joined the law firm of Bradley Arant Boult Cummings LLP in Birmingham, Ala., as a first-year associate.

Brett Whorley, IA 03, was named Naval Flight Officer of the Year (Shore Duty) for the Navy's E-2C

Joy Buolamwini, CS 12, Awarded 2013 Rhodes and Fulbright Scholarships

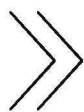
 Kristen Bailey



In 2013, Joy Buolamwini, CS 12, will take her talents to the U.K., where she'll study Global Governance and Diplomacy and African Studies at the University of Oxford as a Rhodes scholar. She's also a 2013 Fulbright scholar and will use her grant to improve access to education in Zambia.

Her past experience developing web and mobile applications for Atlanta's Teach for America schools will inform her efforts with the Zambian Institute for Sustainable Development to create a program that gives students a foundation in information technology, mobile software development and entrepreneurship.

Buolamwini came to Tech as a computer science major and Stamps President's Scholar in 2008; following her May 2012 graduation, she and three other Tech alumnae founded a hair and social media company called Techturized.



Danielle E. Hansen, AE 11, is serving for two years in Noussy, Guinea, in West Africa, as a Peace Corps volunteer.

BLiNQ Blows Up

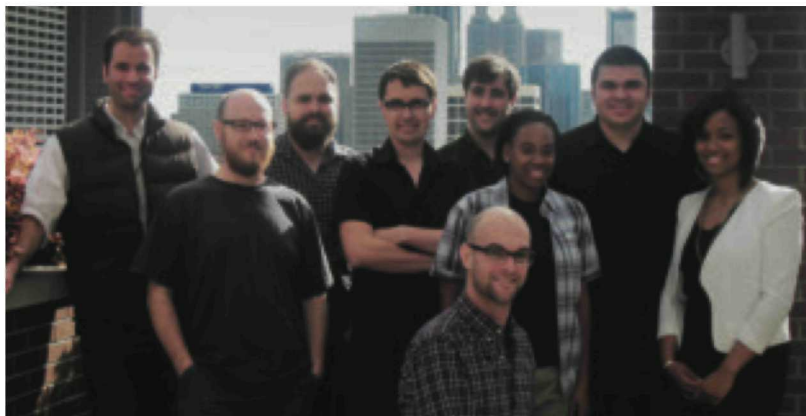
In August 2012, the Gannett Company came calling for BLiNQ Media, a social media engagement company that has managed 600 campaigns for the world's leading brands since its 2008 founding.

The acquisition came a little more than a year after BLiNQ graduated among the 2011 class of Georgia Tech's Advanced Technology Development Center, and BLiNQ maintains its ties with the Institute: The company's tech headquarters are at the ATDC's offices in midtown Atlanta, and a slew of Tech alumni are part of the company's 50-person staff.

Wrecks at BLiNQ include Luis Caballero, MBA 08 (CTO); Charles Lumpkin, Mgt

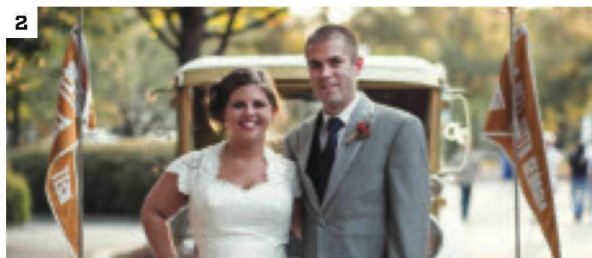
04 (project management and innovation); Josh West, EAS 04 (product strategy director); Adam Rice, MS DM 09 (senior user interface/data visualization engineer); Arun Subramanian, ME 10 (software

engineer); Thomas Barnwell, MS DM 19 (software developer); Nikea Davis, Cls 10 (software developer); John Hillebrand, Mgt 10 (media manager); and Stephanie Smith, Mgt 09 (media manager).



WEDDINGS

William "Randy" Avera, AE 77, and Kelli Nabors on June 25, 2011. Randy works with the FAA. They live in Madison, Ga., with their daughter Maggie Claire Avera.



1. Jonathan Bailey, IE 04, and Kristen Shaw on July 21 in Atlanta. Jonathan is an area manager of network process and quality at AT&T. Kristen is a communications officer at Tech's Institute Communications.

2. Lauren Cresse, Mgt 08, and **Adam Brown, Mgt 09**, on Oct. 6 in Atlanta. Adam works as a project analyst at Avendra. Lauren works as a corporate

recruiter at Intelsat and recently graduated from George Washington University with a master's in organizational sciences.

3. Halley Espy, IA 08, and **John Kenneth Kropa, CE 08**, on Aug. 25 in Sugarhill, Ga. Kenny is a project controls engineer for Heery International. Halley is a presidential management fellow at the FDA and a recent graduate of the University of Georgia School of Law.

Marianna La Vecchia, IE 00, and Sgt. Justin Michael Kinnee on Aug. 25. Marianna is a senior manager at International Logistics.

4. Shara McClendon, CE 04, MS ChE 09, PhD ChE 11, and **Douglas Brooks, MS ECE 08, PhD ECE 12**, in Atlanta on Aug. 12. Shara is a postdoctoral researcher at Joint BioEnergy Institute and Douglas is a research engineer at the Southwest Research Institute.

Homer Lee Newsome, IE 50, and Mae Berry on Sept. 6, 2006. They live at Southern Pines Senior Retirement Center in Thomasville, Ga. Homer served in the Air Force during World War II.



JACOB TZEGAEGBE, CE 11, NAMED MARSHALL SCHOLAR

Jacob Tzegaegbe, CE 11, a second-year graduate student in the School of Civil and Environmental Engineering's Infrastructure Research Group, has received the prestigious Marshall Scholarship. Named for the former U.S. Secretary of State George C. Marshall, the scholarship is awarded to American students pursuing post-secondary degrees in England.

After earning his master's in civil and environmental engineering from Tech this spring, Tzegaegbe will work toward a doctorate in civil engineering at the University College of London.

Hawkeye Community. He is on staff with the commander of the U.S. Naval Forces Central Command in Manama, Bahrain.

2010s

Christa Bagley, Mgt 12, was named to the 2012 class of NCAA.com digital interns at Turner Sports.

Miroslav "Miro" Gregorovic, MS SCE 12, is an operations analyst as a part

of the new two-year, college graduate rotational program at SanDisk in Silicon Valley.

Danielle E. Hansen, AE 11, is serving for two years in Nossy, Guinea, in West Africa, as a Peace Corps volunteer.

Catherine Sanders, STC 12, was named a 2012 NCAA.com digital intern at Turner Sports.

Rachel Shoenthal, IA 12, is a first-year student at Emory University Law School.

Tell us what you've been up to

Have you changed jobs? Earned a degree? Won an award? Gotten hitched? We'd love to share the news with your fellow alumni.

NAME

NEWS TO SHARE

WHEN IT HAPPENED

TECH DEGREE(S)

CLASS YEAR

OCCUPATION

PHONE

EMAIL

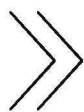
STREET ADDRESS

CITY

STATE

ZIP

Clip the form above and send it to Ramblin' Roll, 190 North Ave. NW, Atlanta, GA, 30313, or email it to ramblinroll@gtalumni.org. If available, please include a high resolution photograph for publication.



Welcomed a future Yellow Jacket into your family? Send a photo and note to ramblinroll@gtalumni.org.

BIRTHS



1. William Britt, CE 03, and Carrie Coker Britt, MBA 05, welcomed son David William on April 27. They live in Marietta, Ga.

2. Terry P. Chang, EE 92, and his wife, Janet, welcomed daughter Kaela Eden on Feb. 1, 2012. Terry is vice president of marketing for VIDA Diagnostics. They live in San Jose, Calif.

3. Michael Wayne Craige, MBA 09, and his wife, Sutandy, welcomed son Michael Kyle on Aug. 28. They live in Marietta, Ga.

4. Wesley Price Dunaway, ME 04, and Rebecca Mansfield Dunaway, IE 02, welcomed daughter Elizabeth Price on Sept. 17. They live in Charlotte, N.C.

5. Jonathan David Eveleth, ME 07, and Katie Pendergrass Eveleth, Mgt 06, welcomed son Charles David on Sept. 6. Jonathan is a project manager for McKenney's, and Katie is an income tax manager for Cheyond in Atlanta. Grandfather: Richard Pendergrass, CE 76, MS SanE 78.

6. Pete Fierro, ChE 00, and Kelly Fierro, Mgt 01, welcomed daughter Mary Kathryn on Aug. 1. Pete is a manager with A.T. Kearney, and Kelly is a senior brand manager with The Coca-Cola Company.

7. Mark Gillespie, MS ME 98, and his wife, Trixy, welcomed twins Megan Elizabeth and Morgan Leigh on Feb. 15, 2012. They join brother Connor, 5, and sister Caroline, 3. Mark is the technical manager for Progress Energy Florida.

8. Sothorn Khel, EE 03, and his wife, Sara, welcomed son Liam Sovan

on Aug. 10. Sothorn is a project manager for M/R Systems. They live in Vinings, Ga.

9. Sarah Beckenhauer Lightner, IE 01, and her husband, Chris, welcomed son Patrick Charles on Oct. 23. He joins sisters Caroline, 5, Catherine, 3, and Victoria, 1. Sarah is a stay-at-home mother. They live in Marietta, Ga.

Elizabeth Lipton, Bio 03, and her husband, Thomas, welcomed son William Hugh on April 5. Elizabeth is an environmental engineer. They live in Cumming, Ga.

10. Andrew Lopez, PM ASE 11, and his wife, Rebecca, welcomed son Gabriel Andrew on Oct. 18. Andrew is a lead systems engineer at Science & Engineering Services. They live in Huntsville, Ala.

11. Ken Lovic, Tech's club sports coordinator and longtime lacrosse coach, and his wife welcomed son Kade Woodfin on Oct. 20.

12. Ethan Maretich, AE 08, and **Laura Maretich, PP 08**, welcomed son Jacob Bernard on July 12. Ethan is a senior engineer at Eaton Aerospace.

13. David Meyer, Mgt 03, and his wife, Leah, welcomed son Jeremiah David on Aug. 25. David is the vice president of finance with Coffee Break Service. They live in Clarkston, Mich. Grandfather: Harold Meyer, IM 75.

14. Lindsay Bramblett Moore, Mgt 06, and **Stephen W. Moore, CE 05**, welcomed son Stephen Garrett on Aug. 15. Lindsay works for

Bank of America Merrill Lynch in Atlanta, and Stephen owns PRESS Delivery Dry Cleaning. Grandfathers: Dennis Bramblett, ME 71; Walter Moore, IE 71.

15. Ivano Newbill, Mgt 94, and his wife, Sheryl, welcomed son Isaiah Mason on Sept. 8. Ivano is a former Atlanta Hawks and Georgia Tech basketball player. They live in Los Angeles.

16. John Robert "Bo" Rankin V, IE 01, and his wife, Becky, welcomed son John Robert "Shea" Rankin VI on Jan. 4, 2012. Bo works for Disney. They live in Orlando. Grandfather: John Robert Rankin IV, IM 76.

17. Marion P. Rivers IV, Text 98, and his wife, Tracey, welcomed daughter Caroline Elizabeth on July 10. Marion is a procurement manager for DiversiTech Corporation. They live in Loganville, Ga.

18. Shonda Gaskins Summers, IA 99, and her husband, Andrew, welcomed daughter Marleigh Jane on Aug. 16. They live in Madison, Ga.

19. Matt Williamson, M CRP 06, and his wife, Becky, welcomed son Ian Pierce on Oct. 2. Matt works as the master planner at the U.S. Army Yuma Proving Ground. They live in southwest Arizona.

20. Nisha Windlass, EE 04, and **Ranit Windlass, CmpE 04, MS ECE 05**, welcomed son Ved on Jan. 8, 2012. Nisha and Ranit are entrepreneurs working in the manufacturing and distribution of oilfield equipment in Houston.



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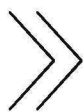
19



20



in memoriam



*Joseph Edmond Mayes Jr.,
EE 47. Army Air Corps,
World War II. Former CEO
and chairman, Southern
Engineering Company.*

1930s

Stanley N. Holditch, IM 38, of Hilton Head Island, S.C., on Feb. 8, 2012. Southern Bell Telephone Co.

1940s

Bruce Benjamin Blackburn Jr., EE 47, of St. Petersburg, Fla., on Nov. 1. Army (1st Lt.). Central Intelligence Agency, Intelligence Medal Of Merit.

Eugene H. Boeke Jr., Arch 49, of Big Canoe, Ga., on Sept. 29. Army Engineers, World War II. Construction supervisor, Piedmont Hospital and Coca Cola International Headquarters. Brother: Richard Boeke, Cls 51.

Donald Waite Braidwood, EE 49, of Colorado Springs, Colo., on Oct. 8. Army, Korea. Engineer, Hewlett Packard.

Robert Sidney Brooks, Text 49, of Charlotte, N.C., on Dec. 15. Army Air Force (aerial gunner), World War II. Allied Chemical Corporation. Ciba Geigy Chemical Company. Harshaw Chemical Company. Crompton and Knowles Company. Founder and president, The Chemical Clearinghouse Inc.

Daren Douglas Brown, IE 48, of Mobile, Ala., on Nov. 29. Air Force, World War II. Engineer. Owner/operator, Mobile Sheet Metal Co. Inc.

Anthony W. Butera, AE 48, of Port Jefferson, N.Y., on Sept. 6. Air Force (POW), World War II. Senior aeronautical engineer, NASA. President, General Service Co.

Clyde William Carver, IM 49, of Atlanta, on Oct. 10. Navy (officer), World War II. Lawyer, Court of Appeals of the State of Georgia, Supreme Court of the State of Georgia and United States Court of Appeals. Manager, Metro Brokers.

Thomas Cooper Chitty Sr., IE 48, of Taintsville, Fla., on Nov. 24. U.S. Naval Academy. Launch manager, Atlas Agena spy program. Master gardener, Seminole County. General Dynamics Convair. Son: Thomas Cooper Chitty Jr., MS ME 81.

Thomas Virgil Clark, Cls 48, of Ringgold, Va., on Aug. 28. Navy, World War II. Technical superintendent, Dan River Inc.

Marshall Melvin Cooksey Jr., IM 48, on Oct. 10. Air Force, World War II.

Senior research engineer, Georgia Tech. Researcher, NASA. Co-founder, Space Instruments Research. Cinematographer, Atlanta Falcons.

Frederick Henry Dendy Jr., Cls 42, of Atlanta, on Aug. 31. Army (Sgt.), World War II. President, Electrical Wholesalers.

Albert J. Faustini, EE 47, of San Luis Obispo, Calif., on Oct. 14. Army, World War II. General Electric. Engineer, Photon Inc., American Optical, Berkeley Scientific Laboratories, Oximetrix Corp. and Abbott Laboratories.

John "Jack" P. Garison Jr., ME 49, of Hot Springs, Ark., on Aug. 24.

Edwin Clark Hill, IE 49, of Atlanta, on Sept. 7. Army (Bronze Star). Regional sales manager, NL Industries.

John "Dyke" VanDyke Wilmerding NASA DESIGNER, YACHTSMAN

John "Dyke" VanDyke Wilmerding, AE 49, of Red Hook, St. Thomas, U.S. Virgin Islands, on Sept. 17. Before attending Tech, he served in the Navy and was honorably discharged with a Purple Heart. After Tech he enlisted in the Marines and worked on Marine Corps aircraft. He began his career with the National Advisory Committee for Aeronautics, a precursor to NASA, where he helped test experimental aircraft and was a member of the team that supported Chuck Yeager in breaking the sound barrier. Among other early contributions to NASA, he worked as part of the Apollo Program, helping design the landing gear of the Apollo Program's lunar excursion module. His career in aviation also included stints at Republic Aviation, Grumman Aerospace and RCA, before he switched gears to charter yachts in the Caribbean and South America.

William H. Holmes, IM 43, of Chapin, S.C., on Sept. 20. Navy (Capt., Presidential Citation), World War II, Korea. Southern Bell Telephone Company. Grandson: Giovanni Mannella, IE 13.

Wesley Frost Johnson, GE 49, of Rome, Ga., on May 29. Georgia Power.

Harold Leonard Lawless, Chem 48, of Aurora, Colo., on Oct. 18. Navy (Air Medal), World War II. Chemical engineer, Shell Chemical, Ball Aerospace, U.S. Army and Sterns Rogers Engineering.

Joseph Edmond Mayes Jr., EE 46, of Cumming, Ga., on Sept. 20. Army Air Corps (2nd Lt.), World War II. Former CEO and chairman of the board, Southern Engineering Company. Georgia Tech Engineering Hall of Fame. Contributions can be made to the College of Engineering.

Murphey Pound Jr., Arch 49, of Columbus, Ga., on Nov. 23. Air Corps, World War II. Architect. Father: Murphey Pound Sr., CE 14.

James Franklin Scott, ME 42, of Jacksonville, Fla., on Oct. 19. Air Force, World War II. Southern Bell.

Charles "Buster" Seacord Jr., AE 42, of Albuquerque, N.M., on Jan. 30, 2011. NACA. Convair. Honeywell.

Howard Boyd Skelton, Cls 46, of Atlanta, on Oct. 12. Army (Combat Infantry Badge), World War II. District sales manager, Mannington Mills.

Robert Hollingshead Small, IE 47, of Gainesville, Ga., on Nov. 19. Navy, World War II. Corporate engineer, Jesse Jewell Poultry Co. Consulting engineer, Lockwood Green, Robert & Co. Real estate agent, Norton Agency.

James A. Smith, EE 48, of Bethel Park, Pa., on Nov. 3. Signal Corps, World War II. Alcoa.

John E. Spencer Sr., EE 43, of Birmingham, Ala., on Nov. 22. Bell South. Army (Capt.), World War II. Son: John E. Spencer Jr., EE 73.

David Sanford Strout, ME 49, of Lakeland, Fla., on Sept. 7. Army, World War II. Mobil. Engineering consultant. Teacher.

Robert Everett Towell, ME 47, of Glen Carbon, Ill., on Dec. 25, 2011.

James Thomas Tucker Jr., EE 40, of Barberton, Ohio, on Sept. 14. Research and development, Babcock and Wilcox.

Thomas Hardwick Wilson, EE 49, of Stuart, Fla., on Sept. 30.

1950s

Ralph "Bob" Cash Andrews Jr., Text 50, of Easley, S.C., on Nov. 6. Army (POW), World War II. Son: Steven Andrews, IM 82.

Timothy J. Browder Jr., ChE 50, of Medford, Ore. Sulphuric acid research. Tim J. Browder Company.

Lawrence Bryant, EE 58, of Ooltewah, Tenn., on Sept. 11. TVA.

Robert Irenus Connell Sr., Arch 53, of Mount Holly, N.C., on Oct. 31. Navy (Radarman 2nd Cls.), World War II. Architectural engineer, Sinclair Refining Company. Owner, Concraft.

James F. Cook Sr., IM 50, of Fairburn, Ga., on Nov. 4. Army Air Corps, World War II. Ford Motor Company. Son: James F. Cook Jr., IM 75.

Leon M. Cromartie Sr., ME 50, of Miccosukee, Fla., on Nov. 7. Army, World War II. Army Corps of Engineers.

Gordon E. Dasher, ME 51, of Greensboro, Ga., on Oct. 26. Engineer and general manager, Union Camp.

Robert Francis DuBose, IM 58, of Marana, Ariz., on Nov. 24. Cooper Industries.

Clinton Eads, IE 53, of Cumming, Ga., on Sept. 16. Executive, Continental Can Co.

Luther "Luke" W. Ellenwood, IE 50, of Greensboro, N.C., on Sept. 21. Safety engineer, Iowa National Mutual Insurance Company. President, American Society of Safety Engineers.

Alfred Wills Ellerbee, ChE 56, of Raleigh, N.C., on Sept. 30. Business executive.

Harry Joseph Elliott, IM 50, of Colbert, Ga., on Nov. 15. Army (two Bronze Stars), World War II. Military defense, aerospace, civil engineering.

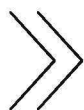
George Watkins Ewell

RADAR RESEARCHER, TECH DEVOTEE

George Watkins Ewell, EE 64, MS EE 67, PhD EE 74, in Cumming, Ga., on Sept. 12. Ewell liked to point out that, beginning with his enrollment as a co-op student in 1959, he was continuously enrolled as a student at Georgia Tech for 18 years. His post-graduate relationship with the Institute stretched over three decades. As a researcher with GTRI, he developed a celebrated career in radar transmission, which heralded the publication of a book, *Radar Transmitters*, and more than 140 co-authored articles and presentations, among other accomplishments. Ewell was a member of several mostly anonymous investigative teams focused on development of stealth technology for aircraft and submarine craft, and was involved in the development of the F-117 Fighter. Brother: Harleigh Ewell, ME 59.



in memoriam



*James Lee St. John, ME 59.
Standard Oil Company. Political
editor, Atlanta Constitution.*

Floyd Steele Faucette, ME 59, of Windermere, Fla., on Oct. 11. Army (1st Lt.). Georgia Tech Football (Sugar Bowl 1956, Gator Bowl 1959).

H. Marshall Fausold Jr., CE 58, MS CE 60, of Pittsburgh, Pa. and Silver Springs, Md., on Nov. 25. Army Corps of Engineers. National Speleological Society. Montour Trail Council.

J. Gordon Farmer

ENGINEER,
BUSINESSMAN,
COLLECTOR

J. Gordon Farmer, ME 43, of Augusta, Ga., on Oct. 19. Farmer came to Tech after service in World War II, during which he was awarded a Presidential Citation for outstanding combat service. In 1946 he founded the Augusta Concrete Block Company, which continues to be one of the Southeast's most successful concrete block companies. An avid collector of antique cars, coins and other items, Farmer was featured, in June 2010, on an episode of the History Channel show *American Pickers*, which became one of the series' most popular installments. In 2011, he was honored with induction into the Georgia Tech Engineering Hall of Fame. Son: Jim Farmer, ME 78.

Floyd "Bud" F. Fowler, IM 55, of Fern Park, Fla., on Jan. 26, 2012.

Carl L. Frick Jr., IM 54, of Ellijay, Ga., on Dec. 9. National Board of Fire Underwriters/Insurance Services Office.

Thomas N. Gibson III, IE 59, of Bogart, Ga., on Nov. 27. Pilot, Air Force (Colonel), Vietnam. Contractor.

David S. Goldstein, AE 50, of Augusta, Ga., on Oct. 18. Navy.

David Ian Gross, ChE 59, of Loveland, Ohio, on Sept. 25. Air Force (Lt. Col.), Southeast Asia. Director, U.S. defense programs. Professor emeritus, University of Dayton.

Joseph W. Hagan, Cls 54, of Tampa, Fla., on Nov. 6. Flanagan-Metcalf.

James Allen Hale, IE 50, of Roswell, Ga., on Sept. 4. Army. Sales manager, Atlanta Tires. Ohio Chemical and Surgical Equipment. Founder, Jim Hale Travel Agency. Contributions may be made to the Georgia Tech Foundation.

Charlie Bob Haynie, ME 50, on Oct. 31. Lockheed Aircraft. General Motors. Oak Ridge National Laboratories.

Charles Edwin Homan Sr., Arch 56, of Gray, Ga., on Nov. 18. Architect.

Hall C. Irby, EE 54, of Atlanta, on Nov. 22. Army. Engineer, Bell South.

Bobby Gene Johnson, IM 59, of Roswell, Ga., on Sept. 12. Armed Forces (Pfc.), Korea. Sales representative, Noland Company. President, John Q. Bullard Associates.

James B. Johnson, CE 58, of Warrenton, Ga., on Oct. 24. Georgia Department of Transportation.

Pat Jones Jr., IM 51, of Charlotte, N.C., on Nov. 17. Navy, World War II. Factory Mutual Insurance.

Ted Levy, Arch 51, MS IM 52, of Atlanta, on Sept. 25. Navy.

Ned Henderson Mayo, Phys 58, of Whitefish, Mont., on Oct. 29. Navy. Professor of physics, Pensacola State College.

Hubert McDonald Jr., CE 52, on Sept. 11. Branch manager, Ralph Whitehead Associates.

William Kenneth Mize Sr., IM 52, of Winnsboro, La., on Nov. 4. Blue Bell International. Wright's Manufacturing Company. Levi Strauss.

Robert Curtis Moore Sr., Text 57, of Gainesville, Ga., on Nov. 16. Army, Korea. Nationwide Insurance Company. Life of Georgia.

John Smith Peagler, IM 51, of Oak Ridge, Tenn., on Oct. 17. Army, World War II. General Electric.

Raymond "Buddy" Pilgrim, IM 59, MS IM 63, of Chickamauga, Ga., on Sept. 17.

Ira Gray Rathbun, Cls 53, of Aransas Pass, Texas, on Nov. 20. Air Force (Staff Sgt.). U.S. Geological Survey.

Andrew Regas, ME 51, of Atlanta, on Oct. 7. Naval Reserves, Air Force. Lockheed. Founding board member, Open Arms Care. Daughter: Iris Regas, MgtSci 77.

John H. Roberts, EE 51, of Melbourne, Fla., on Oct. 16. Air Force, World War II. Engineer, PAFB and Harris Corp.

John R. Rodriguez, Cls 57, of Cocoa Beach, Fla., on Nov. 16. Apollo Launch Program, Boeing.

Helen Kimbrough Zimmerman

PIONEERING CO-ED

Helen Kimbrough Zimmerman, Cls 55, of Valdese, N.C., on Nov. 17. She was a member of the first class of female students at Georgia Tech, and was among the founding members of the Alpha Xi Delta sorority. After Tech, Zimmerman was active

in volunteer service, organizing the Pink Lady Guild at Valdese General Hospital and dedicating hours to Burke United Christian Ministries. She also worked for many years at the Hickory, Ga., Lifeway Christian Bookstore.

William H. Russell, EE 50, of Greensboro, Ga., on Nov. 11. Navy, World War II.

Fenley "Ted" Ryther Jr., CE 55, of Piney Point Village, Texas, on Oct. 12. Managing partner, Dames and Moore Consulting. Executive, Enron Pipeline Operations, Northern Natural Gas Company and Boardwalk Pipeline Company.

William Trotter Shelton Sr., EE 51, of Seattle, on Nov. 20. Electrical engineer.

William Franta Slife, IM 51, of Stockbridge, Ga., on Nov. 26. Owner/manager, Slife Inc. Wholesale Plumbing Supplies. Associate pastor, Calvary and Cascade United Methodist Churches. Director of Youth and Young Adult Ministries, North Georgia Conference of the United Methodist Church. Director of Religious Education, Ft. McPherson, Ga.

James Lee St. John, ME 59, of Atlanta on Nov. 26. U.S. Army. El Paso Electric Company. Standard Oil Company. Colonial Pipeline. Byron Jackson/Flowserve Corporation. Applied Engineering. Political Editor, *Atlanta Constitution*. Member, Atlanta Council on International Relations. Musician, New Horizons Band.

Travis "Pat" Lane Story Jr., IM 52, of Atlanta, on Oct. 30. Navy (Lt.). Senior

vice president, Cofer Brothers.

Freddie R. Teague, IM 58, of Owasso, Okla., on Aug. 29.

Joseph Edward Teahan, IE 53, MS IM 54, of Ormond Beach, Fla., on Sept. 4. Naval Air Corps. General Electric. Founder, InterContinental Resources Inc.

Wilmer "Ray" Thompson, EE 57, of Beaufort, S.C., on Nov. 27. Army, World War II (5th Armor Division, Bronze Star), Korean War (1st Lt., honorable discharge). Union Carbide. Patent holder. Scout master.

Cecil E. Trainer Jr., IM 54, of Spartanburg, S.C., on Oct. 16. Georgia Tech Football (1952 championship team). Army. Southern Wood Piedmont Company. United Wood Treating Company. Brother: Frederick E. Trainer, IM 59.

Byron Vowell Jr., Arch 59, on Nov. 18. Air Force. Architect. Director of architecture and planning, University of Tennessee.

James F. Walden, ME 56, on Nov. 11. Army. Air Conditioning Corporation.

Elmer Nathaniel Watkins Jr., EE 50, of Gainesville, Ga., on Oct. 21. Army, World War II. Electrical engineer, Miami International Airport and Florida Power & Light.

Bobby Anderson Williams, ME 51, on Nov. 7. DuPont.

William Wong Jr., Arch 57, of Hong Kong, on Sept. 14. Architect.

1960s

James Harrison Carter II, Chem 66, PhD Chem 70, of Ava, Mo., on Jan. 12, 2012. Research chemist, Coulter Corporation and Clinical Diagnostic Solutions. Assistant professor, LSU School of Medicine.

Charles V. Gandy Jr., IM 66, MS IM 67, of Doraville, Ga., on Oct. 9. Army Reserves (Lt. Col.), Vietnam. Criminal defense attorney, Cobb County.

Larry Lester Gillian, Text 64, of Newnan, Ga., on Sept. 5. Air Force, Cold War. Monsanto Chemical Company.

Jasper L. Glover, ME 60, of Fort Walton Beach, Fla., on Nov. 21. Army, Korea. Civil servant. Professor, Saint Leo College.

Edward R. Golden, IM 60, of Atlanta, on Sept. 12. Attorney, SunTrust Bank and private practice.

Robert M. Gomez, ME 62, of Palm Coast, Fla., on Sept. 28. Army (Col.). Oklahoma National Guard. Senior Analyst, CIA. Vice president, American Reverse Mortgage Co. Sons: Patrick Gomez, ME 80, MS AE 94, and Richard Gomez, ME 82.

Joseph W. Habeeb Sr., IE 60, of Gautier, Miss., on Oct. 21. Nuclear and mechanical engineer. Small business owner.

James H. Humphreys, Text 60, on Nov. 10. Army (2nd Lt.). Brother: Charles B. Humphreys, Text 60.

Morgan "Mickey" Caldwell Hutto III, IM 67, of Jacksonville Beach, Fla., on Nov. 15. Accountant.

Larry Lee Johnson, EE 66, MS EE 67, of Huntsville, Ala., on Sept. 4. Teledyne



in memoriam

Brown Engineering. Wyle Labs.
Sperry Rand. Son: Mel Johnson, EE
91, MS EE 92.

John Leonard Kisner, IE 60, of
Greenville, S.C., on Dec. 10. IBM. Riegel
Textiles. Founder, software business.
Order of the Palmetto.

Patricia Hudson Malphurs, MS PH 65,
of Metairie, La., on Nov. 20.

Thomas Ernest McDonald, IM 63, of
Brunswick, Ga., on Oct. 18.

**Robert Winthrop Newton, AE 63, MS
AE 63**, of Middleburg, Va., on Aug. 21.
Army (Col., Legion of Merit, Defense
Superior Service Medal, Disting-
uished Flying Cross, Bronze Star, Air
Medal), Vietnam, Korea. Son: Robert
W. Jr., IM 80.

William C. Standifer III, EE 64, of
Atlanta, on Sept. 30. Air Force (Capt.),
Vietnam. Wintec Inc. Son: William C.
Standifer IV, ICS 82.

John H. Stowe, EE 64, of Burke, Va., on
Aug. 4.

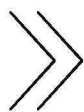
Robert "Doane" Thomas Sr., IM 63, of
Leesburg, Fla., on Sept. 30. Air Force
(Capt., Distinguished Flying Cross),
Vietnam. Delta Airlines.

Edward "Ted" Burton Waters, CE 67, of
Tallahassee, Fla., on Sept. 5. Humble
Oil. General manager, Big Bend Transit.

Dan Hugh Williamson, ME 61, of
Raleigh, N.C., on Oct. 27. Army (Brig.
Gen.), Vietnam. Senior project
manager, M1 Abrams battle tank.

1970s

Paul D. Achey, IM 71, of Atlanta, on Sept.



*William G. Bentley, IM 70, of Raleigh,
N.C., on Nov. 19. Lead programmer,
exploration and heliophysics projects
division, NASA.*

7. Teacher. Son: Wes Achey, IE 01.

William G. Bentley, IM 70,
of Raleigh, N.C., on Nov. 19. Electronic
Data Systems. Lead programmer,
exploration and heliophysics
projects division, NASA Goddard
Space Flight Center.

Alan L. Bridges, Phys 72, MS Phys 74,
of Alpharetta, Ga., on Sept. 30.

Joseph Edward Brown, IM 74, of
Covington, Ga., on Oct. 22. Navy.
Dubois Chemical Company.

C. Richard Gaddy, IE 71, of Evans, Ga.,
on April 28.

Richard B. Gibney Jr., IM 77, of Fairless
Hills, Pa., on Nov. 7. Baltimore Colts.

George H. Rothe, Phys 72, MS GeoS 74,
of Inverness, Fla., on Oct. 24.

Brian Mark Shrieve, EE 79, of Smyrna,
Ga., on Sept. 6. The Coca-Cola
Company.

Philip Ware Smith III, Cls 70, of
Houston, on Oct. 3. Songwriter,
playwright, actor.

Edwin Anthony Wray, IE 71, MS IE 77,
of Athens, Ga., on Aug. 28. Army (Sgt.),
Vietnam. Industrial engineer,
banking and railroad industries.
Business management professor.

1980s

Timothy H. Babb, BC 83, of Atlanta, on
Oct. 22.

Philip Andrew Childrey, IM 86, of
Ormond Beach, Fla., on Oct. 8. Medical
sales and management.

Paul Douglas Ford, IM 87, MS Mgt 89,
of San Francisco, Calif., on Oct. 12.
Vice president, national accounts and
business development, Rocket Dog
Footwear.

Jean Finison León, ChE 80, of Warner
Robins, Ga., on Nov. 21. Fire protection
engineer, Kemper Insurance.
Electronics engineer, Robins Air
Force Base. Electrical engineer,
Mercer Engineering Research Center.

Walter Ridgeway Meeks, Mgt 89, of
Smyrna, Ga., on Nov. 19. Accountant
and certified internal auditor. Father:
James M. Meeks, IM 56. Brother:
Robert Meeks, ME 92.

Anna Marie Salazar-Rivera, CerE 87, of
Tucson, Ariz., on Sept. 27. Engineer,
Syncardia.

1990s

Lisa Kay Ward, MS Mgt 90, on Nov. 4.
Air Force (Capt.).

2000s

**Sthithaprajna "Krishna" Garapaty, EE
06, MS ECE 07**, of Alpharetta, Ga., on
Nov. 07. Pardot.

Christopher Kantus, ME 06, of
Greenville, S.C., on Oct. 24. Fluor Corp.

2010s

Lei Yang, PhD MSE 11, of Owasso, Okla.,
on Nov. 4. Associate engineer, Alter-
native Energy Group, Phillips 66.

Help Elect the Next Alumni Association Board of Trustees

The nominating committee invites you to submit your application for consideration to serve on the Alumni Association Board of Trustees beginning July 1, 2013 and ending June 30, 2016.

Nominees must be Tech alumni and have a significant record of supporting the Institute. Self-nominations will be accepted. The nominating committee will review all submissions in early April and select a slate of candidates that will be published at gtalumni.org.

Go to gtalumni.org/boardoftrustees or fill out the form at right to submit a nomination. The deadline to submit nominations is March 21, 2013.

Include a résumé or brief biographical profile of your nominee and mail all materials to: Trustee Nominations, Attn: Jolie Rosenberg, Georgia Tech Alumni Association, 190 North Ave. NW., Atlanta, GA 30313. Or email to jolie.rosenberg@alumni.gatech.edu.

Online Voting Opens April 2013 Alumni may review and vote on the candidates in late April at gtalumni.org/boardoftrustees. Alumni will be emailed when voting opens. If you do not have a current email address on file, please update your information at gtalumni.org/alumnicommunity.

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CLASS/DEGREE

TELEPHONE NUMBER

HOME ADDRESS

EMAIL ADDRESS

COMPANY AND TITLE

NOMINATED BY

CLASS/DEGREE

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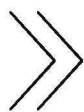
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The future holds great promise, but we must find new ways to build a sustainable financial infrastructure. That's our goal over the short term.



Letter from the Chair

Dear fellow alumni,

What a fantastic year for Georgia Tech and your Alumni Association!

From longstanding traditions like Homecoming and Commencement to newer initiatives including the explosion of the Student Alumni Association into the largest student group in the history of Georgia Tech, fiscal year 2012 was remarkable.

We conducted comprehensive research of our alumni during this fiscal year, and I want to share with you some of what we learned.

The Georgia Tech alumni population is rapidly growing and changing. A full 50 percent of our alumni have graduated since 1994.

Our alumni believe in what we do as an Association to help Georgia Tech and each other to advance. We found out what your values and interests are, and we were thrilled to note that our efforts line up with what you want from us.

We alumni have all been transformed by our Tech experience, and that holds true for students today. That transformation is what makes Georgia Tech a global leader in higher education.

Enhancing the educational experience of our students is a winning strategy for current and future alumni, as well as Georgia Tech. The power of a network of caring alumni improves the Tech experience on so many levels.

Roll Call is powerful. We've been raising funds for the good of Georgia Tech for 65 years now. Those funds have been leveraged in ways that have

transformed Georgia Tech in the face of daunting economic situations.

Take a look at Technology Square or the Campus Recreation Center—those amazing facilities were underwritten by your Roll Call contributions. Thank you!

Our alumni give back at twice the national average, and that's because they know Georgia Tech is a great investment. Your Association does much good on this campus and around the country, and the results are telling.

But our ability to continue to excel is severely challenged. We are in a difficult financial situation because our credit card royalty program has essentially dried up. We have to find new ways to fund the Association for the future.

The interdependent nature of the Association has us focused on the right things. We rely on Georgia Tech and the Georgia Tech Foundation to provide most of our financial support. We give

all of the money we raise from Roll Call to the Foundation for investing and allocating back to the Institute. As such, we raise monies for the educational mission of Tech and not for ourselves.

The future holds great promise, but we must find new ways to build a sustainable financial infrastructure. That's our goal over the short term.

Over the long haul, your Association will continue to provide service and the foundation of progress for Georgia Tech. Thank you for your support.

Sincerely,

C. DEAN ALFORD, EE 76

CHAIR

GEORGIA TECH ALUMNI ASSOCIATION

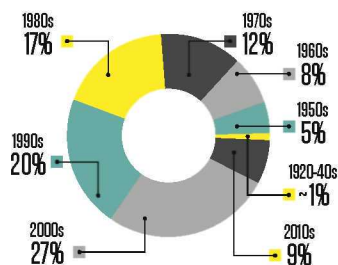
PROGRAM FUNDRAISING

	2012	2011	CHANGE
Roll Call Donors	32,443	31,620	2.6%
Roll Call Dollars	\$8,635,302	\$8,362,475	3.2%

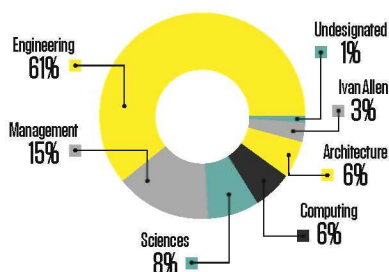
ENGAGEMENT

	2012	2011	CHANGE
Active Engagement	710,418	631,088	12.6%
Supportive Engagement	6,899,901	5,599,494	23.2%
Return for Every \$1 Spent	\$1.722	\$1.684	2.2%

Current Alumni by Graduation Year



Current Alumni by College



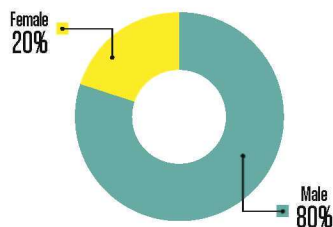
Social Engagement

Twitter followers: **1,170**
 Facebook likes: **18,392**
 LinkedIn connections: **31,037**
 GTAlumni.org visitors: **371,553**
 JacketCommunity visitors: **17,374**
 GTAlumnimag.com visitors: **35,595**
 GTSAA.com visitors: **35,616**
 Mentorjackets.com users: **7,020**
 JacketNet Jobs visitors: **73,566**

Student Engagement

SAA members: **2,742**
 Mentor Jackets pairs: **908**

Current Alumni by Gender



Alumni Philanthropy

Georgia Tech: **20.3%**
 National participation rate: **11.3%**
 SOURCE: CAE 2011

ASSOCIATION FINANCES FISCAL YEAR 2012

REVENUES

	BUDGET	ACTUAL	VARIANCE
GT Foundation	\$ 4,136,000	\$4,136,000	\$0
Georgia Tech	121,597	133,614	12,017
Advertising & Sponsorships	329,000	331,945	2,945
Career Services	205,000	276,790	71,790
Tours	95,000	124,689	29,689
Merchandise Sales (Net of Cost of Sales)	35,780	30,550	(5,230)
Royalties	366,000	500,747	134,747
Events	115,980	161,825	45,845
Other Sources of Revenue	147,500	104,301	(43,199)
Allocation from Cash Reserves	1,000	1,346	346
Total	\$5,552,857	\$5,801,807	\$248,950

EXPENDITURES

	BUDGET	ACTUAL	VARIANCE
Administration	\$ 2,057,909	\$2,308,486	\$250,577
Career Services	238,950	221,703	(17,247)
Communications	625,565	612,770	(12,795)
Alumni Relations & Tours	369,748	417,701	47,953
Roll Call & Business Development	809,780	845,396	35,616
Campus Relations	424,192	396,201	(27,991)
Event Management	939,766	932,922	(6,844)
Marketing Services	418,842	422,695	3,853
Total Expenditures	\$5,884,752	\$6,157,874	\$273,122
Excess (Deficiency) of Revenue Over Expenses	(\$331,895)	(\$356,067)	(\$24,172)

ASSETS

	2012	2011
Cash and Cash Equivalents	\$ 146,696	\$413,556
Accounts Receivable Less Allowance for Doubtful Accounts of \$3000 in 2011 and \$3000 in 2011	147,113	168,162
Prepaid Expenses	21,283	36,770
Inventory	2,734	7,771
Property, Plant and Equipment, Net	173,587	213,974
Antique Ramblin' Wreck	12,500	12,500
Total Assets	\$503,913	\$852,733

LIABILITIES AND NET ASSETS

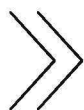
LIABILITIES	2012	2011
Accounts Payable	\$137,799	\$104,769
Accrued Expenses	317,507	343,290
Total Liabilities	\$455,306	\$448,059

UNRESTRICTED NET ASSETS

Expended for Property, Plant & Equipment	\$ 186,087	\$226,474
Available for Operations	(137,480)	178,200
Total Unrestricted Net Assets	\$48,607	\$404,674
Total Liabilities and Net Assets	\$503,913	\$852,733



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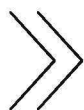
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Georgia Tech Alumnus, BME 1985

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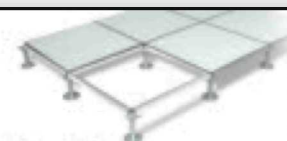
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LET'S DANCE

✉ Rachael Maddux

In Tech's earlier years, especially in the 1920s on through the early 1940s, formal dances were the center around which campus social life turned. And for the young women of Atlanta who were lucky enough to snag an invite, the dance card was a crucial accessory for these beloved revels.

"The ladies would fill the top one and the bottom one with their date, and their

date would sometimes get them to fill [the rest of] their cards up with fraternity brothers or others they trusted to dance with them," says Marilyn Somers, head of living history at the Alumni Association. "It was a process that took them many days before the dance occurred."

The frequency of the dances slowed during World War II, but many of the old cards live on. Somers rescued these

from a flea market a few years back, and they're now on display at the Tech history exhibit at the Alumni House. Waltz on in to visit them anytime. ▲

Have a Tech artifact to share? Send mail to Editor, *Georgia Tech Alumni Magazine*, 190 North Ave. NW, Atlanta, GA 30313, or contact us by email at publications@gtalumni.org.

Sparked to Life

🔧 Doug Chandler, IE 68

A Ramblin' Wreck driver of yesteryear recalls a near misfire.



In my junior year at Tech (1965-66), I was a member of the Ramblin' Reck Club and had responsibility for the Wreck. I will never forget my experience at Knoxville that year for the Tennessee football game.

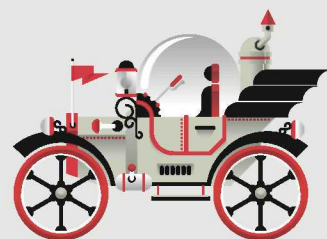
The game was on national television, and it was hot. Close to 100 degrees at game time.

All went well for the pregame, and the traditional Wreck drive onto the field went as planned. At halftime, however, while sitting under the stands waiting for the team to get out of the locker room (televised games always had longer half-time breaks, I learned) the car started getting hot.

The team finally arrived, and we started onto the field. Alas, the car started to misfire and slow down. I thought for sure it was going to die on the field with a national TV audience watching and have to be pushed off.

Fortunately, the old Model A's had a lever on the right side of the steering column that was in effect a spark advance (just like turning the distributor on later model cars). I quickly pushed the lever up as far as it would go, allowing the car to keep running and make it off the field.

To this day, I don't think anyone knows this story other than my kids and close friends, but I will never forget the moment. ▲



Time Machine

5 years ago, in 2008, Georgia Tech President G. Wayne Clough, CE 63, MS CE 65, became secretary of the Smithsonian.



10 years ago, in 2003, Technology Square opened, expanding campus east of Interstate 75/85.



25 years ago, in 1988, Grant Field was renamed Bobby Dodd Stadium.



50 years ago, in 1963, John Young, AE 52, was listed in the *Alumnus* as having a 9-2 chance of being the first man on the moon. That honor went to Neil Armstrong, but Young would stand on the lunar surface nine years later.



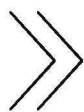
75 years ago, in 1938, Charlie Yates, GS 35, showed off the Walker Cup at the Atlanta Athletic Club after helping the U.S. team win the biennial amateur golf competition.



100 years ago, in 1913, the School of Commerce was founded.



125 years ago, in 1888, Isaac S. Hopkins was named the first president of the Georgia School of Technology.



My interest in machines has only deepened with the study of poetry.



Heart in the Clouds

 Andrew Saulters, AE 05

An engineer-turned-poet contemplates his unlikely path.

When I started at Georgia Tech I never thought I would end up working with words for a living. I liked math and thinking in straight lines, and I was fascinated by machines, especially planes. Surely, such a one as this becomes an aerospace engineer!

But early at Tech I received indication that this was not to be. On my first day, a professor asked about my studies. As though quoting prophecy, I told him I was to study aerospace engineering. In

response, he asked me why.

Nothing about liking math or thinking linearly bubbled to the surface of my mind. Instead, I found myself saying, "I think airplanes are beautiful."

"You might want to think about finding another career," the professor replied.

For years I didn't get what he meant. I studied aerospace engineering anyway. But I'd now like to commend him.

Aerospace engineering is focused on the efficiency, performance,

affordability and ease of manufacture of the final product. This seems obvious now. But when I was young I was fascinated by the slim, sharp edges of the SR-71. I was drawn to its weird, rugged construction of the space shuttle. The diminutive wings of the X-15 compelled my curiosity. I fell for the grand gliders of Otto Lilienthal and Samuel Langley, so birdlike I at first didn't believe they had been *built*.

Instead of seeing purpose behind the designs, I imagined these craft to be the output of a distinct sensibility, a peculiar maker closer to an artist than any practicality-reckoning engineer.

At Tech, I was nudged toward the study of poetry by professor Thomas Lux. After graduate school, I began teaching English and apprenticing with Unicorn Press, a small-press publisher of poetry. Now, when I describe my background, people seem to want me to verify that it's possible to bridge the cosmic divide between the straight-laced work of the engineer and the ethereal efforts of poets.

I'm not going to go there. Or, rather, I have already gone there and discovered my mistake.

Still, my interest in machines has only deepened with the study of poetry. In the valve train of my antique sedan's diesel engine, I observe something like the order of a sonnet, holding compressed within it the promise of motion. In 2010, browsing the National Air and Space Museum's Udvar-Hazy Center, I happened upon a reconstruction of Langley's Aerodrome A suspended from the ceiling. I stopped in silence to admire its stately grace—utterly impractical stately grace, since every full-scale aerodrome launched by Langley failed without qualification. Nonetheless, it spread over me like a cymbal crash.

Even now, when I see an airplane pass overhead, it's something like an idea to wonder at, a stay against the confusion arrayed below. ▲

Andrew Saulters

lives in Greensboro, N.C.

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