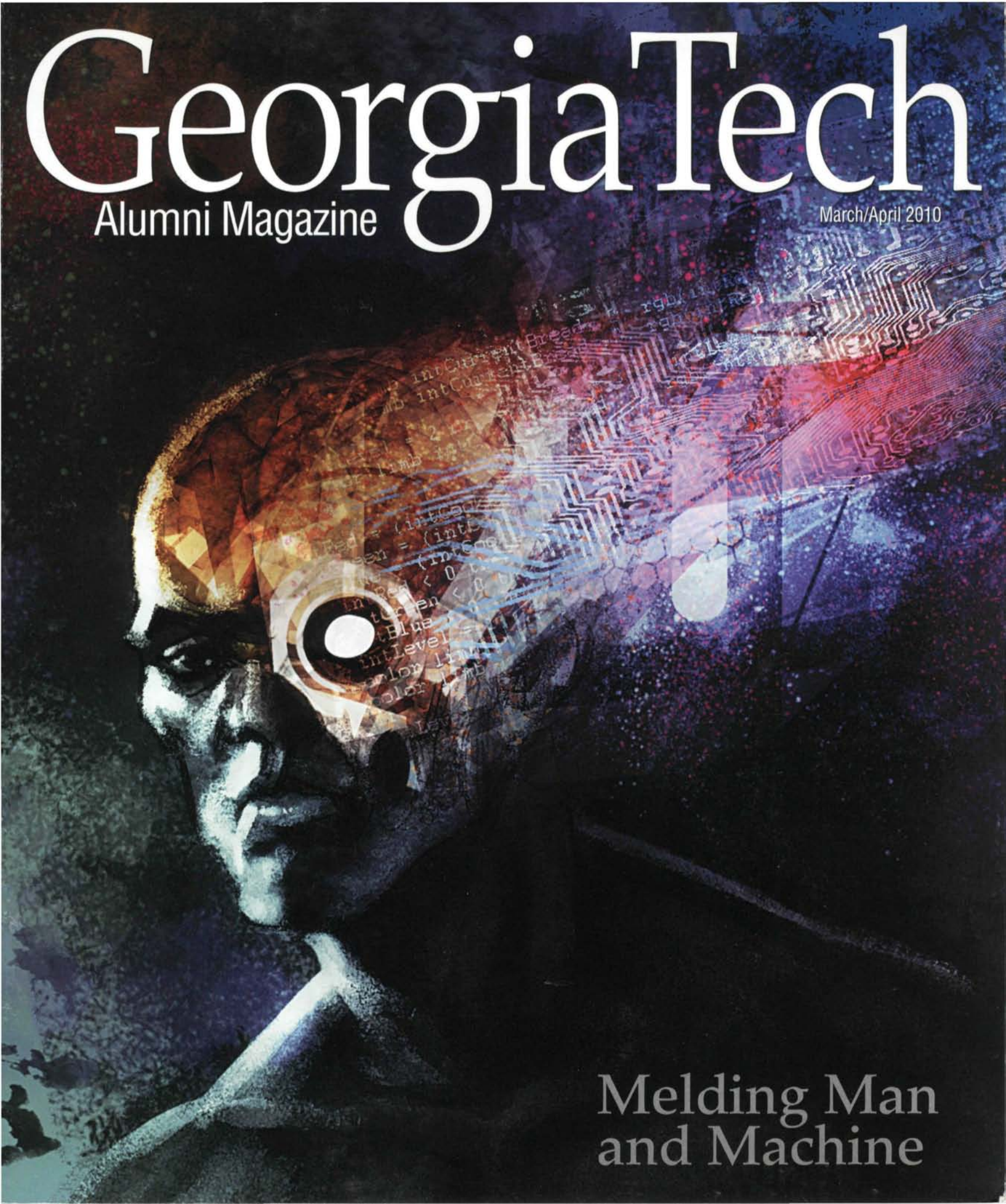


GeorgiaTech

Alumni Magazine

March/April 2010



Melding Man
and Machine

"My Georgia Tech experience taught me that supporting students with international aspirations can make a big difference in their academic goals and future careers."



Carol M. and Carlos Martel, ME 1968

Mineral Bluff, Georgia

- Native of Havana, Cuba; in 1960 immigrated to US; moved to West Point, Georgia where his father worked with a former supplier to his company in Cuba.
- Graduated from West Point High School; met Carol Muldoon in algebra class.
- At Georgia Tech, member of Pan American Club; summer internship in Belgium; GT Chapter president of International Association for the Exchange of Students for Technical Experience (IAESTE).
- Served in US Army; tour of duty in Vietnam.
- Career in international business, economic development, and trade consulting; deputy commissioner for International Trade at the Georgia Department of Economic Development from 1992 to 2005.
- In 1975, married Carol Muldoon, University of Mary Washington, BA '68, Ohio State University, MA '70; studied in Germany and Austria; former vice president - international, Atlanta Chamber of Commerce; 19 years as a director of Global Public Affairs and of Global Labor Relations at The Coca-Cola Company.
- With "Martel's Cognac" and "Sometimes a Lady," retired to their little horse farm and riding trails in the North Georgia mountains.

Gifts to Georgia Tech

- 48 consecutive years of giving to Roll Call.
- Will provisions to establish the Carlos and Carol M. Martel Scholarship Fund for International Studies for students of Hispanic descent to study abroad.

Thoughts on Giving to Tech

"At Georgia Tech, I was fortunate to benefit from a first-rate engineering education and a great life-learning experience, on campus and abroad, thanks to a loan program for Cuban students, scholarships, part-time jobs, and help at great sacrifice from my parents, whose life savings stayed in Cuba.

My Georgia Tech experience taught me that supporting students with international aspirations can make a big difference in their academic goals and future careers. As financial aid made my Georgia Tech education possible, and an internship in Belgium was a major stepping stone for a rewarding international career, Carol and I will provide scholarships to students of Hispanic descent participating in study abroad programs. Our wish is that these students will become leaders in their fields in an increasingly interconnected world."

Carol and Carlos Martel join Founders' Council's 1,040 members who have made bequests or life-income gifts in support of Georgia Tech's future.

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Steven Lustig, MBA 2009;
Senior Manager, Operations, LSI Corporation;
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Massachusetts Institute of Technology, 1993



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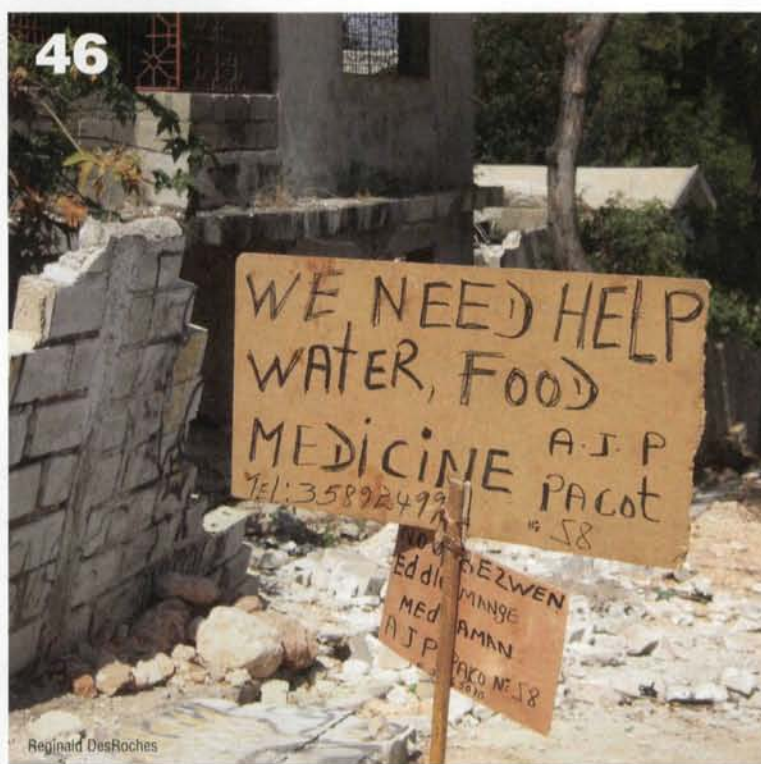
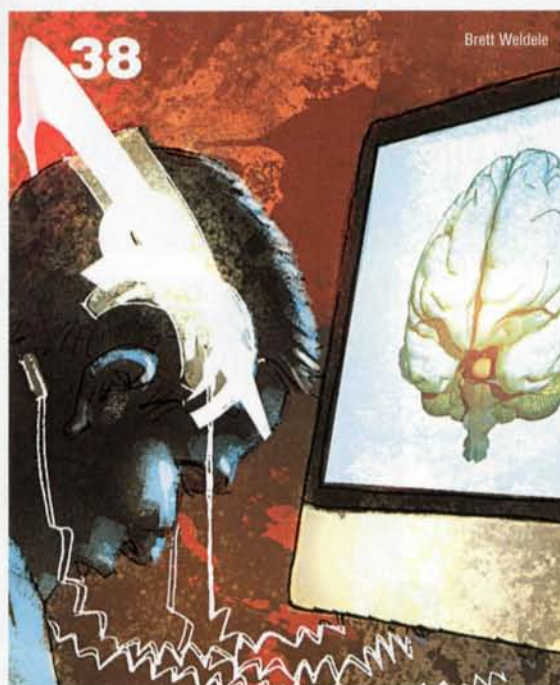
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38 Meeting of the Minds

Researchers are using brain signals to communicate and neurons to control a robotic arm. Cover illustration by Brett Weldele, co-creator of The Surrogates.

46 Humanitarians at Heart

Alumni are making it their business to better the world, including Haiti, where an associate professor traveled to assist in the post-earthquake recovery.

66 General Knowledge

With strong ties to the military, the Institute welcomed Gen. David H. Petraeus to campus for a "conversation" with the Central Command leader.

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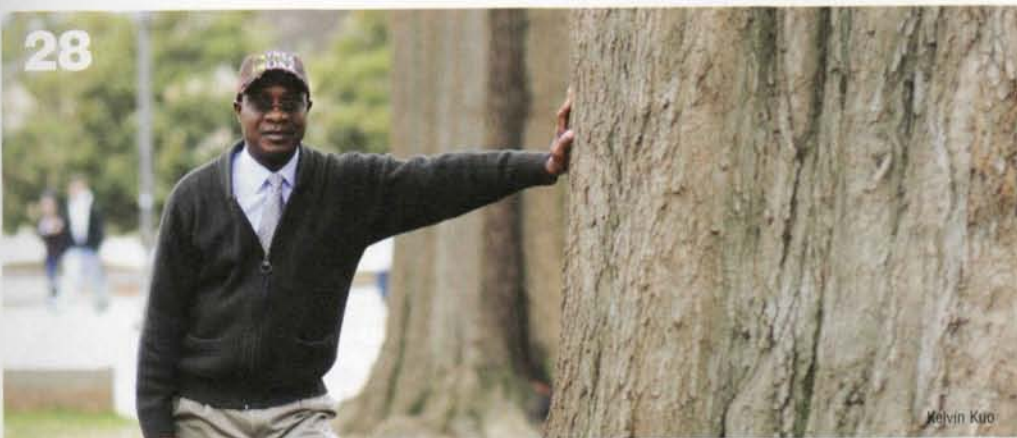


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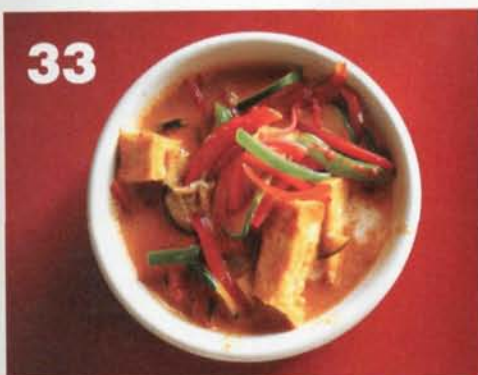
The Official Meeting Facility of the Georgia Tech Alumni Association

28



Kelvin Kuo

33



24



21

34



Kelvin Kuo

10 Letters

14 Alumni House

18 Jackets Required

21 Tech Topics

22 Tech Notes

24 Office Space

28 Ten Questions

30 What's in a Name?

33 Within Walking Distance

34 Student Life

75 Ramblin' Roll

77 In Memoriam

84 Yellow Jackets

96 Calendar

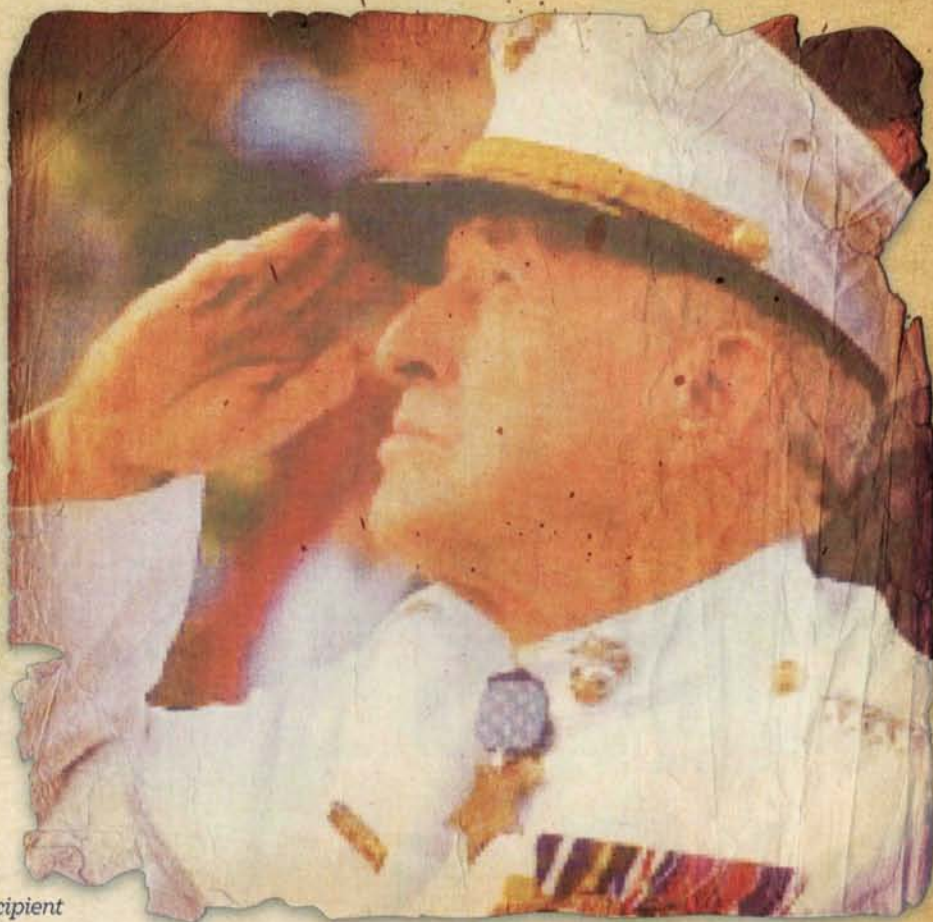
98 In Retrospect

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"The discipline of an education at Georgia Tech and its hands-on approach certainly prepared me to be a leader. Strong leadership principles –and they never change– along with adversity and good role models made me able to do things I might not have done otherwise."

General Raymond G. Davis, ChE 1938

Four Star General, U.S. Marine Corps, Medal of Honor Recipient



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Volume 86, Number 4

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Alumni Have Vested Interest in Strategic Plan

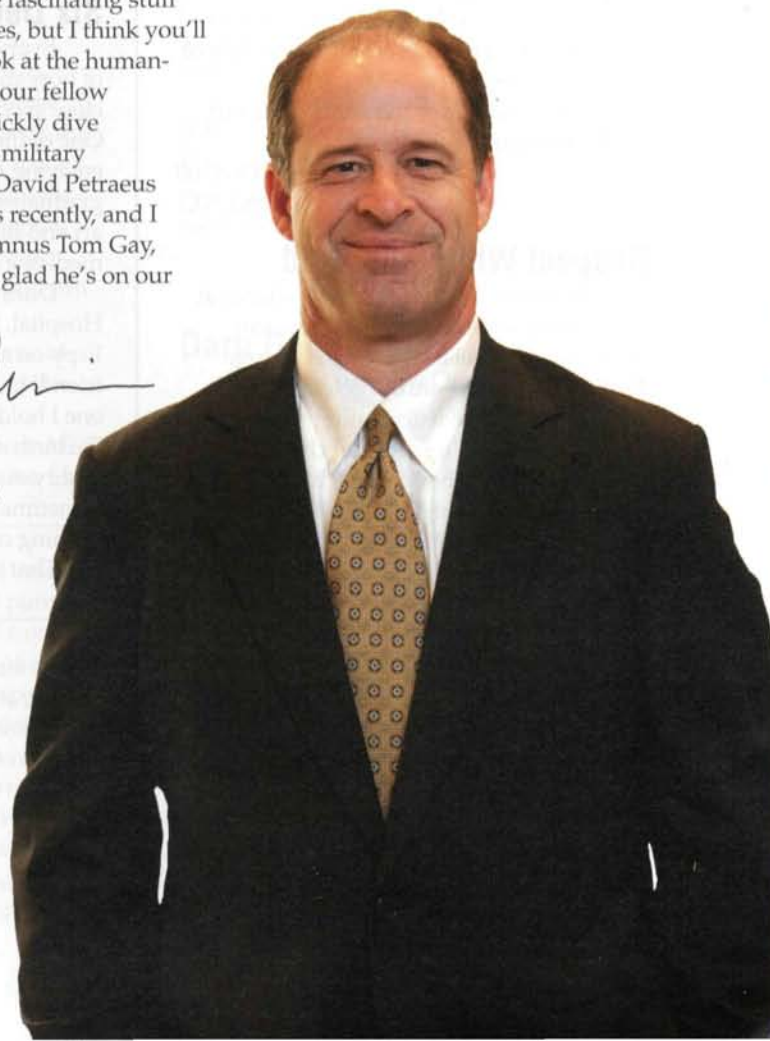
Some old business first — a huge public thank you to our Orange Bowl bash supporters: Gary Jones, Joe Evans, Alex Roush, Don Chapman, Richard Guthman, John Brock, Ben Mathis, Dave Rocker, Andrew Hunt, Janice Wittschiede, Russ Chandler, Carey Brown, Walt Ehmer, Dean Alford, Howard Tellepsen, Ken Townsend, Don Faulk, Larry Huang, Bill Goodhew, Dick Lawrence, Meade Sutterfield, Steve Chaddick, Phil Gee, Oliver Sale, Julian LeCraw and Phil Scott. We could not have thrown the finest pregame Georgia Tech celebration in the Alumni Association's history along with 1,800 Yellow Jacket faithful without your support. And thanks to all of you for coming to the bash. We hope you enjoyed the Orange Bowl party as much as we did.

As the strategic planning process unfolds, many new ideas about what Georgia Tech should look like in 25 years are bubbling up. As alumni, you have a vested interest for a lot of very good reasons. Have a look at the Web site, gatech.edu/vision, and roam through the strategic themes. You can read what's being debated and weigh in on this grand effort. There's an old saying at Georgia Tech that applies here: "We didn't break the mold, we made it!"

When we look ahead, the fields being explored at Tech will present magnificent new economic opportunities. After all, one of the most important characteristics of a great research institution is economic development.

In this issue of the publication, you'll see some fascinating stuff along those lines, but I think you'll also enjoy a look at the humanistic works of your fellow alumni and quickly dive into our proud military heritage. Gen. David Petraeus was on campus recently, and I agree with alumnus Tom Gay, who said, "I'm glad he's on our side!"

Joseph P. Irwin
President



Letters

My First Kiss

James H. Tipton, whom I remember as Jimmy Tipton, sent a letter for the January/February issue about professor Ed Folk that brought me a poignant memory.

My family, that of professor Glenn Rainey, who taught in the English department with Professor Folk, lived in the faculty apartment next to the Folks on Techwood Drive. I believe the dorms were Smith and Harris. Professor Folk's daughter, Allison, was my first girlfriend and the first girl I ever kissed.

That kiss occurred at a Tech football game in the old west stands of Grant Field along about 1943 when Allison and I were about 7 years old. It was my first football game, and I was awed by the spectacle. At one point when the crowd erupted, I asked Allison what had happened. She told me that Tech had scored a touchdown and that we were ahead.

I was so elated I grabbed Allison and kissed her — to the great delight of the adults, to her great embarrassment and to my indignation that the adults made light of such a serious matter.

I don't know how the game came out, but I do remember the kiss.

Ed Rainey, CerE 60
Hilton Head, S.C.

Respect White and Gold

The article The President's Residence at 60 mentions several times that President Peterson's wife Val is aware that Georgia Tech's school colors are old gold and white and that any future redecorating she does in the residence will "respect the school colors."

I wish that whoever it is that authorizes the licensing of Georgia Tech retail apparel would follow Mrs. Peterson's example. In any retail store selling college-themed apparel, including the Barnes & Noble "official" Georgia Tech bookstore at Spring and Fifth streets, just try to find any substantial selection of Georgia Tech apparel in old gold and white. You might as well be in the Naval Academy or Auburn bookstores. The athletic department gets it: All



Twins Madison and Wyatt Wynn were escorted to Georgia Tech's Homecoming in October by their parents, Mabry, ME 04, and John Wynn, Mgt 02, and friend Brian Oates, Mgt 02.

Six Degrees of Separation

Every once in a while I am reminded of how small the world can be and how close six degrees of separation is in reality. One of those moments occurred as I was enjoying reading the stories of how Tech graduates are contributing to the science, art and humanity of practicing OB/GYN medicine [November/December].

During my years at Kennestone Hospital, I enjoyed working with Dr. G.B. Espy on a number of projects and call him friend. In his list of accomplishments, the one I hold dear is his care of my wife and the birth of my daughters Hope and Mabry. As I recall, they were born sometime early in his record 12,000-plus birthing career.

That second healthy baby girl,

Mabry, whom he brought into the world right before he left town to run a marathon, went on to be a Ramblin' Wreck (ME 04), to marry a Tech man, John Wynn (Mgt 02), and last June gave birth to twins Wyatt and Madison (Baby Buzz Club members 2009).

There is definitely a pattern here and enough circumstantial evidence to prove an additional proposition that these doctors have probably contributed in another significant way to improve our world — that is bringing into this world future Georgia Tech students and alumni. Thanks for the great article and the opportunity to bring back to life wonderful memories and images.

Brue Chandler, IE 70
Knoxville, Tenn.

the sports teams are decked out in old gold and white, at least most of the time.

Yes, I know that navy blue is supposedly an official school color also, but why is navy the dominant color in Georgia

Tech apparel? Why not "respect the school colors," as does Mrs. Peterson, and provide us with some white and gold stuff to wear?

Daniel D. Hull, CE 62
Roswell, Ga.

Send letters to: Editor, Georgia Tech Alumni Magazine, 190 North Ave. N.W., Atlanta, GA 30313, or e-mail editor@alumni.gatech.edu. Send address changes to: Biographical Records, Georgia Tech Alumni Association, 190 North Ave. N.W., Atlanta, GA 30313, or e-mail bioupdate@alumni.gatech.edu.



Celebrating job offers from the Bell Bomber Plant in 1943 are Jim Loudermilk, Bill Bransford, George Hausmann, Sy Lampert, Lee Daughtridge, Aleck Bond, Hugh Hunter and Charley Adams.

Celebrating \$1.19 an Hour

It's time to mention something about a bunch of Georgia Tech Wrecks, part of the first grads who completed the accelerated AE option during World War II. Several ended up in the armed forces, while others became important components in the expanding aircraft industry and ultimately the space program.

The photo shows a gang of AE seniors in 1943 who had just returned from interviews at the Bell Bomber Plant in Marietta, Ga. We were celebrating the best offers we had received to date — \$1.19 an hour.

Unfortunately, many members of the

class of 1943 are no longer on the planet so I have no idea how their careers evolved.

My early work was with NACA Ames Lab. I worked at JPL during the time I was at Caltech. In later years, I was a consultant to the lab on several space projects. I was the director of advanced systems at North American during the development of the Apollo spacecraft.

Today I am a University of Southern California professor emeritus.

Maybe we may hear from some of these elderly Wrecks. They may just be wrecks.

Sy Lampert, AE 43
Irvine, Calif.

Another Water Solution

I read the Solution to Water Woes letter from alumnus Guillermo Alzuru in the January / February issue of the ALUMNI MAGAZINE. I have similar thoughts to try to rectify some of our water problems.

I wrote the following in a Dec. 19 letter to the *Savannah Morning News*: "Water continues to be a problem in many parts of our country. We may have flooding in some places and, simultaneously, droughts in

others. To reduce this problem, I visualize a system that will have a series of pumping stations to transfer water to and from large basins throughout critical parts of our country. They also could have pipes that would pump excess water into the sea. The overall system would have a central control station that monitors all of the basin levels and constantly monitors for anticipated rainfalls. This could consist of large reversible, variable-speed in-line pumps that transfer water through underground plastic

pipes. It would be very costly but may be a good cost- and life-saving project."

I think the suggestion I sent to the *Savannah Morning News* is a practical solution that does not have to be accomplished as a single unit but could be placed into operation in various phases. When completed, it would all run as one common system. Maybe the civil engineering department at Tech could undertake a study.

Richard Leech, EE 56
Richmond Hill, Ga.

Whose Logo?

I am afraid there is no true owner who has the proof needed to say he created the GT logo. My husband, Rick Schirm, has for years been telling me his story of doodling the GT logo as it stands today and leaving his notebook with the equipment manager, Buck Anel.

My husband was a tight end who signed with Tech in 1965 and played football as a freshman. He then went off to the Army for five years before returning to Tech to graduate in 1974 in industrial management.

I don't think the article [The Story Behind GT, January / February] is correct. With Buck no longer with us, there is no proof as to whose notebook was actually submitted.

Debra Schirm
North Palm Beach, Fla.

Darn Good Game

Iowa beat us in the Orange Bowl, but we played a darn good game. We can be proud of our Jackets.

I'd like to hear from anyone from the class of 1940 that has made it this far. Personally, I think the class of '40 is the greatest group ever to graduate from Tech. Most of them saw all of World War II and have made it through several recessions.

Give me a buzz at johnngjr@aol.com.

John Gaines, ChE 40
Prairie Village, Kan.

Cost of Education: Priceless

During my years at Tech, from 1945 to '49, I kept a meticulous record of every penny that I spent. (Believe it or not, I still do.) I ran across my Tech notebook with all

these expenditures while I was going through some old files recently and thought it might be interesting to see what has changed.

Here are a few items extracted from my old notebook:

RAT cap — \$1
Haircut — 50 cents
Shoes half soled — \$1.50
ROTC uniform — \$20
Benny Goodman dance — \$4
One-month meal ticket — \$30
Tennis racket — \$2
Golf at Piedmont course — 50 cents
Golf balls — Three for \$1
Train home to Daytona Beach — \$7.50
Out-of-state semester tuition — \$138.50
Total cost of tuition and books for four years — \$1,978.50

Total cost of four years at Tech — \$6,077.77

I hope that a cup of coffee won't cost \$45 in 60 years, but if history is any indicator, that 5 cent cup at Georgia Tech seemed a lot better than the \$1.50 (and up) cups today.

I always enjoy the GEORGIA TECH ALUMNI MAGAZINE and an occasional visit by an Alumni Association representative to keep up-to-date on the activities at Tech. Keep up all the good work that you are doing.

Joe Roberson, IE 49
Rancho Mirage, Calif.

Memories of Naval Barracks

Your excellent January / February issue included a letter from Bruce Smith, EE 51, suggesting more memories about the Naval Air Station campus after World War II. Not only did it accommodate returning war veterans but also 17-year-olds like me because there was no dorm space available on the main campus.

I was a co-op student who came to Tech in the fall of 1946. After being advised that there were no dorm rooms available on campus, my family assisted me in finding a room in a home on Ninth Street near Piedmont Park.

During my winter work quarter, I learned about the NAS campus in Chamblee and signed up for the spring 1947 quarter.

The barracks were divided into cubicles, accommodating two students, with a double bunk and study desks. This presented some noise problems since the cubicle dividers were open at the top. We had a common head (bathroom) for the 80 or 100 on our level. My roommate was a returning veteran,

probably five years older than me — nice guy and a good student.

Our classrooms were set up at NAS, but we had to travel to the main Georgia Tech campus for labs, physical training and ROTC drill, which was an experience. I don't recall that anyone had a car. We attempted to pool up when possible into fours and catch a taxicab, which were readily available outside the NAS gate thanks to some enterprising cab company.

We put in 15 cents each for the 50-cent fare and tipped the driver a dime to take us the two or three miles to Oglethorpe University on Peachtree Road. This was the end of the line for the trolley, which we boarded for the trip to North Avenue, where we got off and walked past the Varsity to campus.

Yes, we had a mess hall. As you might expect, some students complained about the food, but it wasn't all that bad. The veterans said it compared, good or bad, to the food in the Army and Navy.

Techwood Dorm was made available to co-op students for the fall quarter of 1947, so I was able to room there for the rest of my days at Tech.

The quarter I spent at the NAS campus was a good one for me, involving discipline, study and commitment. I am so thankful for not only the NAS trials we encountered but for all the experiences at Tech that prepared me so well for the future.

Paul Edfeldt, IE 52
Birmingham, Ala.

Freshman With Fencing Letter

The letters concerning fencing [January / February] inspired me to respond. Yes, Tech had a varsity fencing team. I was a member.

I graduated from Boys High School in 1942. We had a fencing team with English teacher Dave Beck as our coach. I was 17 when I started at Tech. The war was going on, so someone with my training made the varsity and probably was the only freshman to earn a varsity letter (by default). The final year for fencing was 1942 as the Army and Navy took over.

Fencing is a great sport. It's hard to understand why it was not reinstated as a varsity team.

Robert Davis, IM 46
Prairie Village, Kan.



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Your Career as a Game

Nathan Bennett, PhD Mgt 89, co-author of the newly published *Your Career Game: How Game Theory Can Help You Achieve Your Professional Goals*, will be the featured speaker at the Alumni Career Fair on April 6 at the Cobb Galleria Centre in Atlanta.

Bennett, the Catherine W. and Edwin A. Wahlen professor of management at Tech, also is the co-author of the 2006 book *Riding Shotgun: The Role of the COO*. He returned to Tech in 1999 after teaching at Louisiana State University. Bennett earned a bachelor's degree in sociology and a master's in applied social research, both from Tulane University.

He lectures internationally on team performance, strategy execution and change management. Bennett will discuss the game concepts covered in his new book at the Alumni Career Fair. Registration for the event, which annually attracts dozens of employers, is available at gtalumni.org/careerfair.

To whet the appetites of his audience, Bennett provided the following excerpt from the first chapter of *Your Career Game*.

In the film *A Beautiful Mind*, Russell Crowe plays game theory pioneer John Nash. One scene from the film succinctly captures the essence of game theory and its implications for decision making.

In the scene, Nash and his classmates are together in a bar when a group of five young women walk in — one blonde and four brunettes. The group — and particularly the blonde — quickly attracts the attention of Nash and his friends. Immediately, each classmate begins to plot his next move to win over the blonde.

Nash has an epiphany of sorts: If each one independently attempts to maximize his personal outcome (which in this scenario involves pursuing the blonde), they will

undoubtedly trip over one another and, in the end, no one will “win.” He predicts that by the time their mutual failures to win over the blonde become apparent it will be too late to turn their energy to her friends — none of the brunettes will want to be second choice.

This dilemma causes Nash to comment that Oliver Williamson's classical view — that through individuals acting in their own best interests, the best interests of the group are met — does not fit the situation. If each classmate acts in his own best interest, then they will all fail.

Nathan Bennett will be the keynote speaker at the lunch workshop from 12:15 to 1:30 p.m. April 6 during the 27th annual Alumni Career Fair at the Cobb Galleria Centre. Register at gtalumni.org/careerfair.

Instead, Nash understands each individual's best move depends on the anticipated moves that other rational players can be expected to make. Understood this way, the best course of action for each individual is to recall the dynamic — espoused in the title of the 1953 movie — that “gentlemen prefer blondes.”

Knowing that your classmates are likely to pursue the blonde first, a more effective strategy would be for you to attend to one of the brunette friends. That way you maximize your chance of winning the

attention of one of the women. The critical observation here is the recognition that, in many situations, one individual's best move is often dependent on the anticipated moves of other players.

Just as an understanding of game theory might help a college student understand how to win a date, we suggest that it can help you position yourself to have a successful career.

Game Theory in Our Culture

Game theory continues to be a popular topic; a 2005 Nobel Prize was, once again, awarded to game theory scholars. It has been used to provide novel ways to look at wide-ranging phenomena including logistics, investing, marketing, human evolution and terrorism. In popular culture, strategists have used game theory to outline a winning strategy in the spate of reality television shows (*The Weakest Link*, *Survivor* and *The Apprentice*, for example).

These shows share some important characteristics. First, individuals move to the next round — or are eliminated — based largely on the votes of other contestants. Second, early-round success depends on the contributions of all players. In such contests, the winning strategy involves finding the delicate balance between moves that cause others to conclude that you are too weak to contribute to the group tasks and those that reveal you to be so strong as to be seen by other contestants as a final-round threat.

Those who fail to achieve this balance and who appear to be “free riders” in the early rounds may not survive because others conclude that they cannot help the team with early wins. Those who tip their cards and reveal their strength too early will likely be eliminated by temporary alliances of other players.



Game Theory in Careers

Game theory has gained some traction as a useful tool for understanding business situations. For the most part, applications of game theory related to business strategy have focused on elements such as pricing strategy, market entry and strategic moves. The theory has not been explicitly applied to understanding career decision making.

Once a career is understood as a game involving players who compete for opportunities, the natural next question concerns how to become a better player. We suggest that the key to developing ability as a career game player is career agility. Career-

agile individuals have high emotional intelligence, are politically savvy, are comfortable with uncertainty and risk and thus demonstrate high degrees of successful portability from position to position over time.

Great players of the career game are often modest, and most minimize their own role in their success. In our experience, the most common explanation that executives will offer for their personal success is that they were lucky enough to be in the right place at the right time. Of course, as the Roman philosopher Seneca observed long ago, "luck is what happens when preparation meets opportunity."

Agile executives understand how to navigate to the intersection of preparedness and

opportunity. Whereas a concerted effort to do so would likely uncover some examples of meritless people stumbling into that intersection, it is fair to expect that most people's opportunities derive from demonstrated capability.

Others describe their rises as resulting from a nearly invisible "hand up" from a mentor. Some successful individuals are more purposeful in their efforts. As one executive told us, "Some people are constantly plotting their career. I don't know where they got this gene, but it seems that they are plotting from the playpen until they become chairman and CEO."

Game theory tools, concepts and nomenclature will help you understand that your career is productively viewed as a game characterized by interacting, interdependent and self-interested players. The game has rules; the players all have motives and options. Comfortable salaries, exciting work, promotional opportunities and charismatic co-workers are among the often zero-sum prizes out there to be "won" by players.

Game theory helps us frame the career game — to understand its rules, boundaries and ways of winning. Then, understanding career agility — a characteristic that individuals can develop — is explained as the key ability to playing the game well. Each is necessary, and neither is sufficient on its own, to win at the game of your career.

This excerpt from Your Career Game: How Game Theory Can Help You Achieve Your Professional Goals, published in 2010 by Nathan Bennett and Stephen A. Miles, is reprinted with the permission of the publisher, Stanford University Press. More information is available at sup.org.

Club Leadership Awards Given

The Ramblin' Wreck Volunteer of the Year awards were presented in February by the Alumni Association's Georgia Tech Clubs program to recognize outstanding contributions.

Demonstrating supreme dedication to Tech through a variety of volunteer club activities are Volunteers of the Year Troy Blalock, ME 92, president of the Columbia/Midlands Georgia Tech Club, and Tony Hancock, ID 77, past president of the Chicago Georgia Tech Club.

Blalock won approval of a Georgia Tech license plate in South Carolina and \$60 from the sale of each plate for the club's scholarship fund. So far, the sale of Tech plates has generated more than \$17,000 for scholarships for students from South Carolina attending the Institute.

Blalock has served as president of the Columbia/Midlands Club for the last five years. During that time, he led it to Tier 1 standing within the Georgia Tech Clubs program.

Hancock also led his club to a top-tier ranking. He and the club hosted alumni from around the country in Chicago for a

pregame celebration before fans traveled to Notre Dame for a 2007 football game.

The Best Friend of Georgia Tech honors are presented to those who did not attend the Institute but are still loyal to it and demonstrate that loyalty as dedicated club volunteers.

The Best Friend of Georgia Tech awards went to Rene'e Magee, wife of Bill Magee, IM 85, and Mary Montgomery, wife of Larry Montgomery, ME 78.

Bill Magee is president of the Georgia Tech Club of Northwest Georgia. Both Bill and Rene'e Magee have worked hard to re-activate the club and connect local alumni back to Georgia Tech.

Mary Montgomery participated on the leadership team when her husband stepped up to serve as president as the West Georgia club was restructuring its leadership team.

All the award winners and Georgia Tech clubs were recognized at the mid-February meeting of the Alumni Association Board of Trustees.

The nearly 100 clubs across the country host a variety of activities throughout the year. See the calendar at gtalumni.org/clubs.

Be Part of Pi

Registration now is open at gtalumni.org/pimile for the Dean Griffin Pi Mile 5K Road Race, this year scheduled for April 17, with the handing out of numbers beginning at 7 a.m. and the starting gun going off at 8 a.m.

Runners will get a T-shirt emblazoned with this year's winning design. Voting on the T-shirt entries continues through March 8 on the Pi Mile Web site.

The postrace party on the Tech Tower lawn will include food, drinks, raffle drawings and the presentation of awards in a number of categories.

Teams of at least five people also will have the chance to win \$500 for their organizations based on their finishing times. There are two team categories, one for established student groups, including fraternities and sororities, and one for alumni organizations, including members of a Georgia Tech Club or affinity group.

Did you know?

There are nearly 100 Georgia Tech Clubs in the country!



To find your local GT club, log onto www.gtalumni.org/clubs or contact Jane Stoner at jane.stoner@alumni.gatech.edu or 404-385-2216

Family Events



Young Alumni Events



Community Service



Call for Board of Trustees Nominations

Nominations are being solicited for candidates to serve on the Georgia Tech Alumni Association Board of Trustees for terms beginning July 1.

Nominees must be Tech alumni and have a significant record of supporting the Institute. A nominating committee of the current chair and past three chairs will convene in March to review all candidates and propose a final list of nominees. A

ballot will be published in the May/June issue of the ALUMNI MAGAZINE and online at gtalumni.org.

To submit nominations, fill out the form below or at gtalumni.org/registrations/nominate. Self-nominations will be accepted. Include a resume or brief biographical profile. Final deadline for nominations is March 12.

For more details, e-mail jolie.rosenberg@alumni.gatech.edu.

Name of Nominee _____ Class/Degree _____

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Home Address _____

E-mail Address _____

Company and Title _____

Nominated by _____ Class/Degree _____

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Mail to: Trustee Nominations, Attn: Jolie Rosenberg, Georgia Tech Alumni Association, 190 North Ave. N.W., Atlanta, GA 30313

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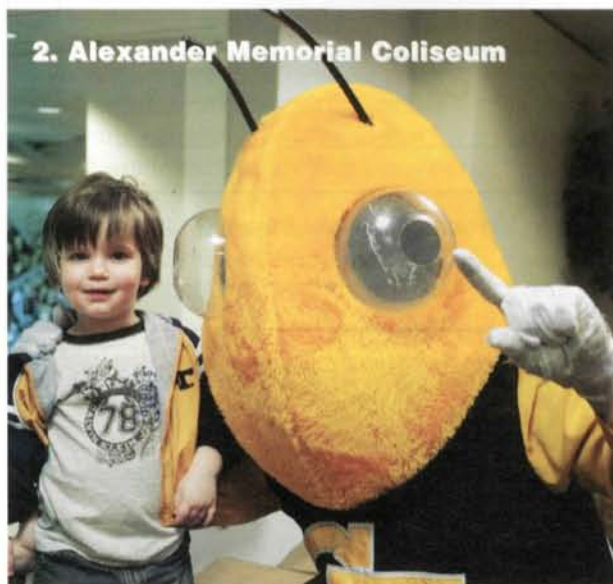
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1. Members of the Tampa/Suncoast and Orlando Georgia Tech clubs gathered on the court in Orlando before a Magic game. 2. Ethan James posed with Buzz at Alexander Memorial Coliseum before the game against Wake Forest in January. Ethan is the son of Cayman James, CE 99, MS EnvE 01, and Danny James, EE 00. 3. Mark Rambeau, IE 84, MBA MoT 09, fourth row, second from the left, believes the 25 years between his two Tech degrees "might be some kind of dubious record." The MBA program ended with a Capstone International Residency in Beijing and Shanghai, China. 4. Johnny Crane, IM 68, brought his son, Johnny Jr., Cls 93, and grandson, Jacob, to a Tallahassee Georgia Tech Club gathering before Tech met Florida State on the basketball court. Find a local Georgia Tech Club at gtalumni.org. 5. Boas and Tech gear distinguished Jackets fans at the Orange Bowl. 6. Jim Barfield, IE 55, of St. Simons Island, Ga., landed a 6-foot sailfish after a nearly 30-minute struggle while fishing on the boat Best Bet out of Key Colony Beach Marina in Florida in late December. 7. This Tech fan wanted to make sure everyone knew who he was cheering for during the ACC championship game in Tampa. 8. A young Tech supporter didn't mind sharing with Buzz at the Alumni Association's tailgate party in Miami before the Orange Bowl. 9. Liam Woolf Connolly kept warm in his Tech stocking cap. Liam is the son of Shannon and Matthew Connolly, Cls 08; grandson of Bill Woolf, IM 70, and Donna Spencer Woolf, Cls 73, and great-grandson of Warren Woolf, ME 47, and John M. Spencer Jr., EE 52.

Eric Turner

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A Vision of the Future

By Kimberly Link-Wills

It is 2035. Georgia Tech's president, deans, professors, staff and a scattering of alumni and students are gathered in a ballroom in Technology Square to look back 25 years.

In 2010, Tech "had an amazing reputation, it had extraordinary alumni loyalty and its growth in its campus, both physically and fiscally, had been quite remarkable. But equally clear were the challenges that it was then facing," including diminished state funding, challenges in the overall economy and growing global competition for talent, said Joe Bankoff, president and CEO of the Woodruff Arts Center and a member of the College of Computing advisory board.

President G. P. "Bud" Peterson invited Bankoff to deliver the *Back to the Future*-like presentation in January as part of the ongoing development of a strategic vision that will be unveiled this fall.

"In 2010, Georgia Tech set out to reframe its courses, its calendar, its performance incentives and its interactions between faculty, students and alumni. Flexible course structures were adopted," Bankoff said, and "the resulting innovation was transformative for the university, for education at several levels and for the cultural and economic environment of Atlanta."

He said Tech took advantage of plummeting real estate prices by acquiring vacant Midtown Atlanta office buildings "to create the new home of the Georgia Institute of Innovation."

"Georgia Tech's collection of research and innovation facilities and programs attracted willing, anxious and renowned collaborators near and far," Bankoff said, and breakthrough innovations resulted in such areas as biomechanics, nanotechnology, low-carbon technologies and robotics. "These

innovations were not only technical advances, they incorporated aspects of design aesthetic that made them cool. Making them cool made them usable. Making them cool and usable made them valuable commercially, and so the innovation institute spawned an explosion of the redevelopment of the old areas of Midtown Atlanta."

The Alumni Association figured into Bankoff's vision to attract graduates back to campus in the future.

"A new benefit of membership in the Alumni Association became the lifetime option to engage in campus discussions and periodically participate in a class or a project. In exchange, the alum was asked to contribute to the dialogue online or in person, and the community of continuous learning was therefore extended to all alumni and built an even stronger commitment to the institution," he said.

Between 2010 and 2035, "big, hairy, audacious goals" would be realized, Bankoff said, including the creation of an institute for intellectual property and competition law.

Peterson called Bankoff's ideas exciting and scary. "It gives you some sense of how important what we are doing today will be to Georgia Tech in the future," he said.

"One of the things that's clearly come out of this is the need for flexible-degree programs," he said. "One of the statements that's been made is: If we believe that many of the new and exciting fields of discovery that are going to help shape the future are in fact going to lie at the intersection of traditional disciplines, then why in the world would we continue to educate students in a structured, traditional disciplinary format?"

He said a four-year degree probably will no longer carry an individual through his entire working life.



Illustration by Torian Parker

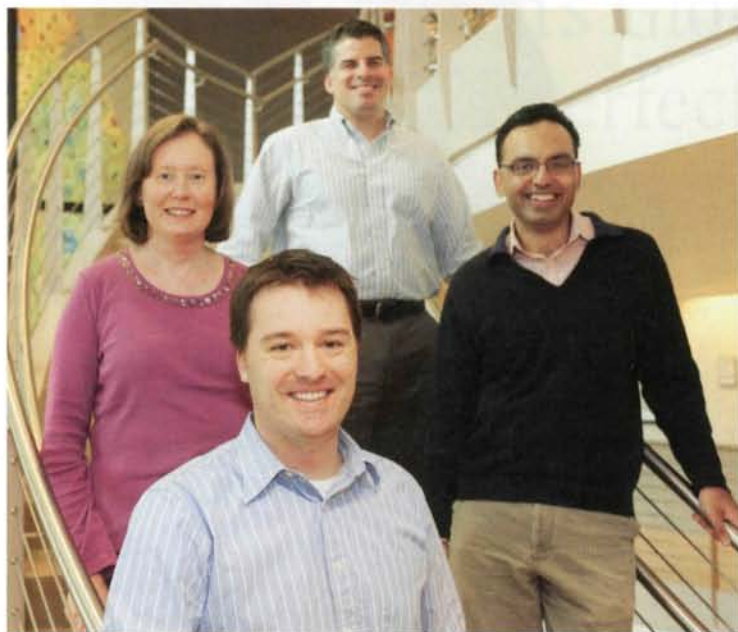
"What if Georgia Tech were to guarantee all undergraduates that they could come back, that we'd guarantee their education for life?" Peterson asked. "You can come back and take any undergraduate course for free for the rest of your life ... on a space-available basis."

Peterson said Tech could take the lead in intellectual property policy. "No institution of higher education has really figured out how to handle intellectual property. We spend an awful lot of time pitting our attorneys against our research sponsors' attorneys, fighting over something that may never exist, may never transpire. Maybe we can take a national leadership position ... and set the bar at a level other people will strive to achieve."

There are opportunities for Tech to serve as a model to foster health-care excellence as well as to establish virtual-learning environments, he said, and Georgia Tech could set up an office with the sole purpose of working to acquire green cards for international graduate students.

"We bring in this tremendous amount of talent into this country in graduate schools, then we make it very, very difficult for those students to stay in this country and contribute to the economy and the well-being and the technology development that is so important," Peterson said.

In his closing remarks, Bankoff told the audience, which largely consisted of people crafting the strategic vision, "The best way to predict the future is to create it."



Assistant professor Todd McDevitt has been awarded the 2010 Young Investigator Award from the Society of Biomaterials. McDevitt is the fourth Georgia Tech faculty member to be awarded the honor in the past seven years. The others are Julia Babensee, Andres Garcia and Niren Murthy.

Young Investigator Identified

Assistant professor Todd C. McDevitt has been awarded the 2010 Young Investigator Award from the Society of Biomaterials.

The McDevitt Laboratory for the Engineering of Stem Cell Technologies is focused on the development and application of engineering principles to translate the potential of stem cells into viable regenerative therapies and in vitro diagnostics.

The McDevitt lab's research also focuses on development of novel regenerative molecular therapies from natural biomaterials produced by stem cells. The combination of directed stem cell differentiation and development of stem-cell-derived biomaterials is expected to yield fresh insights into stem cell biology, facilitate new regenerative therapies and create novel cell diagnostic platforms.

McDevitt was appointed as a Petit faculty fellow in the Institute for Bioengineering and Bioscience in September 2009 and has been named director of the new Stem Cell Engineering Center at Georgia Tech, which is scheduled to launch this year.

Reducing Cost of Wind Turbines

A technology developed to increase lift in aircraft wings and simplify helicopter rotors may soon help reduce the cost of manufacturing and operating wind turbines used for generating electricity.

This circulation control aerodynamic technology could allow the wind turbines to produce significantly more power than current devices at the same wind speed.

Research aimed at adapting circulation control technology to

wind turbine blades will be conducted by a California company, PAX Streamline, in collaboration with Georgia Tech. The two-year project, which will lead to construction of a demonstration pneumatic wind turbine, will be supported by a \$3 million grant from the Advanced Research Projects Agency-Energy.

"Our goal will be to make generation of electricity from wind turbines less expensive by eliminating the need for the complex blade shapes and mechanical control systems used in current turbines," said Robert J. Englar, principal research engineer at the Georgia Tech Research Institute.

Grant Funding Energy Solutions Lab

The U.S. Commerce Department's National Institute of Standards and Technology in January awarded the Georgia Tech Research Corporation \$11.6 million to construct the Carbon-Neutral Energy Solutions Laboratory. With a total budget of \$23.3 million, the 45,000-square-foot facility will house several energy research efforts.

From the design and construction to daily operation, the lab will achieve carbon neutrality with net-zero site energy use. By effectively using several energy-saving designs — including a full photovoltaic array — the facility can achieve carbon neutrality without purchasing carbon-offset credits.

The research focus of the facility will be sustainable energy solutions, including high-efficiency combustion engines, biomass gasification kinetics, biochemical-enzymatic conversion of biomass materials and capture of carbon dioxide from power plants and combustion engines. Target completion date is spring 2011.

Design Center Nets \$40 million in Gifts

The Georgia Electronic Design Center at Georgia Tech has received \$40 million in electronic design automation software, support and training from California-based Agilent Technologies Inc.

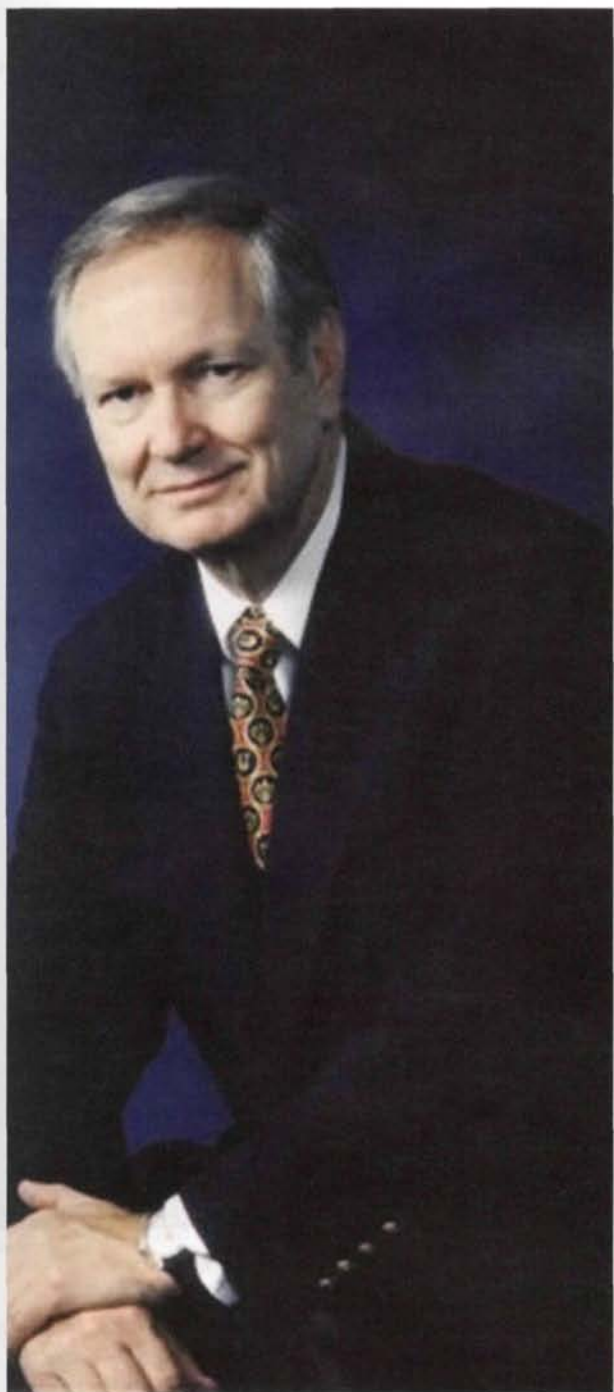
The multiyear commitment, which will continue through 2012, marks the second phase of Agilent's work with GEDC. The company made a similar in-kind gift in 2007 of EDA software and tools valued at \$13 million.

This new agreement provides an outlet for smaller startup companies to gain access to Agilent EDA software and technologies through GEDC. The Agilent EDA Simulation Center currently provides radio frequency, microwave-system and circuit-design instruction and research for students and startup companies.

International Program Praised

The Institute of International Education is recognizing Tech with a 2010 Andrew Heiskell Award for Internationalizing the Campus.

The award cites exceptional programs that bring international elements to the study and teaching of engineering. Over a two-year period, Georgia Tech faculty and administrators developed a broad set of global course requirements that can be tailored to any discipline. This curriculum integration initiative, the International Plan, is in its fifth year and encompasses 25 of the 35 undergraduate majors.



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Susan Herbst: Study in Civility



Rebecca Hughes

By Leslie Overman

When her work as executive vice chancellor and chief academic officer for the University System of Georgia doesn't have her driving across the state visiting the public colleges and universities for which she oversees academic programs, Susan Herbst, also a tenured professor in the School of Public Policy at Georgia Tech, works in an office at the Board of Regents' headquarters in downtown Atlanta.

The space is filled with African artifacts, politically themed

artwork and mementos from her 20-plus-year career in higher education. Before moving to Atlanta in 2007, Herbst served in faculty and administrative positions at Northwestern University, Temple University and the University at Albany-SUNY.

A political scientist whose early research focused on the history of public opinion in America, she has served as editor of a book series on politics published by the University of Chicago Press for more than decade. She now is writing a book titled *Rude Democracy: Civility and Incivility in American Politics*, which is scheduled for publication later this year by Temple University Press.

Inspiration: Great, original ideas inspire me. One of my favorite activities, besides working with students and political science colleagues around the nation, is working with the chancellor and regents on the vital issues in higher education. We try to support presidents and provosts in building even better universities.

On a drawing of Jacques Necker: He was the finance minister for Louis XVI, so was critical in the court and the economic planning of the period. He's often thought to have coined the phrase public opinion, and he was also a very insightful reader of public opinion. As a public opinion scholar, he's very big for us.



On the road: I do travel around the state a lot to our different institutions. It helps me to understand the campuses better when I drive there and I get in the local community and I stop for food or gas — or get lost, which is common. Many times, the president's secretary is out on the street trying to wave me in.



Old-time politics: That's a portrait by George Caleb Bingham, a great painter of daily political life in the American 19th century. It shows how voting was a very public practice. There's no going behind a curtain in

this. You could see not only that people were voting, but you could see how they voted too.

Civility in politics: On both sides, left and right, there's much more advocacy journalism now of an ideological sort. Many people have argued that this has led to more incivility and less collaboration among people of different political parties and backgrounds. In my new book the argument is that Americans need to have a thicker skin about political debate. While we don't want people to be rude to each other or destructive, and certainly I come down firmly against hate speech of any sort, we are also very thin skinned about political debate.

Up for debate: The last chapter of the book tries to lay out some ways that Americans can learn to be better debaters, from the

time they enter middle and high school to the time they're adults and they really do have to engage in substantive debate, whether that's in PTA, at a town council meeting or a zoning board meeting or around the workplace. I think Americans are really bad at it. I think we were never good at it.

Debunking myths about the good old days: I'm always against the Golden Age arguments, which are typically false, that we used to be more civil, we used to be better debaters, politics used to be more substantive. None of that's true. Historians know very well that there's always been incivility, there's always been mudslinging, the parties have long acted poorly to each other. I do think incivility is manifest in different ways now because we have the Internet, Facebook and Twitter and all these technologies that make incivility and civility look very different.

Inspiring gift: It appears to be a strong factory worker woman of the early 20th century, in the artistic style of "social realism." It was a gift from one of my closest friends at Northwestern, a professor of art history. It was meant to inspire me to stay in leadership, as I had been a leader at Northwestern in many roles, including chair of the department of political science.



On her Duke-themed Barbie: I was an undergraduate at Duke. My husband, a Carolina grad, gave her to me because he thinks I'm not quite like a cheerleader. But he and I know, from our many campuses, that cheerleaders are often among our very best students. One can be a scholar at the same time, so perhaps there's hope for me yet!

Where she gets her news:

I definitely read *The New York Times* every morning and the *Atlanta Journal-Constitution*. Then I start going on the Internet and look at WallStreetJournal.com and whatever else comes up. I think that a lot of people probably aren't reading the two



papers in the morning, they're going right to the Internet. And certainly young people are.

Where students get their news: I wonder about my students. They seem to keep up really well, but they often have an incomplete picture of the news, and it's hard for them to do the gatekeeping. So many people call themselves journalists now, and it's difficult to tell from the Internet who's really doing work and who has expertise and who doesn't. The Tech students have said that one big source of news for them is *The Daily Show* with Jon Stewart. And on that I will withhold opinion.



Hometown: I was born in New York City, and then my parents moved a little farther north on the Hudson River. I grew up there.

She originally wanted to grow up to be: I kind of wanted to be whatever my older brother was going to be. Maybe that's why he became an academic and I did too. I guess I knew I'd do something bookish.

Out of Africa: That same brother is also a political scientist. He's an Africanist. He just became president of Colgate, a university in upstate New York. ... He goes to Africa like I go to Target. He's there all the time, and he's always bringing back interesting things, masks, carvings, tapestries. His house is just like a museum, so occasionally he brings me something too.

Her children: They are 14 and 15, Daniel and Rebecca. They love Atlanta. One of the

reasons we moved here is my husband's father lives in Dahlonega, and so does his brother. So we've been coming down here for 25 years.

Morning routine: We are up early, and I always drive the kids to school, unless I have a meeting. I'm in the office between 7:30 and 8, after Starbucks. Sometimes I drive straight to a campus. I've really put a lot of mileage on the car.

On her founding fathers action figures: Lewis and Clark are in there too. I got those at Temple when I was in Philadelphia. Being an academic leader in Philadelphia, you get deeply involved in places like the Constitution Center. Most people with any historical sensibility who spend time in Philadelphia get all wrapped up in that.

Current hobby: I started out as a philosophy major in college, and, I think because I had a bad professor of logic, I went scurrying to political science. ... Right now I'm reading a book on Immanuel Kant, who is absolutely one of the premier philosophers of all time and also one of the most difficult. So I think trying to slog through Kant is a hobby.



One tough cookie: I have actually written a scholarly paper about Norman Rockwell, and it's about how much he had to say about public opinion in early- to mid-20th century America. That was a gift from my husband, *The Shiner*. It's often referred to just as "the girl with the black eye." He thought it was a good representation of women in leadership because it looks like she beat up a boy.



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~ Sadi

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Hyacinth Ide: Tree Hugger

In December, the Arbor Day Foundation recognized Tech's management of its thousands of trees and work to promote environmental stewardship among students by naming the Institute a Tree Campus USA university for a second consecutive year. Keeping the campus' 400 acres lush and litter-free is a 45-member staff led by the fittingly named Hyacinth Ide, Facilities landscape manager since 1999.

1. Is there a story behind your name?

There's not a technical, botanical correlation there. My family had a friend called Hyacinth, so when I was born they just named me after him. And somehow I ended up in this business, dealing with flowers and plants.

2. What's a typical day on the job like for you?

I don't believe there is a typical day. We probably should've been named grounds department because we maintain all the plant materials, and we also maintain all the streets and sidewalks. We have a street sweeper that sweeps the street, potholes that we have to fix. If it's major road construction, then we hire a contractor, but it's still under our care. The street signs you see, we make them here. If there's a busted pipeline or steam line, my crew, the construction crew, handles the digging and restores the site. Plus the tree work.

3. Is there anything your staff doesn't do?

The only area that is hands off is the Greek area. Can't do anything about Greek. In fact, one time I tried, and I was called by my superior and told, "That's not your job." We still have those alleyways to clean up, so I can't avoid it. Sometimes I do knock on the door, especially when they make a mess on the sidewalk.

4. What can people do to keep campus looking its best?

Well, the number one would be to utilize our trash cans because we spend a lot of time picking up trash. In fact, when we compute the hours, we spend over \$300,000 a year picking up trash on campus. And number two, using the sidewalks. If they do those things, it would be very helpful. And, of course, using the cigarette urns, i.e. the ashtrays.

5. About how many flowers are planted each year?

The flower program, which we call the color program, has been very, very reduced. In 2007, 2008, we didn't plant at all because of the drought. We planted 619 flats of flowers in the fall

because landscape services' function is to make sure that the campus looks beautiful and attractive for people. When they come, they should feel comfortable, happy to be here. It's important that we maintain a multi-culture of plant materials. When possible, you want to make sure there is green and color every season. That should be the ideal. But we have some people that think having a beautiful campus is not important. Some of them are very vocal. They forget about the importance of a nice environment. Most people would like a nice environment.

6. Do you have a favorite spot on campus?

I always think that is the administration area because of its mature landscape. You have big trees. In fact, in the summer months when you get over there, especially if you're coming from somewhere else, you feel like you're not in Atlanta. I've been told by visitors, "Wow, it's so good."

7. How many trees are there on campus now?

We have 7,023.

8. What's the oldest tree?

We're guessing that it's the [water oak] over by the Student Center and Skiles. We're guessing it's over 100 years old.

9. Is there an overall philosophy to the landscaping plan?

The main philosophy of Georgia Tech today is to have a landscape that will reduce and, if possible, eliminate run-off water from going into the storm drain but also to capture it and use it as irrigation water. ... Most of our systems in the new buildings have what we call cisterns, underground containers that collect drainage from rainwater as well as condensate from air-conditioning units. We use that to water our plants.

10. You've also worked at Tuskegee University and Emory University. Are there any challenges unique to the Tech campus?

Here at Georgia Tech, which is a little bit different from other institutions, students tend to walk in a straight line, no matter what you do. Maybe it's because of all the calculations they are doing. They just walk straight. So if you have a grassy area in front of you, they're going to walk through it. They have a class that way, they're going to walk through the grass. And if you put a sidewalk there, the next semester they'll probably walk a different way.

— Leslie Overman

Kelvin Kuo



Commander Building

By Leslie Overman

Two pages of the 1961 *Blueprint* were devoted to Charlie Commander. A clean-cut, bespectacled man, Commander in one photo was perched on the front steps of the Georgia Tech YMCA, the brick building on North Avenue that now houses the Alumni Association offices.

The '61 yearbook was dedicated to Commander for "his years of instilling Christian ethics in the students of Georgia Tech, for his deep devotion to his work, for his tireless efforts, through group and individual projects, to help the students reach for a broader concept of life, for his unceasing work toward character development in the students he has come in contact with in the hope for a better and more Christian world."

"His perseverance as general secretary of the Georgia Tech YMCA," the *Blueprint* editors continued, "has helped him to overcome insurmountable odds in establishing a Christian attitude on a seemingly immoral campus. His efforts have earned for him the deep respect and admiration of the student body. To men of the caliber of Charlie Commander we owe a lifelong debt of gratitude for their guidance and inspiration."

Charlie Commander was secretary of the Young Men's



Christian Association at Tech from 1940 until his death in 1967 at the age of 52. He'd spent practically his entire professional life working for Georgia Tech students. Early in his Tech career, Commander and his wife, Wylene, even lived among them in an apartment on the second floor of the YMCA.

Commander was a faculty member of ANAK and Omicron Delta Kappa and in 1962 was awarded the Dean Pershing Award in recognition of his outstanding service to students. The Commander Building on McMillan Street was named for him once construction was completed in 1969.

In a 2001 interview with the Alumni Association's Living History program, Carlton Parker, a former executive director of the Tech YMCA who worked under Commander, said, "He was probably the most creative person I've ever known. Quiet and very organized and orderly, but also a very

creative person. He could just figure out how to get people together to do great things."

Those great things included the creation of Freshman Camp, a program to bring incoming first-year students together to socialize and make friendships prior to the start of classes, and a leadership conference that brought student leaders of campus organizations



When construction was completed in 1969, the interior of the Commander Building, at left, exuded modern comfort. Charlie Commander was the secretary of the Young Men's Christian Association at Tech from 1940 until his death in 1967. The YMCA building, above, now is home to the Alumni Association offices.

together with faculty and the Institute president to get to know each other before each school year. He also brought many international students to the Tech campus to study through the World Student Fund.

But Commander's most important contribution to Tech may be his work to make the 1961 integration of campus run smoothly, and more importantly, to make Tech's first black students comfortable on campus.

After getting the permission of Tech President Edwin Harrison, Commander organized a series of dinners at a YMCA on Luckie Street. He recruited a handful of students each week to sit down to a steak supper with the three black students who had been accepted to Tech, Ford Greene, Ralph Long Jr. and Lawrence Williams.

In an article published in the May 1967 issue of the *Georgia Tech Alumnus* following Commander's death, editor Bob Wallace said the YMCA secretary "actually did little talking himself but led the boys into open discussions of their own attitudes and prejudices. It wasn't the only thing done to

prevent another Athens or Oxford or Tuscaloosa but it had an impact all its own. And we got through the crisis in such good shape we owe a great deal to him for it."

Born in Florence, S.C., Robert Charlton Commander dedicated most of his life to the YMCA. He was a member of the National Council of YMCAs and an officer of the board of directors of the Southern area council of the YMCA.

Commander decided to pursue a career with the organization after serving three years as president of the Clemson chapter while an undergraduate student. He later was director of the youth program at the New Haven YMCA while preparing for a bachelor of divinity degree at Yale. From there, he went to the Virginia Polytechnic Institute YMCA, for which he worked for a year.

During World War II, Commander, who participated in ROTC at Clemson, refused the Army's offers to serve in the chaplaincy, instead serving as an infantry officer in the Pacific theater.

"Charlie had very difficult eyesight, so

he had to sign a waiver in order to go abroad in the military service," Parker told the Living History program. "He signed the waiver and carried with him three pairs of glasses the entire time that he was in the Pacific. I think probably a large part of the early end of his life resulted from some of the illness that he experienced during the war in the Pacific."

According to the *Alumnus*, Commander died of pneumonia just a few days after a recurring lung problem had sent him to the hospital. He had had major surgery a few months before.

As Wallace concluded his written tribute to Commander's long and lauded tenure at Tech, "There is not enough room in these pages to tell the complete story any better than to say that he was a man who cared about others whether they were good or bad or indifferent.

"He spent half of his life making Georgia Tech a better place for students and the faculty and even those of us who were his administrative colleagues," Wallace wrote. "He is missed."

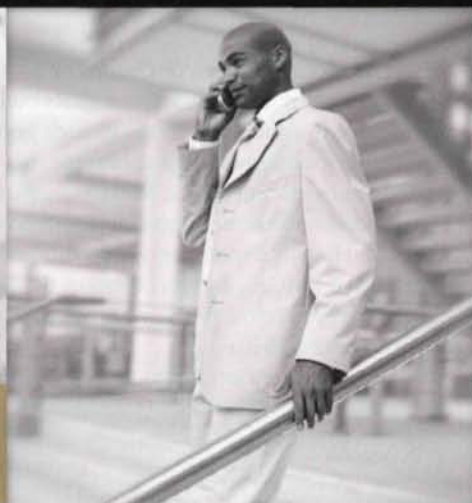


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Van Jensen

Spoon Full of Thai Tastes, Familiar Faces

Look to your left. Look to your right. Chances are one of you eating lunch at Spoon is a Georgia Tech power broker.

Located just steps from the Ivan Allen College at 768 Marietta St., Atlanta, the Thai restaurant fills quickly at lunchtime with Tech faculty and staff as well as local leaders. With tables positioned closely together, it is impossible not to notice a former U.S. senator conducting a meeting over Pad Thai while a football play-by-play announcer is holding court, perhaps over a curry dish, in a seat by the plate glass window and a mechanical engineering professor is talking shop within tackling distance while noshing on fried spring rolls.

Spoon does just fine without broadcasting that it's an off-campus hot spot day and night. The management had no problem with the ALUMNI MAGAZINE staff taking photographs of the food but saw no need to come out of executive chef Aim Suteeluxnaporn's busy kitchen to tout the eatery.

Granted, Spoon doesn't need free advertising to help sell its food. We just wanted to point out that the people watching is priceless.

— Kimberly Link-Wills



Strictly Ballroom

By Van Jensen

The simplest way to tell the returning members of the Georgia Tech Ballroom Dance Club from those attending their first meeting was to look at their feet.

As the two dozen dancers walked through the steps of the waltz in a studio in the Campus Recreation Center, the experienced ones wore dancing shoes and moved gracefully. The first-time attendees moved unsteadily and wore tennis shoes or just socks.

It was the semester's first meeting for the club, which has grown in recent years through the efforts of club members and by bringing in a celebrity coach. Irina Nikiforova, a PhD candidate in history, technology and society, kick-started the club when she came to Georgia Tech five years ago.

Nikiforova had grown up dancing in her native Russia and met countryman Olga Kormanovskaya during professional competitions. Kormanovskaya is a champion Latin dancer and partner of Louis van Amstel, who has appeared on several seasons of *Dancing With the Stars*.

"When I came to Tech, there wasn't really any ballroom dancing," Nikiforova said. "I was so sad because I had been training with such a good team."

While watching the new members struggle with the waltz, Nikiforova said one of the best parts of starting the club has been watching members come in with little or no experience and quickly grow into talented dancers. She pointed to outgoing club president Amy Elliott, a fourth-year science, technology and culture major.

"Amy went from nothing to a champi-



onship-level dancer," Nikiforova said. "It shows what you can do in three or four years."

Elliott explained, "I came in as a ballerina and knew nothing about ballroom dance. Then they made me president, and I had to learn everything."

The club offers weekend lessons in Latin dances taught by Kormanovskaya, Tuesday night lessons in ballroom dances and practice sessions on Thursday nights. Elliott said the central mission of the club is dance education, both through classes and

outreach on Tech's campus and beyond.

Members also travel to several competitions a year. At the Gamecock DanceSport Challenge, held in December at the University of South Carolina, the Tech team earned several medals.

The club, which has members from at least six countries, also performs on campus at student events and Culture Fest. They hope to start a dance challenge that would partner professors with club members.

"It's a way to show the world what we've got," Elliott said.



Kelvin Kuo

New and returning members of the Georgia Tech Ballroom Dance Club practice the elegant hold and the steps of the waltz, diagrammed below.

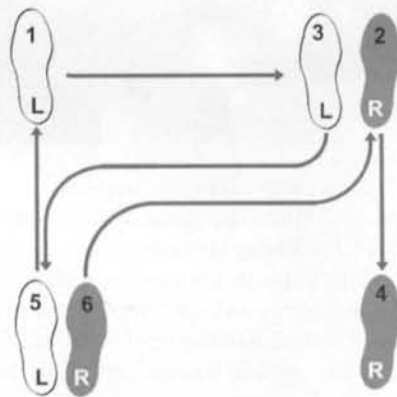
As the semester kicked off, the task at hand was to get new members up to speed on the waltz, with local professionals David and Shelley DuVal serving as instructors. As the dancers formed three neat lines, a mannequin for self-defense classes lurked in the corner.

They began with the reverse step, moving in a square pattern as the instructors counted off steps. David DuVal noted the dearth of males in attendance as students began pairing up.

"It looks like we have a few girls who can lead," he said.

Elliott said the club initially had a struggle finding enough female members. She wondered if Tech's recent success at recruiting female students had an impact on the club's gender breakdown. Meanwhile, the dancers struggled to master the embrace.

"Gentlemen, hold your left hand out and let her walk to you," DuVal said. "You'll touch later, but for now we're going



to make sure you don't hurt each other."

Later, the dancers continued bumping into each other.

"A good guy is always making space for the lady, and a good lady is always moving in that space," DuVal noted.

As the partners tried spinning together, the instructors kept pointing out minute things to fix: the speed of steps, the position

of hands and the angle of hips. The faces of new members were locked in concentration, and they stepped timidly.

Knowing his audience, DuVal gave mathematical tips, dividing the dance floor into diagonal sections.

"The waltz happens to be one of the most geometry-intensive dances," he said.

As the two-hour practice moved along, gradually the movements became more and more polished. By the end of class, the dancers were twirling across the floor, combining a variety of steps and turns.

"We did it!" one dancer shouted after finishing the routine by giving her partner a high five.

Several of the seasoned club members stood at the side and cheered on the new dancers. Nikiforova smiled, thinking of the fun ahead.

"The best part is the memories," she said. "These are my best memories from my time at Georgia Tech."



Brooke Novak

Third-year industrial engineering major Doug Kenny takes a leaf blower to the face during the filming of a lighthearted Georgia Tech commercial.

Behind the Scenes of the Mini 500 PSA

By Van Jensen

Last June, Doug Kenny found himself on a tricycle, a green screen behind him and two leaf blowers going full blast a few inches from his face.

As people with video cameras circled around, Kenny, wearing only tights and a helmet, wondered how he got himself into the situation.

Two days earlier, the third-year industrial engineering major had been in the car with his parents on the way to the wedding of his brother's friend when his phone rang. It was the director of a public service announcement for Georgia Tech.

The director didn't say much beyond that a student who was supposed to have appeared in the PSA had dropped out at the last minute. They were going to start filming in hours and needed to recast on the fly.

"My first response was, 'I'm on the way to a wedding. I can't,'" Kenny said. "But my family said it could be fun. So I called back and said I'd do it."

He hurried to campus — missing the nuptials — and found a full film production team set up to shoot. Kenny had zero acting experience. He learned that, as a tennis player with a high GPA, he'd been on a list of potential students for any PSA.



"I didn't know I had the lead role," Kenny said. "But I was game for anything."

As far as Kenny knew, he was going to be in a little video that would be available online or possibly on local TV broadcasts. When he looked over the script — a Tech student does various training and research for what appears to be a serious project but turns out to be the Mini 500 tricycle race — he thought it was "totally ridiculous."

"I kept telling [the director], 'Please don't make me look stupid,'" Kenny said. "I thought it could be really cool or really, really bad."

The most difficult part, without question, was the "wind tunnel" scene, he said, recalling the hours on the trike with leaf blowers blasting as "brutal."

His favorite scene, the Mini 500, was the first scene filmed. Kenny got to walk out to a cheering crowd of extras. Then he won the race amid a celebration. The entire filming experience was a marathon, lasting four days.

Fast-forward to Bobby Dodd Stadium, where, during a time-out, Kenny watched the PSA play on the stadium's massive new screen to cheers.

"That was really exciting," he said. "But the coolest thing was seeing it on ESPN."

Kenny's acting turn continues to be played during national broadcasts of Tech sporting events, meaning thousands have seen his comedic role. He said he's proud to be a part of an ad that portrays engineering in a fun light.

"We use what we do for amazing things, which you see with the shuttle at the end of the commercial," Kenny said. "It was really awesome how they made engineering look cool."

Kenny, who grew up in Roswell, Ga., has left the tennis team to focus on graduating next fall, and he hopes to pursue an MBA at Tech. Despite the success of the PSA, his ambitions lie in finance, not Hollywood.

"I don't think that's in my future," he said of more acting. "But if they called me and asked me to be in one again, I'd do it."

Watch the PSA at gatech.edu/mini500/.

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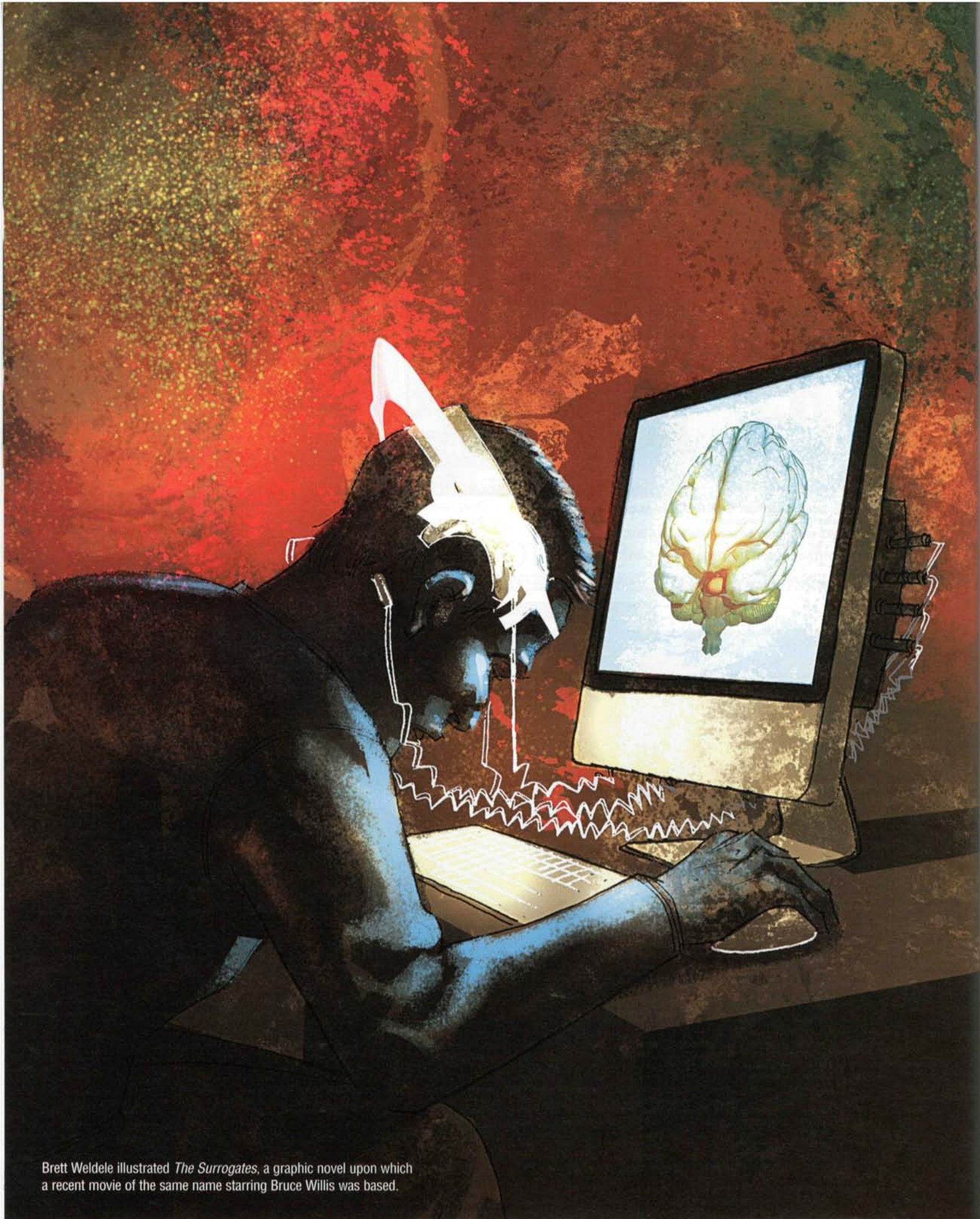
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Brett Weldele illustrated *The Surrogates*, a graphic novel upon which a recent movie of the same name starring Bruce Willis was based.

Meeting *of the* Minds

Tech's NeuroLab is melding man and machine

Story by Van Jensen

Illustration by Brett Weldele

When he was 8 years old, Andres Garcia went to the theater in his native Puerto Rico to see *Star Wars: A New Hope* for the first time. While most of his peers cowered as Darth Vader stomped onto the screen, Garcia was fascinated. The Dark Lord Vader was part man and part machine, biology and technology interwoven.

Darth Vader is science fiction. And yet, three decades after the character first appeared on screen, Garcia, a bioengineering professor in the Woodruff School of Mechanical Engineering, is refining implantable electrodes that create an integrated interface between the human brain and machines.

"I'm a child of *Star Wars*," said Garcia, who watched *A New Hope* three times in the theater. "When I chose to go into engineering, it was with an eye toward that type of work. I'm a geek at heart."

Elsewhere on Tech's campus, researchers are using brain signals to allow paralyzed people to control motorized wheelchairs and wordlessly communicate. And a culture of rat neurons is controlling a robotic arm that's halfway across the world.

This sounds like science fiction, but it's the very real front line of brain-robotic interfacing. And Tech's researchers are on the cutting edge of that field, which is set to become more advanced, and more pervasive, in the decades to come.

Garcia, a materials scientist, works closely with the Laboratory for Neuro-engineering, or NeuroLab, a multidisciplinary environment for cutting-edge research at the

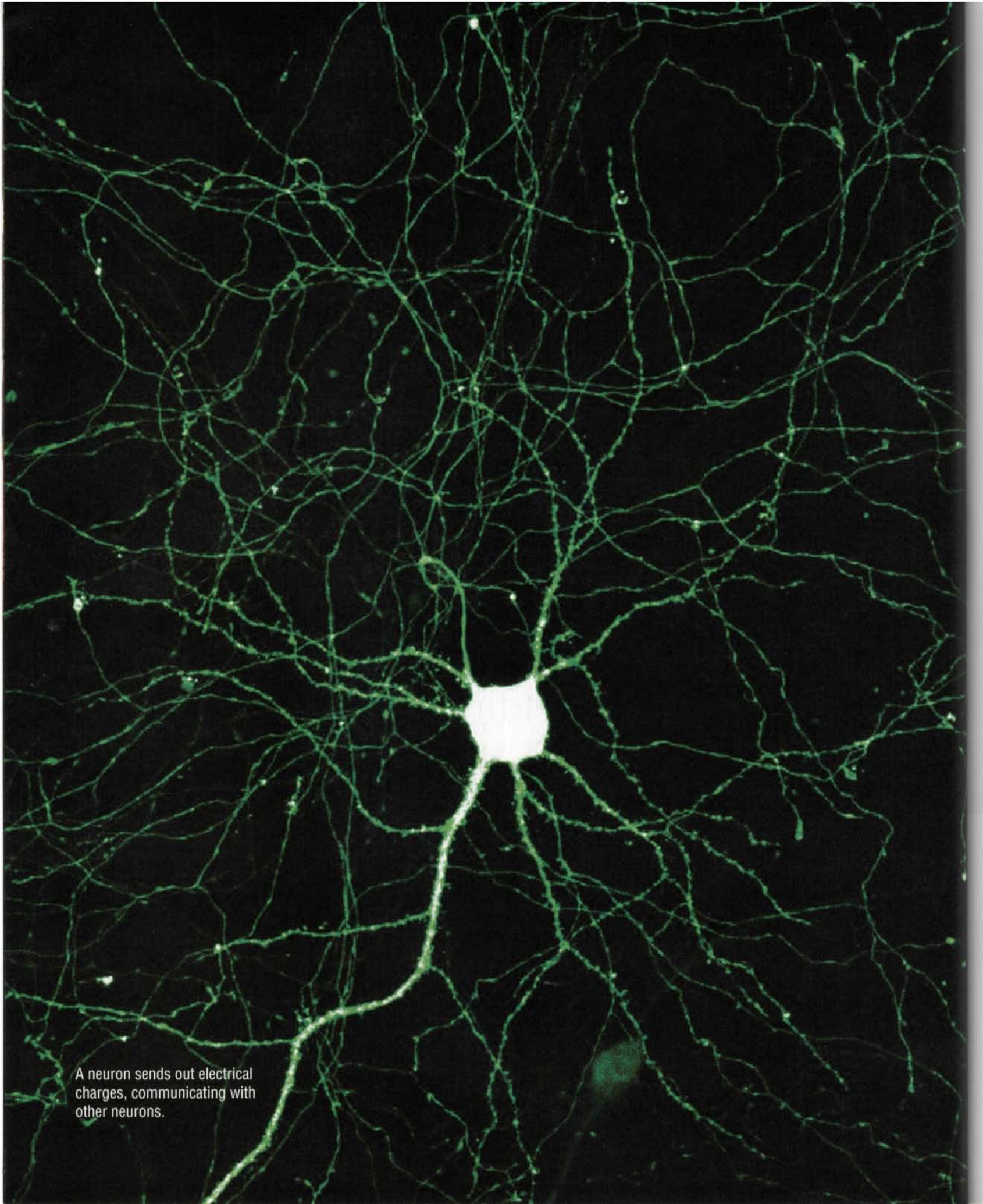
interface of technology and the nervous system.

The NeuroLab's director, associate professor Steve Potter, pulled from a shelf in his office a book that predicts humans soon will achieve immortality by uploading their existences onto computers. Potter was quick to call the idea implausible, though his main sticking point was the word "soon."

"It will be another century or two before we can record a person's identity on a computer," he said. "But it's not long before we give people new senses. And I don't mean just replacing lost senses, but giving people senses that are unnatural, like seeing in infrared. The imagination is the limit."

Building the Cyborg

In 1960, scientists Manfred Clynes and Nathan Kline coined the term cyborg in an article on the future of space travel. They



A neuron sends out electrical charges, communicating with other neurons.

“Figuring out how to seamlessly integrate external electronics to biology has profound implications for our collective quality of life in the future.”

— Ravi Bellamkonda

examined the possibility of creating a “cybernetic organism” designed to survive in extraterrestrial environments.

Scientists long have been using technology to compensate for injuries or disabilities. Crutches, eyeglasses, hearing aids and prosthetic limbs are just a few examples.

Only relatively recently, however, have researchers begun exploring what writer D.S. Halacy, in his 1965 book, *Cyborg*, called “the relationship between ‘inner space’ to ‘outer space’ — a bridge ... between mind and matter.” In other words, technology began diving beneath the skin.

Advances in that area have begun making significant impacts. Cochlear implants in the inner ear use electrical signals to allow deaf people to hear. Deep brain stimulation is used to treat Parkinson’s disease.

“Technology should ideally become an extension of who we are, augmenting our capabilities,” said professor Ravi Bellamkonda, also a member of the NeuroLab. “Figuring out how to seamlessly integrate external electronics to biology has profound implications for our collective quality of life in the future.”

That research area was named a top priority when the Department of Biomedical Engineering was formed in 1997, leading to the creation of the NeuroLab, a voluntary partnership of nine faculty members from biomedical engineering and electrical and computer engineering. The researchers share

space and graduate students, write joint grants and collaborate on ideas.

Members of the lab say partnership between faculty at Tech and at Emory University has been crucial to their early successes.

“It’s very challenging,” Garcia said. “But being able to work in an interdisciplinary environment will lead to significant developments more than if each group was working independently. We have access to all these world-class research groups, and Emory adds a strong dimension.”

Outside Looking In

Those who suffer from locked-in syndrome are conscious but unable to control any muscles. They cannot move their limbs or talk. Some cannot even blink.

Much of the focus in brain-technology interfacing is on people with such disabilities, to see if technology can allow the disabled once again to interact with the outside world.

Melody Moore Jackson, an associate professor in the College of Computing and director of the Center for BioInterface Research, dedicates much of her research to this effort.

Her research group uses infrared imaging, functional magnetic resonance imaging and other noninvasive technologies to “listen” as the neurons in the brain fire electrical charges across the cell membrane.

“The potential of implanted electrodes is higher, and it’s just astonishing,” Jackson said. “Those things will become more usable. Right now, we’re doing pretty well without opening up the head.”

In a healthy person, a certain pattern of neuron activity will stimulate the body to move in a certain way. Jackson said her research involves monitoring a disabled person’s brain as they imagine making that exact movement.

A major goal is to allow communication. Jackson flashes images on a screen and measures for brain activity that signals the person sees what they’re thinking about. Using that method, locked-in syndrome sufferers have 100 percent accuracy spelling out messages.

“It’s unbelievably satisfying to have someone who hasn’t been able to communicate finally tell their family that they love them,” Jackson said. “It’s amazing.”

Communication Breakdown

In *Star Wars: The Empire Strikes Back*, Luke Skywalker loses a hand only to have it quickly replaced with a cybernetic prosthetic. Such replacement limbs are becoming reality, with some robotic arms being deft enough to pluck a single grape from a bunch.

The key to perfectly integrating such prostheses will be linking them to the nervous system and brain. That challenge is the

You have to be open-minded, especially when things don't go right. Some of the biggest advances in science came from experiments that went wrong.

central focus of the NeuroLab.

One challenge to using implanted devices is that, over time, scar tissue and inflammation forms around the electrodes. That impedes the electrodes' ability to detect neurons firing and to stimulate the neurons.

The Bellamkonda and Garcia research groups are collaborating to better understand the molecular interaction between electrodes and neurons in the hope of designing new interfaces that don't irritate the brain cells.

Potter's group has begun studying optogenetics. Neurons can be engineered to respond to certain colors of light, and fiber-optic wire, which is more biocompatible, can be used to stimulate the cells.

Garcia's group is developing an electrode coating that cells don't react negatively to. Using the coatings in tandem with anti-inflammatory agents such as steroids has led to early successes. But Garcia predicts it will be another three years at least before they achieve significant improvements.

"We will get there," he said.

"The question will be the time frame."

Building Brains

Potter was a graduate student studying learning and memory and needed a test subject for research on neurons. He was considering worms or insects when he learned of



Courtesy NeuroLab

This implantable electrode is designed to interface with brain cells without causing scarring or inflammation.

neuron cell cultures grown in multielectrode arrays. The arrays essentially are petri dishes lined with electrodes, which can interact with the neurons growing in the dish. And because the neurons are on a flat surface, they can be seen with a microscope while still living and firing.

That discovery pulled Potter into in vitro neuroscience and led him to become one of the leading researchers in neuron cultures and multielectrode arrays. The arrays are connected to a computer with software to monitor the neurons' activity. Potter can send input back through the electrodes to stimulate the neurons.

One of the Potter group's first projects was to give the neurons a body in a virtual world.

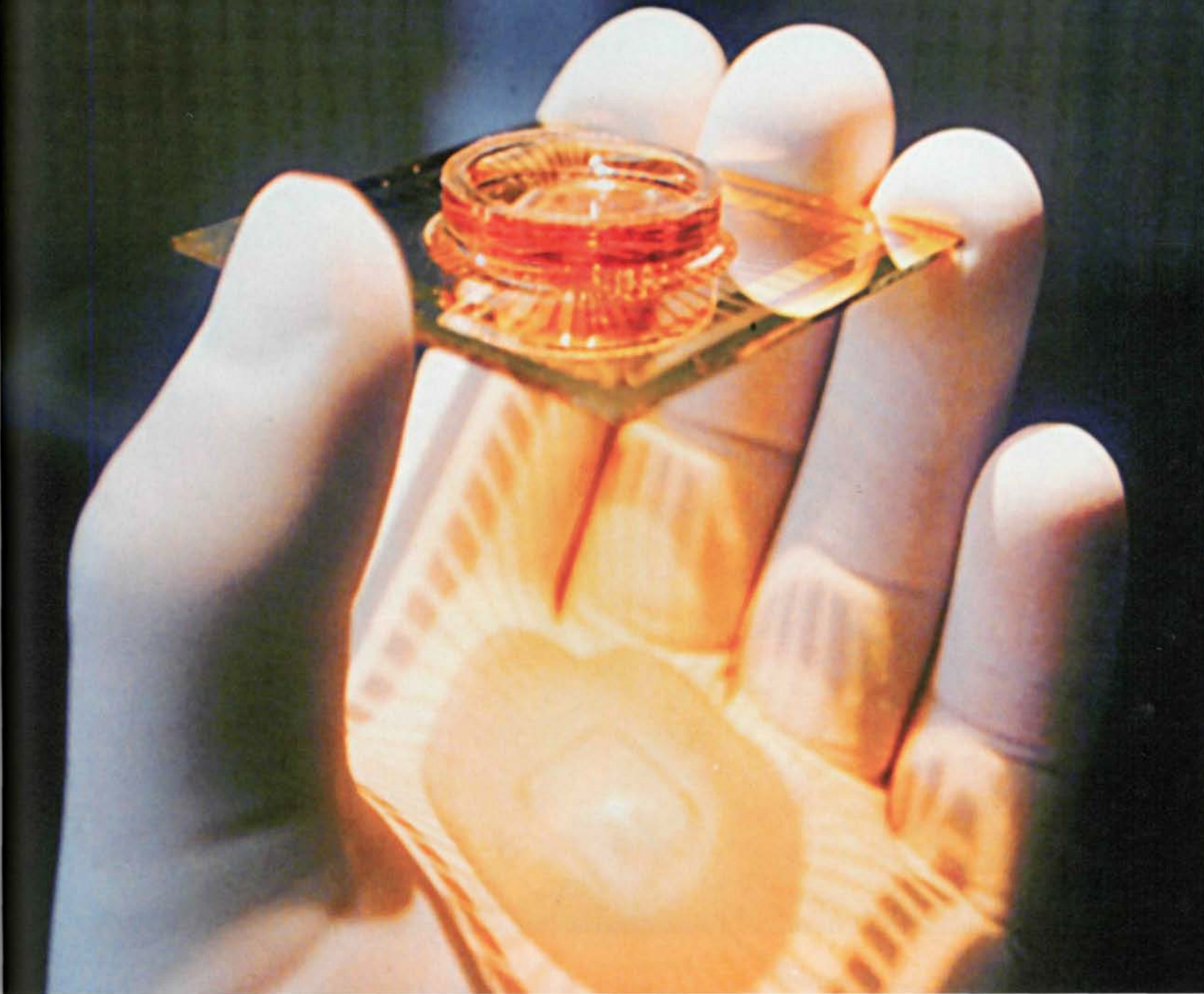
"At first it never did learn anything," Potter said. "There would be these bursts of activity, and we hypothesized that was because it was cut off from all input, and those bursts wiped out its memory."

The researchers limited the bursts by sending back a small amount of activity through the electrodes. Quickly, the neurons began learning. Before long, they could stimulate the neurons to move the virtual character in specific ways. It was the first time scientists had trained a neuron culture.

Now, the cultures are used in projects such as MEART, the "semi-living artist." The Potter group's

neuron cells communicate through the Internet with a robotic arm in Australia. The arm, equipped with felt markers, creates elaborate drawings based on how the cells are stimulated.

Beyond controlling robots, the group's discovery also led in an unexpected direc-



Courtesy NeuroLab

A multi-electrode array, when connected to a computer, allows researchers to listen to and stimulate cultures of neuron cells.

tion. They realized the bursts of activity in neurons might relate to epilepsy. Partnering with Robert Gross, an associate professor of neurosurgery at Emory, Potter's group is studying whether small amounts of feedback through electrodes could prevent such damaging bursts.

"You have to be open-minded, especially when things don't go right," Potter said. "Some of the biggest advances in science came from experiments that went wrong."

The lab is exploring other potential benefits of brain stimulation. Potter said it could be used to treat Alzheimer's disease,

addiction, overeating and depression. "Why wouldn't people do it if they can flip a switch and be not depressed?"

Another potential use for the neuron cultures is in artificial intelligence, Potter said. His group is partnering with power engineering researchers to utilize the cultures to teach artificial networks how to respond more quickly to power surges and outages.

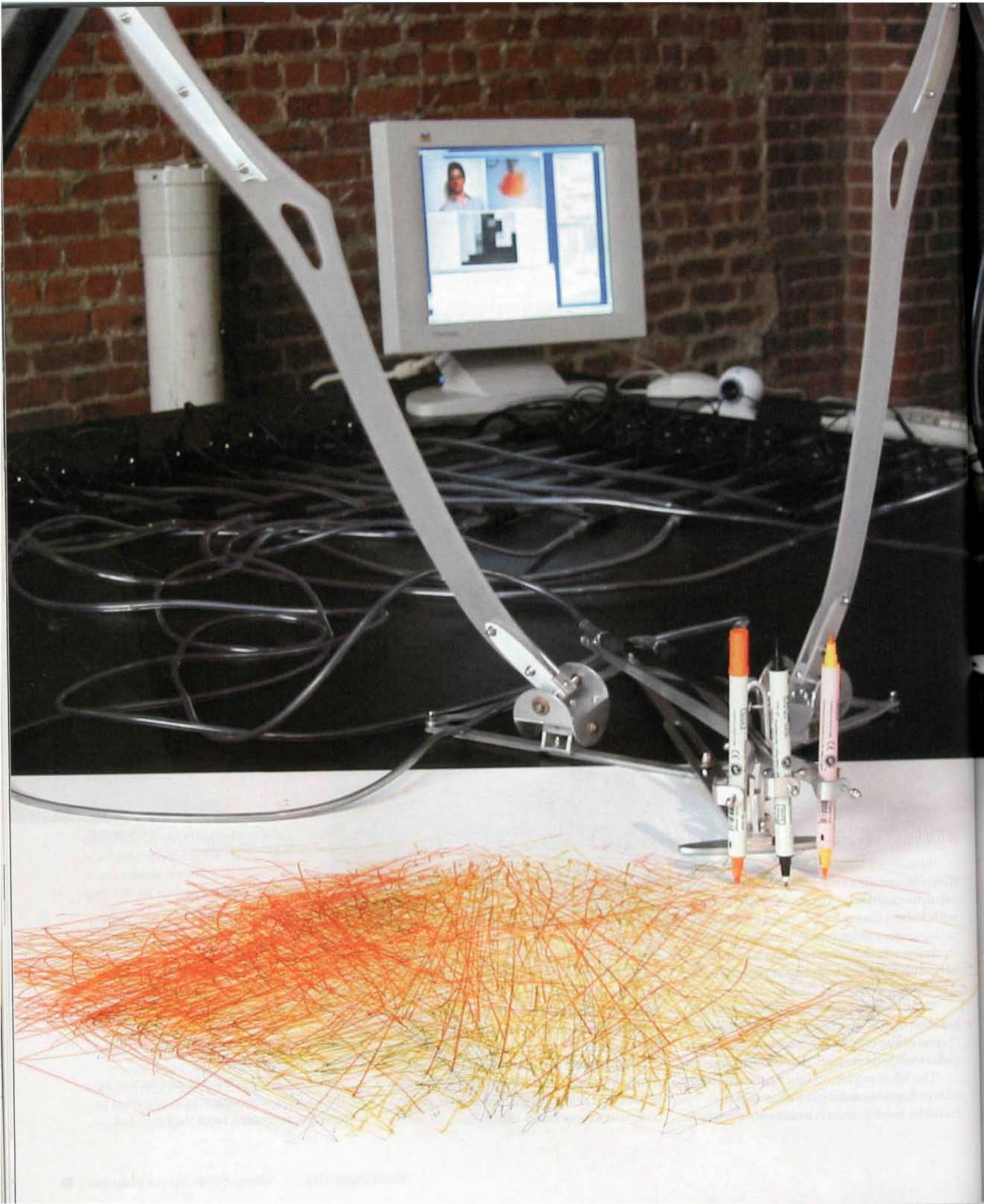
"We think they'll be better at real-time control because animals are great at that," he said. "That's a big-picture goal, to make computers more brain-like."

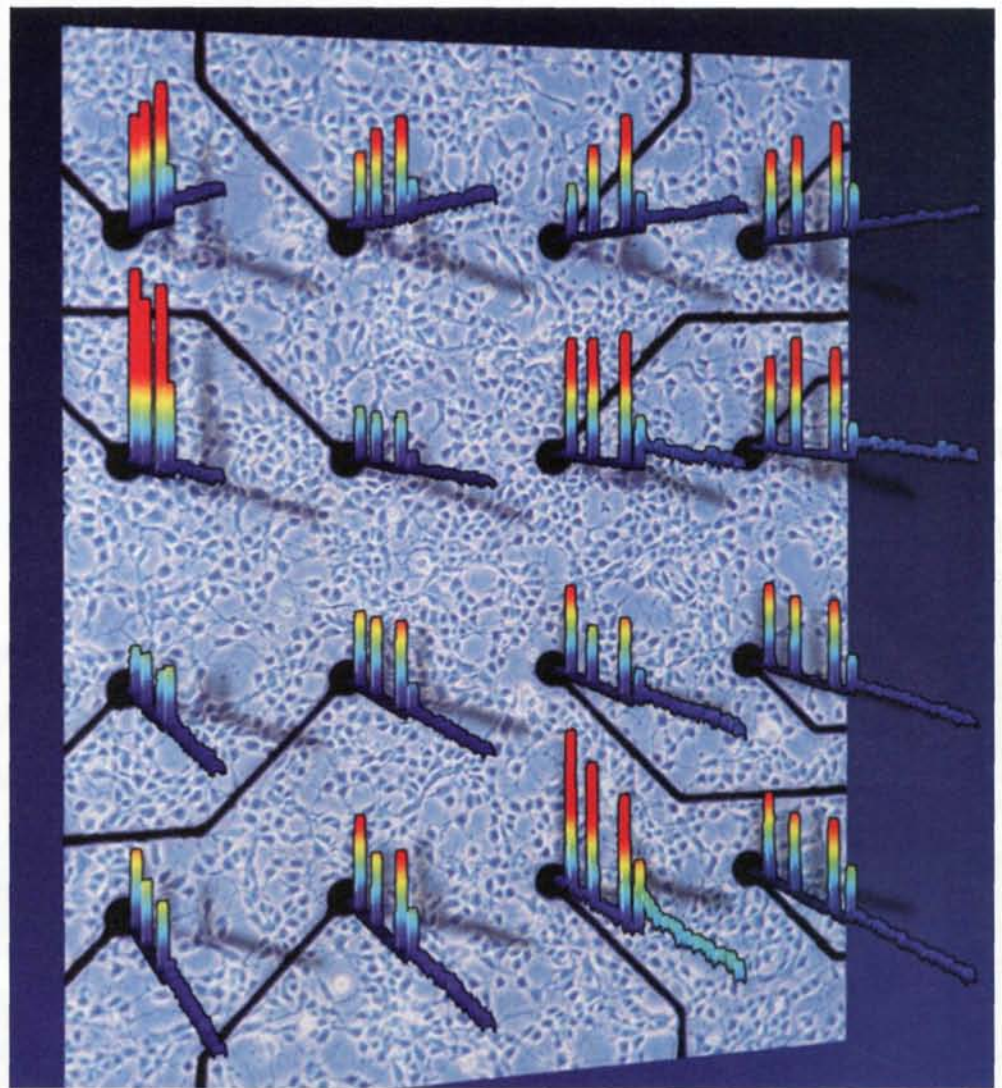
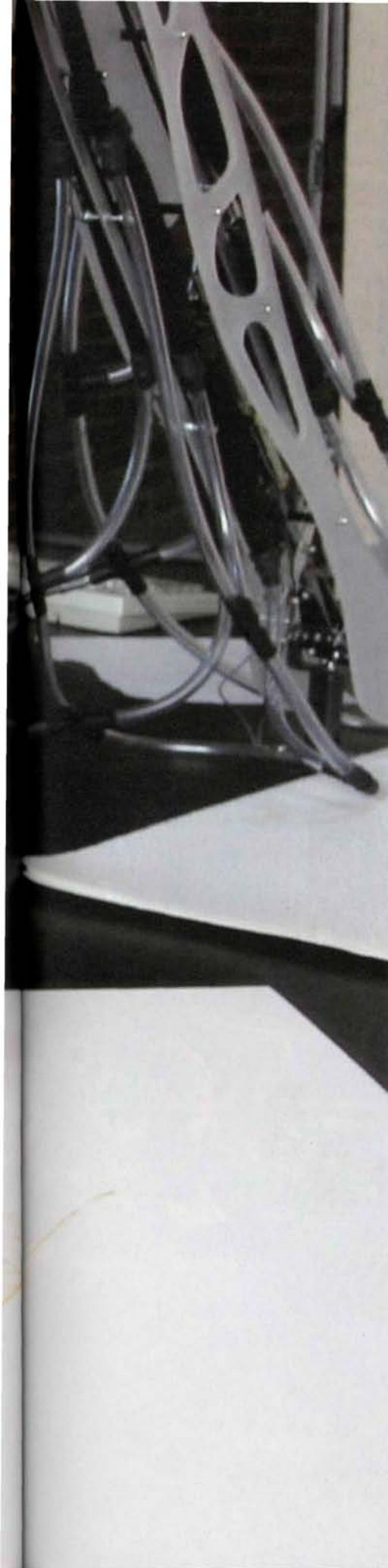
The Brain's Language

Looking at the development of robotic prosthetic limbs, Potter notices one glaring problem: They're numb.

"We focus so much on the six senses, but we don't value proprioception, which is the sense of where parts of the body are in relation to each other," he said. "You absolutely depend on this. People are very clumsy without it."

To develop robotic limbs as effective as Darth Vader's, researchers not only need to detect signals coming from the brain but





A robotic arm, at left, draws with instructions from a rat neuron culture. Above, a chart shows the electrical activity of a culture of neurons on a multi-electrode array.

also to send feedback from the limb to the brain.

When neurons don't receive feedback, they eventually slow or stop firing and the synaptic connections weaken. Potter's hypothesis is that neurons are like a person lost in a pitch-black room. If they shout for help for long enough without a response, they stop shouting entirely.

The critical issue, then, is learning how to send signals back into the brain. But Potter says scientists are still far from understanding the brain's language. Neurons fire every millisecond and may work collectively. In addition, glial cells are believed to transmit chemical signals, adding another layer of complexity.

If researchers were able to record data from just a portion of one human brain for a limited time it would fill every hard drive on Earth, Potter said.

"People are vastly underestimating how

complicated the brain is and how much information is between your ears," he said.

Increasing Interaction

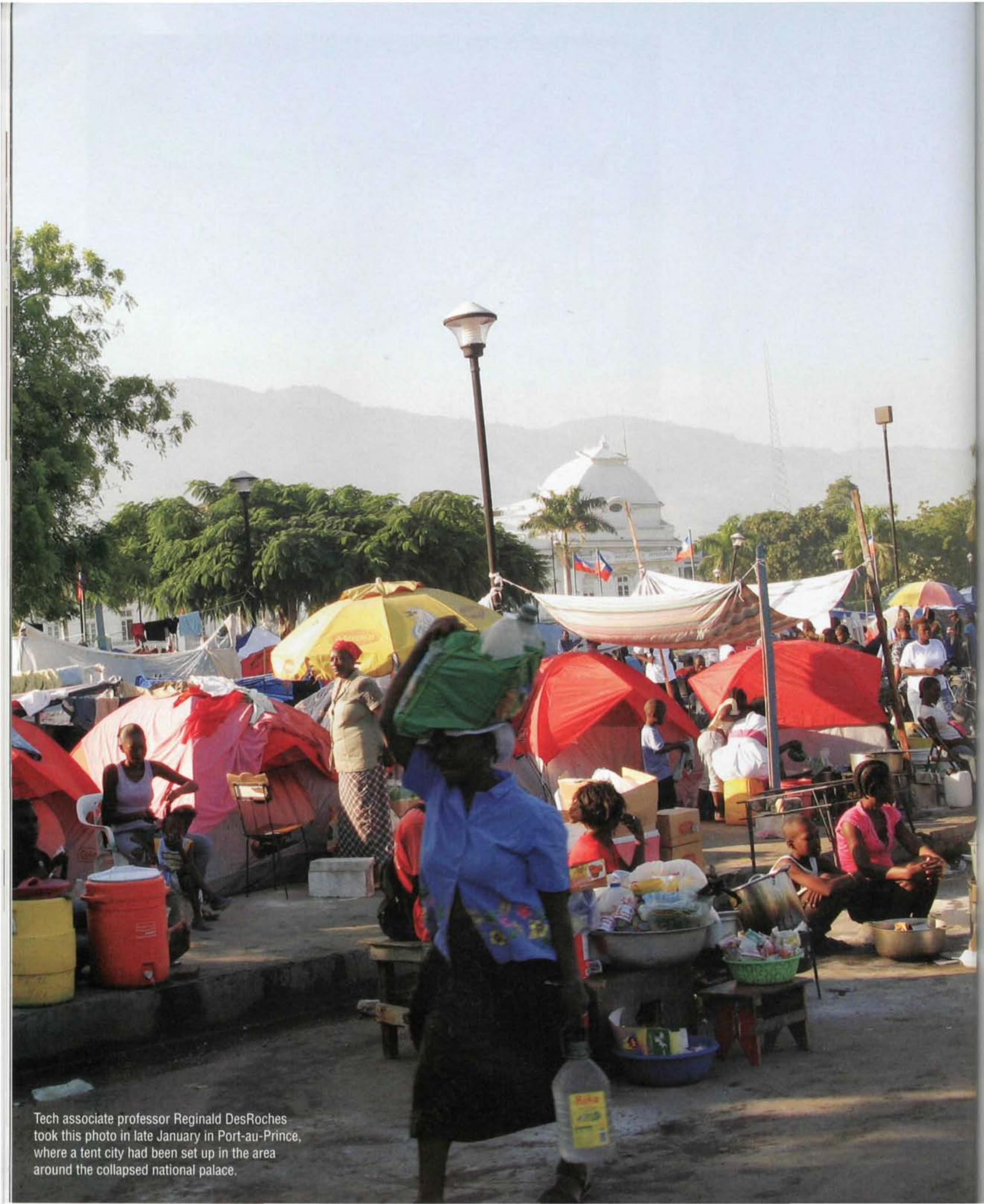
Even if a true fusion between biology and technology remains only in science fiction, members of the NeuroLab are convinced it is on the horizon.

Potter said he expects brain interfacing to expand beyond treating illnesses and disabilities. One possible use is to stimulate learning and limit forgetting, he said.

"Neuro-engineering is going to touch everybody," he said, "if not within five years, then within 10."

Garcia imagined a world of absolute integration between humanity and technology.

"For instance, you can have an outlet in your head to drive your car without a steering wheel," he said. "Certainly, that's farther in the future. But the progress is going that way."



Tech associate professor Reginald DesRoches took this photo in late January in Port-au-Prince, where a tent city had been set up in the area around the collapsed national palace.

Humanitarians at Heart

Alumni are making it their business to better the world

Graham Huff, ISyE 98, MS ISyE 05, was on a mission trip to Haiti through the First Presbyterian Church of Atlanta when the January earthquake struck. They felt the ground move on the island of La Gonave, located in the bay off Port-au-Prince. The group had been scheduled to stay at the Hotel Montana, where many Americans died, just two days later.

Five days after getting out of Haiti, Huff went back, arranging for and escorting a shipment of water treatment supplies directed to Deep Springs International in Leogane, where he then helped begin chlorine production.

He recently started his own nongovernmental organization, League of Hope, based in Atlanta. Huff's efforts in Haiti are recounted at leagueofhope.blogspot.com.

On Jan. 28, he wrote that he was excited about "organizing a partnership of hos-

pitals, doctors and suppliers of prostheses to help the estimated 100,000 that have had amputations as a result of the earthquake. This plan was hatched last night after a conversation with my friend, Ingrid Arnesen in Petionville, Haiti, who described walking through a clinic with human arms and legs lying all over the floor. If you want to join in the effort, please let me know" at wgrahamhuff@gmail.com.

As senior director of international programs for Habitat for Humanity International, **Tony Chan**, ISyE 94, MS Mgt 98, was focusing his efforts to provide aid for Haitians in the wake of the earthquake.

Chan said he developed "the supply chain strategies for our recovery effort in Haiti, including the shipping and distribution of the initial 10,000-plus emergency shelter kits" in February.

His job at Habitat for Humanity also

includes the development of global strategies and implementation plans for programs and operations serving more than 85 countries in Asia, Africa, Europe, Latin America and the Caribbean.

Tracy Hawkins' company also works in locales around the globe but has heightened its efforts in Haiti after the earthquake.

Hawkins, ISyE 85, calls herself a "humanitarian engineer." She is the vice president of FilterPure, a company that implements the manufacturing and distribution of ceramic water filters for home use. Production has been increased in the Dominican Republic for delivery to Haiti.

"My industrial engineering background has been key in helping me to support this humanitarian project because I have been exposed to so many sciences," Hawkins has said.

After a career working with hardware and software companies, **Ric Gray**, ISyE



Jeff Beech, kneeling second from the left, is helping a community in Kenya develop irrigation for farms. He is looking for volunteers to return with him in June.

87, saw the opportunity to apply such technologies in another area: disaster response. Gray joined Emergency Visions, which provides consulting and technological assistance on disaster preparation and response.

"The problem we saw after 9/11 was that collaboration among the entities that respond to disasters was virtually nonexistent," Gray said. "Emergency Visions set out to create a software solution that will help any organization that responds to disasters with preplanning and drill activities and collaborative response to disasters to help quickly and efficiently save lives and property."

The company played a more active role in the response to the earthquake in Haiti, sending in a search-and-rescue team that included a dog to detect the scent of living people trapped under rubble. Emergency



Following the earthquake, Graham Huff, left, escorted a shipment of water treatment supplies to Haiti to begin chlorine production.

Visions has since begun utilizing its software in the recovery.

"Our team was able to get in country quickly, enabling them to save lives and make a positive impact," Gray said. "The stories and details from our team's daily

debriefs were at the same time heart wrenching and heartwarming."

Many Georgia Tech alumni have been inspired to devote their lives to making a positive impact around the globe.

During his latest trip to Nakuru, Kenya, in January, **Jeff Beech**, Mgt 87, took a group of 44 volunteers that included several doctors and nurses. Over several days, more than 3,000 patients came through a temporary clinic.

The Beech Foundation also has worked with a Presbyterian church group to help build an orphanage and school in Nakuru. The orphanage holds nearly 100 children and the school has 576 students, with both of those numbers growing steadily. In addition, the foundation works with a special-needs school run by the government.

To support the projects, the foundation

“*I can say this
has truly
changed my
outlook on
the world.*”

has partnered with Nakuru residents to create a system of wells and farms. A new greenhouse produces one of the largest tomato crops in the country.

A mission trip to Chinandega, Nicaragua, in 1998 inspired **John Bland**, MgtSci 83, to walk away from the software company he co-founded to create Amigos for Christ a year later and serve as its executive director.

The Buford, Ga.-based nonprofit (amigosforchrist.org) continues to lead mission trips to Chinandega, where it works on water, sanitation, education, health care, community development and infrastructure problems. It also launched Bead Amigas, which helps Nicaraguan women generate income by selling jewelry they have handcrafted from recycled paper.

Currently, Georgia Tech senior mechanical engineering students are working with Amigos for Christ on the design of water pumping systems.

Jose Montero, ISyE 95, is chair and president of Trekking for Kids, which he founded with his sister. Since 2005, the nonprofit has been organizing purpose-driven treks in the world's most remote locations to raise funds for orphanages in the areas they visit.

Each trekker commits to raising a preset financial contribution for each kilometer walked. Donations from all trip participants are pooled together and used in their entirety to help the orphanage.

Based in Washington, D.C., Trekking for Kids' 14-member management team is scattered throughout the United States, Europe



The children of Chinandega, Nicaragua, are at the heart of the work of the nonprofit Amigos for Christ.

and Latin America. The organization's motto is "Improving Today, Securing Tomorrow ... One Step at a Time."

Georgia Tech alumni, students and faculty have been working with the nonprofit Health in Harmony (healthinharmony.org) for more than a year to design a hospital for a small village on the west coast of Borneo. Construction is scheduled to begin this summer.

"I can say this has truly changed my outlook on the world," said team member **Sarah Hilton**, IE 08, MS HS 09.

Studio instructor **Arief Setiawan**, PhD Arch 09, wrote a paper on the hospital design project in which he explained that an interdisciplinary team of graduate students from the College of Architecture and Health

Systems Institute "were presented with a remarkable opportunity to bring quality health care to the impoverished region of West Kalimantan, Indonesia."

Setiawan said the "project would not have been possible without ... the vision and passion of Al and Lola Pierce. Al and Lola were the catalysts for the project." **Al Pierce** graduated from Tech with an architecture degree in 1958.

Georgia Tech's worldwide outreach also has had a major impact on the Peace Corps. In February, the Institute was ranked 21st among all U.S. volunteer-producing schools, with 22 alumni currently serving around the globe. Since the Peace Corps was founded in 1961, 234 Georgia Tech alumni have served in its ranks.



Hunger Fighter

Amit Roy arms farmers with fertilizer

By Kimberly Link-Wills

Amit Roy was smiling on a cover of Alabama-based *Thicket* magazine last summer next to a headline proclaiming: "This Man Could End World Hunger."

An article in *India Abroad* in January said Roy's "contributions toward helping alleviate world hunger and poverty by improving sustainable agricultural productivity in the developing world are immense."

Yet, this man quietly fighting the war on

hunger usually doesn't make front-page news. His barracks are off the beaten track in Muscle Shoals, Ala., where his ammunition for the fight — fertilizer — is developed. In fact, more than 70 percent of all fertilizers available in the world today were developed there.

For some 220 days a year, Roy, MS ChE 71, PhD ChE 76, is in the trenches in some of the hungriest places on Earth as president and CEO of the International Fertilizer Development Center.

"Synthetic fertilizers have been credited

with keeping alive almost half the people on Earth," Roy said. "The entire research related to fertilizers was done in Muscle Shoals, Alabama, by the Tennessee Valley Authority starting after the second World War. At the world summit in Rome in 1974, the United States government, the Canadians and Australians said this know-how will be made available to developing countries so that they can produce their own requirements for food, fiber and feed. And that was the beginning of it."

In 1977, President Jimmy Carter, Cls 46,



“

Coming up with new varieties of seed and management to cope with climate changes is going to be the next challenge, not only for the United States but all over the world.”

transformed IFDC from a private, nonprofit entity to a public international organization, which allows it the same immunities and privileges as the World Bank and United Nations. Researchers from around the globe are able to work in the Muscle Shoals labs on tax-free diplomatic visas.

“Now we get funding from many, many countries and multilateral agencies. Our focus still remains fertilizer, but it has expanded into how to improve soil productivity, cope with the changing scenario in terms of diet, policies and environment and advise governments in developing countries,” Roy said.

The IFDC operates with a \$60 million budget and 700 employees in 22 offices around the world. But it was in his native India where Roy first witnessed the effects of hunger.

“The shortage of food was a primary issue for many people, and I became very interested in the whole issue of food production,” said Roy, who earned his undergraduate degree at the India Institute of Technology.

He learned about IFDC while researching fertilizers at Georgia Tech and joined the organization in 1978. Promoted to president in 1992, Roy now also is the father of a Tech alumnus, Auroop Roy, BME 08.

While research is still conducted in Muscle Shoals, the IFDC this year launched a virtual lab to connect the best minds around the world.

“The challenge going forward will be how to produce plant-responsive fertilizers and use them in an efficient way without degrading the environment,” Roy said. “We have launched a research initiative for the next generation of fertilizers, which will be



A Bangladeshi farmer inserts urea briquettes into a rice paddy. The placement method helps increase yields while using less fertilizer.

less fossil fuel dependent. It will require global intellect, people working around the world to come together to find a solution.”

Education constitutes a large part of the work that takes Roy around the globe, including more than half a dozen trips annually to Africa, “which is a vast continent with enormous challenges yet huge potential,” he said.

“The whole idea is how to improve production on existing land,” Roy said. “What is happening in Africa particularly is a significant amount of what we call slash-and-burn technology. If you don’t teach the farmers to farm on the existing land, essentially they’re going to go to new land, they’re going to cut down the trees, burn the trees down, get all the nutrients out by farming two or three years, then go to a new area.”

Roy makes frequent trips to Bangladesh and already this year has traveled to the densely populated country of 145 million people to meet with government officials.

“The main cereal crop that the Bangladeshis eat is rice. Rice requires a significant amount of nitrogen fertilizers for its growth. It’s very difficult for the plants to naturally capture nitrogen from the air, so you have to produce synthetic nitrogen and feed it to them. The fertilizer that is most commonly used for the production of rice is called urea, a chemical compound that is produced by converting ammonia combined with carbon dioxide. One metric ton of urea requires an energy equivalent to four barrels of oil,” he said.

“The problem with urea is it is highly soluble, it breaks down in soil very rapidly. When the

farmers apply three bags of urea, only one bag is effective, two bags are lost. This is a huge economic loss and an environmental problem. We now have a technology where you can take urea and make it into large granules and place it under the soil and it can double the efficiency.

“There are about 1.6 million hectares of land in Bangladesh that are under this technology, and the farmers are using 40 percent less urea. They’re still getting 20 percent more product out of their soil so the government is very excited,” said Roy, who is helping spread the adoption of urea granules throughout Bangladesh as well as Africa.

“When you go to the poorer countries, whether it’s in Asia or Africa, and you see the starvation, particularly the children, who from morning till evening when they

go to bed they're looking for food, it certainly is a very sobering experience. It makes you get up and gives you the ambition to solve these problems."

He said issues of food production and access to food are moving to the forefront.

"Coming up with new varieties of seed and management to cope with climate changes is going to be the next challenge, not only for the United States but all over the world," Roy said.

Add alternative fuels to the list.

"The United States still exports quite a bit of cereals, but over the last three years, quite a lot of the surplus, of corn particularly, has been diverted to biofuel. So the issue becomes a double-edged sword. On one side you are coping with the high price for oil by taking food crops like corn and converting that into biofuel. Then the price of food goes up," he said.

"One hectare of corn that is produced in Africa can feed a person for nearly one year. But the same corn, if it was converted to biofuel, can probably give you one or one and a half tanks of gasoline for a big SUV. Those are the debates that are going on right now in the development community. How much of the food crop can you divert for biofuel?"

Internationally over the last couple of years, prices of food, energy and fertilizers have shot up, according to the IFDC, and added 115 million people to the 800 million already living in extreme poverty around the globe.

Roy remembers the work of Norman Borlaug, who won a Nobel Peace Prize for introducing high-yielding varieties of wheat to India and Pakistan in the 1960s, for inspiration. Borlaug served on the IFDC board for a decade, and he and Roy spoke often. Borlaug died in September.

"Certainly he has left a lasting impression in terms of what is possible. He was probably credited for saving more lives than anybody else," Roy said. "Yet he was a humble man. He was a man who could go out to the fields to talk to the farmers one day and the next day be interacting with the heads of state."

That sounds very much like Roy himself.



Humanitarians at Heart



Computing for Good

Class projects make a difference in the real world

By Van Jensen

In a recent editorial in the *Atlanta Journal-Constitution*, Tech computing professor Santosh Vempala pointed out that while computing has been the defining scientific development of this period of history, people often associate it with business, social networking and entertainment.

"What I find to be just as compelling, challenging and of the utmost importance is applying technology beyond its current confines to where it impacts society in fundamental ways," he wrote.

It was that idea that Vempala carried into a computing faculty retreat three years ago. During an open-ended discussion he asked, "Why not do more?"

Building on the College of Computing's history of socially beneficial computing projects, Vempala envisioned formalizing the effort, involving students and focusing on making a direct impact.

To that end, he partnered with computer science professor Ellen Zegura and Michael Best, a joint professor of computing and international affairs, to create the Computing for Good class, first offered in the spring of 2008 with 17 students. There was no reading or tests. Instead, the students formed teams to tackle various social, political and health problems and search for computing solutions.

"We decided to look at the really big problems of our society, wherever they are," Vempala said.

The first projects looked at issues in Georgia and others in Africa and elsewhere around the globe. The problems were widely varied, as were the solutions.

Among them were an online blood-safety monitoring system for the Centers for Disease Control and Prevention to use in 14 African countries, a system to organize homeless shelters, an online learning tool for summer and after-school programs for children in low-income Atlanta neighborhoods and a tent to record video testimonies of victims of atrocities in Liberia.

"It's theory and execution together," Vempala said. "The goal was to deliver something. We figured that students would end up learning in the process. And I think it worked. Solving some of these problems required totally new ideas."

The blood-safety system is already being tested by the CDC, which previously had only paper records in its labs in Africa, Vempala said. By bringing the data together online, CDC researchers can study trends and test the efficacy of HIV/AIDS programs.

For the United Way in Atlanta, the homeless shelter tracking program also replaced paper records. Previously, shelter workers had to dig through paperwork and make a flurry of phone calls to find open space for homeless people seeking a shelter. Now, they can find that information instantly with the computer program. They also can call up a person's case history and track how many people successfully "graduate" to more permanent housing.

"There are clear needs, and then there are resources," Vempala said. "Connecting these efficiently, that is a major problem. And it fits squarely into computer science."

This year's class has developed another set of solutions. One project tackles the challenge of communications in the wake of a disaster. Situations such as those in Haiti

after the earthquake are so unstable that, often, communications infrastructure is fractured, Vempala said.

The team's solution was as simple as a strand of computer code. By uploading the code onto computers and other simple personal devices, users will be able to connect with each other, creating an ad hoc network. The benefit is that, even if one user then loses access, the network remains connected.

Ashwin Paranjpe, CS 09, worked on the project and said the communications problem required the class to think of a flexible, low-cost answer instead of an expensive development of hardware or software.

Currently the project, called MyMANET, is being developed into a nonprofit venture.

"It was one of the most comprehensive software projects I have worked on to date," Paranjpe said. "We worked on this project to do something good for society. Such a motivation is quite different, and it was surprisingly much more powerful than working just to get good grades or develop personal skills or make money."

"At the end of the class, we had built a simple solution to a very complex problem. It has made me realize we have the power to apply technology to crucial societal problems."

Since graduating, Paranjpe has started working for an online security company, but in his free time he continues looking for opportunities to compute for good.

Vempala has seen that impact on the students who come through the class. "It was clear they drew something that would stay with them the rest of their lives."

What's next on his slate of projects to tackle? No less than world peace. "We have to figure out how to do it."

Cinéma Vérité

Businessman-turned-documentarian
Jim Butterworth makes movies with a message

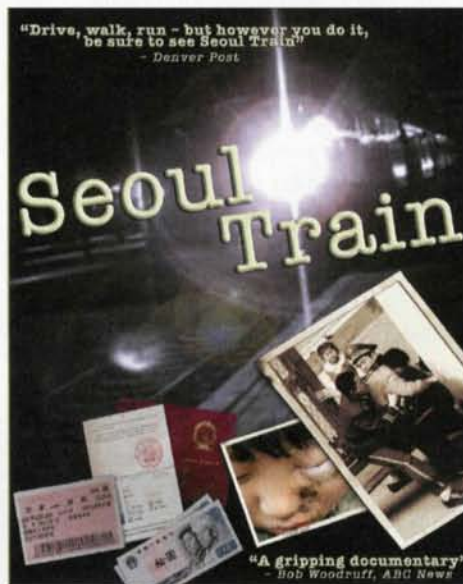
By Leslie Overman

Amid the media coverage following the March 2009 arrest by North Korea of journalists Laura Ling and Euna Lee, who were caught filming near the country's border with China, Jim Butterworth, IE 84, appeared on an episode of *Anderson Cooper 360*.

As Butterworth described his experience visiting that same border in 2003, video footage of a gun-toting North Korean army patrol flashed across the screen. Butterworth didn't appear in that video. He had been holding the camera, secretly shooting material for a documentary he directed, produced and screened on TV and at theaters across the world in a nearly three-year leave of absence from his business career.

Seoul Train, Butterworth's first venture into filmmaking, follows the treacherous journey of North Korean refugees and the undercover activists of the Underground Railroad who risk their lives to smuggle them through China, a country that does not recognize them as refugees, to safety in Mongolia and South Korea.

In the opening scenes of the film, rare footage from inside North Korea is shown, horrifying images of the devastation of a



country ravaged by years of famine. In one scene, two men stand knee-deep in the river and pull the limp body of a dead child out of the water. In another, a man pulls off his shirt, baring bruised, mutilated skin for the camera.

Butterworth doesn't think of himself as a journalist. Yet in 2007, *Seoul Train* was a winner of the Alfred I. duPont Award, presented by Columbia University's School of Journalism to the best in television and

radio journalism and considered to be a broadcasting equivalent of the Pulitzer Prize.

This past year Butterworth teamed up with another award-winning documentary film producer to launch Naked Edge Films, a production company dedicated to helping documentary filmmakers fund, produce and market films about pressing social issues around the world.

When Butterworth spoke to the ALUMNI MAGAZINE in mid-January, he was busy preparing for the Sundance premiere of *To Catch a Dollar: Muhammad Yunus Banks on America*. The film chronicles the work of Nobel Prize-winning economist Yunus to establish the first U.S. branch of Grameen Bank, an unconventional banking system he first developed in rural Bangladesh to make banking services available to poor women.

Butterworth said it's the first of seven films Naked Edge has slated for release this year. In March, the company will premiere *War Don Don*, which follows the court trial of Issa Sesay, a former child soldier in the Revolutionary United Front who eventually took over as leader of the rebel force in Sierra Leone.

"He went to the government and laid down his arms and surrendered the RUF and brought peace to one of the bloodiest

"SEOUL TRAIN" 7 •



“Our focus is all about telling stories that aren’t so black and white because life isn’t black and white, life is very gray.

We’re really looking for those films that are gray.”

conflicts in human history,” Butterworth said. “But guess what the government did? They arrested him and put him on trial as a war criminal. ... The central conflict is that he is probably guilty of a number of things that they accused him of. He’s also guilty of bringing peace to the country. And what do you do with a person like that?”

“Our focus is all about telling stories that aren’t so black and white,” Butterworth said, “because life isn’t black and white, life is very gray. We’re really looking for those films that are gray because it’s out of the gray that you get critical discussion. And that critical discussion is how we move forward as a society.”

Butterworth said he sees Naked Edge Films bringing attention to and having an impact on a number of critical issues around the world.

“The one lesson that I took from *Seoul Train* is the incredible effect a film can have on a crisis,” he said. “If we can do five, 10 films a year, we can have a meaningful effect on five to 10 crises a year.”

It was 9/11 that first incited Butterworth to seek out something to do for the greater good. He was living in New York City at the time, just a few blocks from the World Trade Center. Ashes wafted through the windows of his apartment.

“I remember a few days later sitting in my place watching PBS’ *Frontline*,” he recalled. “There was a piece that came on that really tried to explain why we were under attack, what Al Qaeda was all about and how this mess came to happen. I remember thinking, ‘Aha, I get it. I understand.’ They really took me into the mindset of those who attacked us. I was just blown away that a film, a documentary,



The documentary *Seoul Train* follows North Korean refugees as they try to make their way through China to safety in Mongolia and South Korea.

could do that in such a short period of time, while I was sitting there smelling the burning fires from the Trade Center.”

Fast-forward to July 2003. By then, Butterworth had left New York and the venture capital firm he started for the ski slopes of Vail, Colo. He and a friend, Lisa Sleeth, attended a presentation by a *New York Times* reporter assigned to the North Korea beat. Butterworth recalled pulling aside the writer following his speech. That’s when he and Sleeth learned about the North Korean crisis and the nearly 2 million citizens who already had died of starvation.

“We were just two people in Vail, and we thought, ‘Let’s make a documentary and tell the world about this.’ It was a completely dumb idea, neither of us ever having touched a camcorder before. ... My colleague was an ICU nurse in Vail. I have a business background. We thought, let’s just buy some cameras and some little spy cams, and let’s go over there and make this film. I think it was more ‘Jim and Lisa’s Big Adventure’ at that point, but then three

months later we were on a plane,” Butterworth said.

The novices spent those three months familiarizing themselves with filming equipment and studying episodes of *60 Minutes* to school themselves in interviewing skills and lighting techniques. They also got in contact with some of the Underground Railroad activists whom they later met in China. Butterworth and Sleeth earned the trust of those activists during the two months they spent filming in the region and came back to the states with some very precious cargo — additional video footage shot by activists and refugees themselves.

“Once they did that, the whole game changed,” Butterworth said. “We had this kind of solemn responsibility at that point to tell this story. And then from there, we had to do what we could to make this into a film that people would see.”

And people did see it. Since its premiere in November 2004, *Seoul Train* has been shown at hundreds of film festivals and community screenings, translated into about 20 languages and aired on television in about 25 countries and as part of PBS’ *Independent Lens* series.

Butterworth, who has an MBA from Dartmouth, turned his focus to his intellectual property and created Two-Way Media, the holding company for his numerous patents in audio- and video-streaming technologies for the Internet. He said his education and business background not only helped make *Seoul Train* possible financially but also helped him market the film and get it out to audiences.

“It’s like rolling out a new product. It’s a new business venture in and of itself. You

have to market and sell and promote your film, or no one's going to see it."

Butterworth stresses that the documentary film business is not about making money. It's about effecting change. It is hard to measure the effect *Seoul Train* has had on the crisis in North Korea, he said, but some strides have been made. For one, in 2004, the North Korean Human Rights Act was passed in Congress by a unanimous vote and signed into law by then-President George W. Bush.

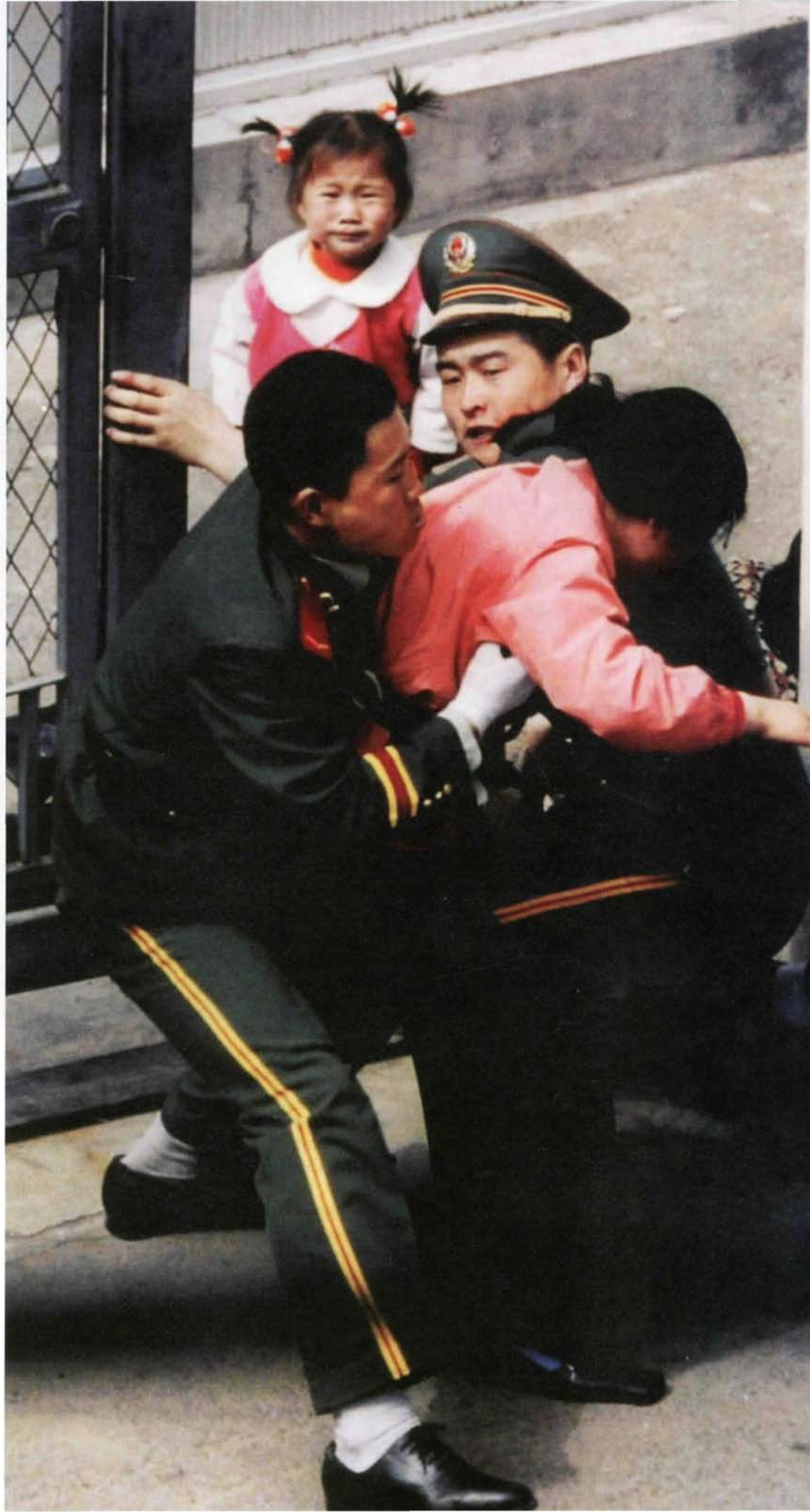
"Similar legislation has been passed in other countries," Butterworth said. "I'm not going to say that *Seoul Train* is responsible for it, but I will say *Seoul Train* was used to help educate those policymakers on what the issues were."

Outreach efforts for *Seoul Train* included screenings for the Department of Defense, Council on Foreign Relations and European Parliament. Bush, Donald Rumsfeld and Condoleezza Rice all received copies of the film, as did North Korean leader Kim Jong-il and China's vice foreign minister. Butterworth even toured college campuses and government organizations to speak on the subject.

More than five years after its release, *Seoul Train* still is used to educate people on the North Koreans' plight. Butterworth said a student-run charity dedicated to North Korean human rights regularly screens the film on college campuses to recruit new members. Just this past fall, it was shown at about 300 colleges.

Butterworth said there were a number of "pinch-me" moments in his three-year *Seoul Train* ride. Among them was a July 2005 screening of the film for the foreign correspondents club of Tokyo that was hosted by *The New York Times* reporter who first told him about the North Korean crisis.

"Right before the lights went down and the film went on, he leaned over to me and said, 'Jim, this film has dealt a real body blow to the crisis.' It took my air away for him to say that. It was such a journey, but exactly two years later, here I was sitting in Tokyo showing the film with him," Butterworth said. "I was just some guy who picked up a camcorder and filmed this story."



Supplying Aid

Julie Swann helps put people, programs in place

By Kimberly Link-Wills

Julie Swann helps train humanitarians. That is just part of her job as co-director of Georgia Tech's Center for Humanitarian Logistics, founded in 2007, and as an associate professor in the School of Industrial and Systems Engineering. Swann, ISyE 96, also is on loan through April at the Centers for Disease Control and Prevention as a senior science adviser working on pandemic vaccine distribution.

And she and her co-directors, Ozlem Ergun and Pinar Keskinocak, are organizing and hosting the second Health and Humanitarian Logistics Conference, which will bring nearly 200 students, faculty, government officials, military personnel and representatives from nongovernmental organizations and private industry worldwide to the Georgia Tech Research Institute on March 4-5 not only to address disaster response but also long-term issues like water and health (sci.gatech.edu/humlog2010).

Planning is a major part of humanitarian logistics.

"We work with a lot of organizations toward improving their efforts overall and thinking about some of these issues around forecasting — inventory, transportation, resource allocation. A lot of large organizations pre-position inventory worldwide so that they can respond very quickly in a specific area when there's a particular crisis," Swann said.

She fielded a lot of questions — from the media and the public — after the devastating January earthquake in Haiti.

"Everybody wants to do what they can

to help," she said. "People say, 'Tell me where to go, tell me what to send.' The best thing one can do is to give money and enable the large organizations to deliver the aid because we don't want to clog up that very limited system with things that are not needed or people who are not able to do the work that is needed."

Swann said the bottleneck of supplies at the Port-au-Prince airport was similar to what took place following the December 2004 Indian Ocean tsunami.

"In order to get food or other kinds of aid in to the people who need it, there's a whole system of things that has to happen. If there's a hole or collapse in one of those pieces, then you can't get things to where they need to be. That certainly happened at the airport. You had limited space for equipment, for unloading and getting things out the door. Everything was stopped at that point," she said.

"We're always looking at crises to see what we could have done better and what can be learned. Certainly that was true after [Hurricane Katrina in 2005]. There were failures at many levels. There were also issues around coordination — coordination among government organizations, private industry, NGOs," Swann said.

"It's always difficult to get people and organizations to focus on things before they occur. Maybe the event doesn't occur and they feel like they've wasted resources," she said. "Not only is it difficult to get them to focus on things before they happen, it's also difficult to get people and organizations to make investments in infrastructure and capacity building. It's something that NGOs struggle with all the time. How can we get money to build up the supply chain system

or network or technology so that we can have more effective aid when it comes time?

"Everybody wants their money to go toward providing food and water and medicine, which is good, but if improvements can be made in the infrastructure, then ultimately it improves the effort. But it's hard to motivate people for that."

The Center for Humanitarian Logistics is trying to provide that motivation.

"Our interest in work in this area predated the tsunami and Katrina. Those are events that people often think about. I think we'll ultimately put Haiti in that category as well in terms of visibility and how it's touched people and made them really focused on this area," Swann said.

She was interested in health policy before heading to Northwestern University for her graduate and doctoral degrees with a plan to return to Tech as a faculty member. "Even as an undergraduate at Georgia Tech I was looking and thinking about areas where policy and science and technology intersect.

"One of the advantages at Georgia Tech is that we have scale that very few other institutions have in the science, engineering and technology sectors. There are a number of universities that have one or two people working on something, and there are some that have centers on earthquakes. But in terms of the intersection of logistics with health or humanitarian areas, there are very few places that have what we have," Swann said.

"One of my passions is using what we know from science and technology and, in my case, mathematics, because that's what underlies a lot of industrial engineering, for positive social impact," she said. "One of



the things I'm really looking at right now is what should a public health supply chain look like if you want to meet a particular goal? What happens in health and humanitarian areas is often you don't have a centralized body that controls all of the decisions. How can we design the system so that it ultimately achieves what you want it to achieve?"

Swann said a colleague in the center and her students have developed an Excel-based tool for doctors and parents to keep track of what vaccinations a child has had and when and what he needs next.

"It's now been downloaded over 40,000 times. That's one that's had a very clear

impact that's tangible," she said. "It's really a complicated system. It takes a good bit of math running in the background to be able to solve that problem.

"In fact, many kinds of systems can be represented in a mathematical way. I've done some work with HIV that is related to my interest in mathematics and modeling to improve policy decisions. I've done some work with Hepatitis C, and we're looking preliminarily at measles as well," Swann said.

The work is never-ending.

She referenced a list that a Nobel laureate, the late Richard Smalley, compiled in 2003 of the top 10 problems facing humani-

ty over the next 50 years: energy, water, food, environment, poverty, terrorism and war, disease, education, democracy and population.

"In the foreseeable future it's unlikely the problems will be completely solved. That said, I think there have been inroads in the decades past that we've made. Just take one small example: Antibiotics have reduced infections in many places, and that was a real game changer," Swann said.

"I think that although the task is daunting and challenging, we can chip away at it. Sometimes we make small chips and sometimes we make bigger cracks in it, but we can make improvements."



'From Sadness and Despair to Optimism and Hope'

Professor returns to native Haiti to aid recovery

By Reginald DesRoches

As I board the plane bound for home on Jan. 28, I reflect back on the past seven days in Haiti. Despite having only lived in Haiti for the first 18 months of my life, I felt a longing to return to my birthplace and a strong obligation to do whatever I could do to help the people of Haiti.

The flight from Santo Domingo to Port-au-Prince provided my first childhood memory of Haiti. My parents would frequently tell me about Haiti's large mountains, rolling hills, steep valleys and dark blue lakes. From the sky, I could see that my parents did not exaggerate. It was true that Haiti was stunningly beautiful. However, as we approached the flatlands near the airport in Port-au-Prince, reality set in as more and more collapsed buildings came into view.

Our group of 10 engineers was requested by the United Nations to assist in assessing critical buildings that were damaged in the earthquake. The extent of damage and losses from the magnitude 7.0 earthquake on Jan. 12 are incalculable. The national palace and 13 out of 15 government buildings lay in ruins. The Roman Catholic cathedral, virtually all of downtown's historic buildings, countless schools, banks, hotels



Tech associate professor Reginald DesRoches speaks with CNN reporter Christiane Amanpour in Haiti.

and churches are collapsed or significantly damaged. More than 1 million Haitians remained homeless at the end of January.

After receiving a list of critical buildings from the U.N., we headed out to begin the

assessments. The severity and extent of damage was unfathomable. All the things I had seen on the news did not prepare me for the reality of what had happened in Haiti. In addition to the large population of

While assessing a heavily damaged historic building near downtown, we were told that the adjacent pile of rubble had been an elementary school where more than 30 children had perished.



damaged structures, the roads were filled with debris and trash, and people everywhere were living in makeshift tents.

Over the next six days, I would experience a range of emotions from sadness and despair to optimism and hope. What is most striking about this disaster is the sheer number of people that were impacted. Everyone we spoke to during the week had lost a family member or relative and many had lost their homes.

Our team assessed more than 117 buildings, including schools, orphanages, hospitals, food warehouses and homes. While this is only a small percentage of the buildings impacted by the earthquake in Haiti, our team was able to work with government officials and business owners to reoccupy nearly a dozen hospitals, an orphanage, four schools and several homes



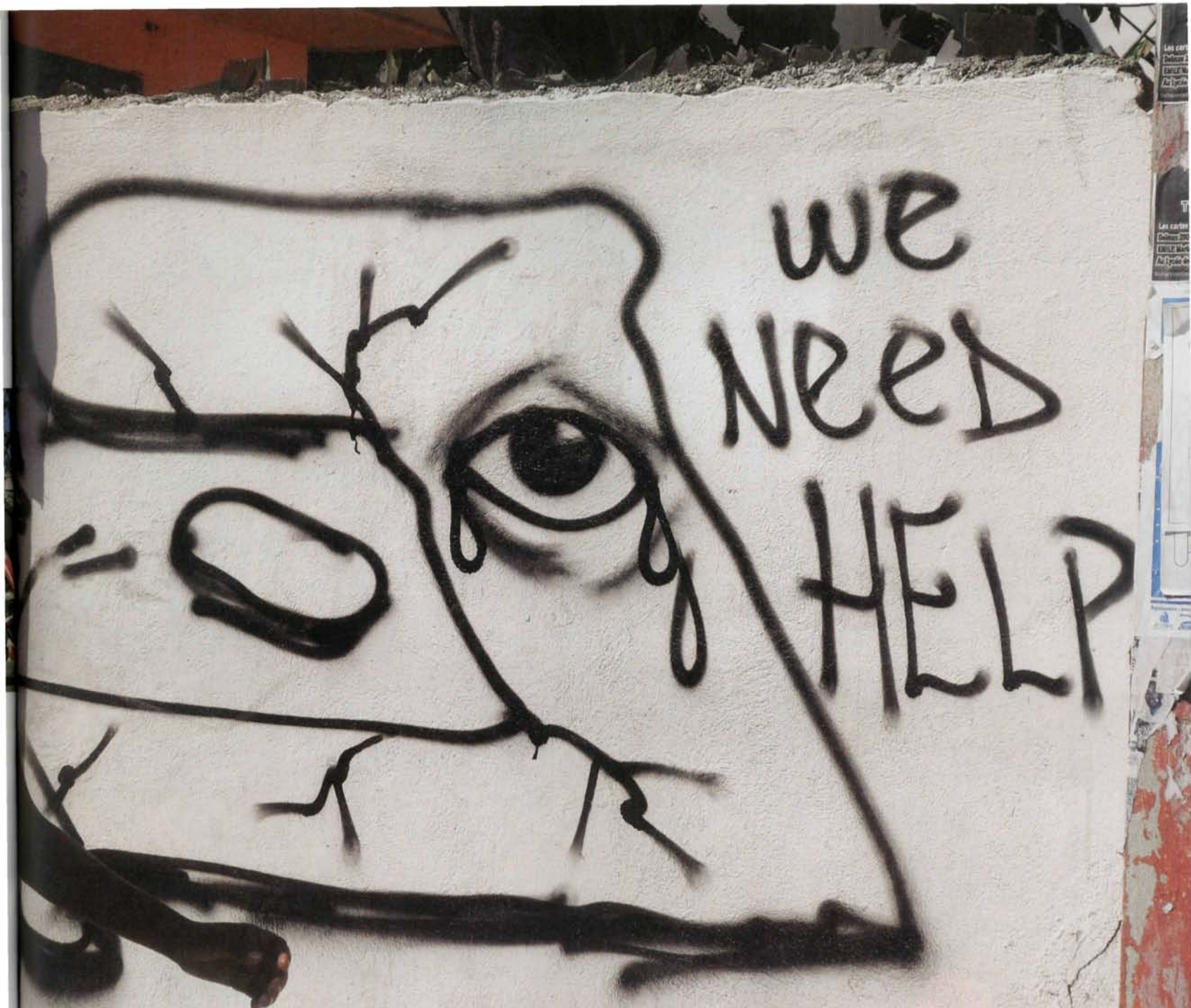
that we determined to be safe. We also worked closely with the World Food Program to assist in the reopening of three food distribution warehouses that had been closed since the earthquake. Together, these warehouses stored more than 5 million pounds of food.

There were many things during the assessments that were hard for me to deal with, both personally and professionally. While assessing a heavily damaged historic building near downtown, we were told that the adjacent pile of rubble had been an elementary school where more than 30 children had perished. Their bodies remained entombed in the collapsed building. As a parent of three young children, this was by far the most difficult part of the trip.

While driving through downtown Port-au-Prince on my final day, the reality of the situation hit hard. The downtown area was one of

the hardest hit areas in Port-au-Prince, with more than 75 percent of the structures collapsed or significantly damaged. As our driver Jose was passing through the city, he made the comment to us, "Our city is gone forever; we no longer have a country."

Despite the significant challenges facing



Photos by Reginald DesRoches

Haiti, I am hopeful that Haiti will come out of this better and stronger. Haitians must seize the opportunity to make changes that will set them on the right path. Safe roads, better buildings, clean water and reliable power are not just absolute necessities but tangible realities to create a new Haiti.

As a Haitian-American, I am proud of the overwhelming support that my fellow Americans — and the world — provided to Haiti in the days following the event. I am inspired by the many volunteers who traveled from all parts of the world to help the people of Haiti — doctors working 16-plus hours a day caring for the critically injured

and search-and-rescue teams working around the clock looking for survivors in unstable buildings, even 15 days after the earthquake.

I am proud of the strength of the Haitian people as they try to put back the pieces of their shattered lives. Children are banding together to remove debris from the streets, despite having few tools to work with. In the makeshift tent cities, people are setting up schools, churches and restaurants. Haitians, famous for their unique artistry, are once again starting to practice their crafts. The logo on the Haitian flag reads “L’union fait la force,” which trans-

lates to “Strength through unity.” The motto truly is being practiced in Haiti.

My first trip to Haiti in more than 27 years has left a lasting impression on me. While I hope to return many times in the upcoming years to assist in the recovery and rebuilding, I look forward to the day when I can visit Haiti with my parents, their children and grandchildren. I dream that this Haiti will be more beautiful, just and prosperous than anyone could imagine.

Reginald DesRoches, a Tech associate professor of civil and environmental engineering, researches ways to limit earthquake damage.



★★★★★ General ★★★★★ KNOWLEDGE

Students test Petraeus' military and mental mettle during campus 'conversation' with commander

By Kimberly Link-Wills

Students who filled the reserved Ferst theater orchestra seats filed to microphones to pose questions about Afghanistan, Iraq and war itself to Gen. David H. Petraeus, armed on stage with PowerPoint graphs, charts and maps.

Petraeus, named commander of the U.S. Central Command in October 2008 after more than a year and a half as the commanding general of the Multi-National Force-Iraq, spoke at Tech on Jan. 19, after a lunch engagement with the Atlanta Press Club.

One student quoted Gen. Douglas MacArthur, who said, "In war, there is no substitute for victory."

Petraeus immediately responded that the bulk of Gen. MacArthur's military career had taken place during World War II, "a war that you could actually seize a hill, plant the flag and go on to the next battle and ulti-

mately go home to a victory parade."

"I've often said that the endeavors in which we are engaged now are not those kinds of wars," he said. "There is no great hill that once you take it and plant your flag, you now control all that you survey."

Instead, U.S. military forces are applying pressure throughout the Al Qaeda network, Petraeus said.

"You can't just do the Whac-A-Mole. You can't whack in one place and have it pop up in another. You've got to whack it everywhere that you can find it. That's why we've built a network to take on a network," he said.

Earlier, Petraeus reminded his audience why U.S. forces are in Afghanistan.

"We are there for a very, very serious reason," he said. "That's because that's where the 9/11 attacks came from. They were planned in Kandahar, initial training was done in camps to the east in Afghanistan before they moved to Hamburg and to U.S. flight schools. So it was a com-

pletely direct link between Al Qaeda safe havens that existed in Afghanistan prior to 9/11 and the attacks that took place on 9/11. We have to make sure those cannot be established again."

There was an enormous reduction in violence in Afghanistan in late 2001 and in 2002, he said, followed each year by a gradual resurgence of the Taliban. And after a 2005 assessment, the general said he believed "Afghanistan was going to be the longest campaign of the long war."

Petraeus said that "one of the major objectives has to be to reverse that Taliban expansion to provide greater security for the people, to help develop the Afghan forces so they can partner with us ... and ultimately lead operations themselves so that we can indeed, as President Obama described, in the late summer of 2011 begin the transition of tasks to the Afghan forces ... and begin a responsible reduction of our forces there, something that I believe is possible."

Military forces are combating Al Qaeda

“I learned there are some seriously, seriously smart people in this world who hold very different views about some pretty important topics than I do.”

in Iraq with what Petraeus called the Anaconda Plan, which restricts access to weapons, foreign fighters, safe havens and money.

The plan also includes degrading “the support of the people through information operations campaigns. In this case we hung around their necks three labels: extremist ideology, indiscriminate violence and oppressive practices. Every time they blew up another group of innocent civilians, a mosque, a bridge, what have you, we would hang those around them again,” Petraeus said.

“What’s the message? Comprehensive. You’ve got to use everything,” he said. “We called it the Anaconda Plan because you’re putting pressure on the network in every respect possible. That’s obviously what we’ll try to do in Afghanistan as well.”

The general was asked to comment on a statement Sen. Joe Lieberman of Connecticut made in late December in which he said Yemen could be the source of “tomorrow’s war.”

“It’s a country that has a lot of the conditions that someone might say were sent from central casting for the establishment of terrorist networks and cells, even an insur-



Rob Felt

gency, if you will,” Petraeus said, adding later, “We’ve got to keep our eye on that ball as we keep a lot of other plates spinning throughout the Central Command and indeed throughout the world.”

Petraeus expanded his world by attending Princeton for master’s and doctoral degrees in international relations after graduating from West Point and the U.S. Army Command General Staff College.

“I learned there are some seriously, seri-

ously smart people in this world who hold very different views about some pretty important topics than I do,” Petraeus said, calling it a hugely valuable experience to learn not everyone lived as “we in the military live, and that is a somewhat cloistered existence with our nose to the grindstone.”

When addressing the timetable for withdrawing troops from Afghanistan, Petraeus said President Obama was sending two key messages in his West Point speech on Dec. 1.

“What he was conveying was on the one hand a message of increased commitment, resolve, resources, troops, civilians, money and so forth — we’re in this. On the other hand, though, was a message of urgency. ... We’ve got to get on with this,” Petraeus said.

“We have to recognize the reality that we’ve been at this since late 2001, early 2002, and there are various clocks out there. ... In this case, of course, you’ve got the Kabul clock, you’ve got the Washington clock and you have clocks in other capitals as well, given the significant coalition force that is there.

“Everyone needs to know that we are intent on getting about this just as fast as we can without, obviously, rushing to failure.”



Rob Felt

Gen. David H. Petraeus addresses Georgia Tech's Army, Air Force and Navy ROTC cadets during his stop at the Ferst Center for the Arts in January.

Service Industry

Georgia Tech has long history of producing soldiers and statesmen

By Kimberly Link-Wills

"Georgia Tech's strong relationship to the military is the central part of our history of research and education. It manifests itself above all through the service of generations of students and faculty and staff who have been in the military. The strength of our own ROTC units — Army, Navy, Air Force — is also a testimony to the generations whose service to the nation we remember."

Kenneth Knoespel, interim dean of the Ivan Allen College of Liberal Arts, deliv-

ered those remarks in introducing Gen. David H. Petraeus at the Ferst Center for the Arts on Jan. 19.

The strength of those ties was reinforced in the makeup of the capacity crowd as there appeared to be as many, if not more, gray-headed veterans, invited as guests of the Col. Leslie Callahan Memorial Endowment program, as fresh-faced students. Of those students, more were in dress uniforms than T-shirts and jeans.

State and federal lawmakers also were in attendance, including U.S. Rep. Phil

Gingrey, Chem 65. Petraeus singled out and applauded former U.S. Sen. Sam Nunn, Cls 60, whom he called "a true bipartisan supporter of our men and women in uniform."

Petraeus' speech, billed as an "Update from the CENTCOM Commander," was sponsored by the Center for International Strategy, Technology and Policy of the Sam Nunn School of International Affairs at Georgia Tech as well as the Callahan endowment.

About halfway into the 90-minute program, a small band of protesters, reportedly



Tech served as a training ground for young men preparing for deployment during World War I. In 1926, Tech was awarded a Navy ROTC program.

members of Grandmothers for Peace (with some grandfathers), stood up from their seats, removed their coats to expose anti-war sentiments on their T-shirts and turned to face the audience. They stood silently for several minutes until they were escorted from the theater by security. Unfazed, Petraeus didn't miss a beat.

Earlier, while those dozen or so protesters had passed out their leaflets outside, Petraeus, in an anteroom of the Ferst Center, had stood proud and posed for photos with Army, Navy and Air Force ROTC cadets.

Congress established the Reserve Officers Training Corps at the Georgia School of Technology in 1916. The first units were the Signal Corps and Coast Artillery, according to the Alumni Association's Living History program.

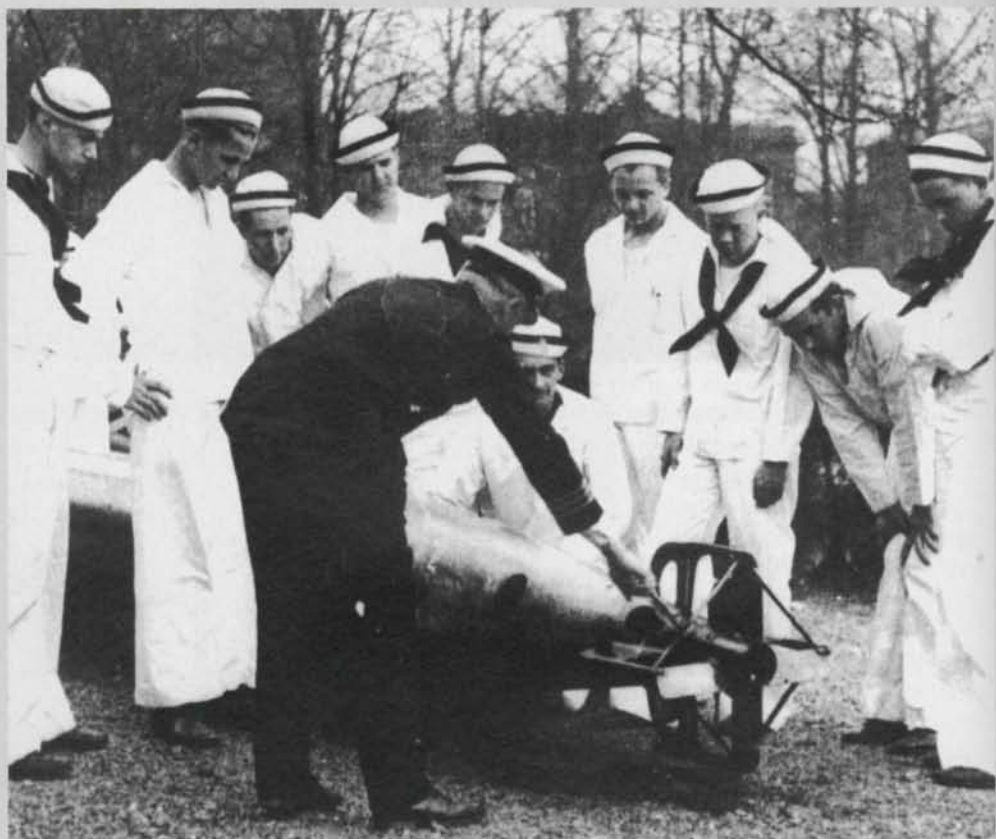
Living History director Marilyn Somers said all freshmen and sophomores were required to enroll in ROTC or five hours a week of physical training conducted by military personnel. Juniors and seniors could participate in ROTC and receive \$12-per-month pay.

In 1917, when the United States entered World War I, Tech was chosen as one of the few technical colleges to give preparatory instruction in military aeronautics.

During peacetime, the *Army & Navy Register* reported, "By order of the Navy Department, Georgia School of Technology is chosen as the only school in the South and one of only six in the nation to have a Navy ROTC program on June 19, 1926."

The Air Force ROTC program was launched at Tech at the close of World War II in 1946.

The Georgia Tech Military Affinity Group (gtmag.net), established by the



Alumni Association four years ago, pays tribute to all who have served or are serving their country.

GTMag is open to students, alumni, faculty, staff and friends who are active or retired from all military branches and reserve units.

The group was formed in part to help with ROTC recruiting, facilitate networking and preserve military history on Tech's campus. It now has more than 50 active members. President of GTMag is Jack Henderson, IM 79, a retired Marine lieu-

tenant colonel and current senior director of Database Operations at the Alumni Association.

GTMag will host a Military Appreciation Day celebration, which will bring former and current servicemen and women together, on April 28, in anticipation of the May 16 national commemoration of Armed Forces Day.

On April 29, all campus ROTC units will come together for an awards program that will include the presentation of swords and scholarships.

Reading the Tea Leaves

Center for International Strategy, Technology and Policy is on the watch for under-the-radar global threats

By Van Jensen

Adam Stulberg was working for Sam Nunn after the senator's retirement from legislating when Stulberg became interested in a position at Georgia Tech's School of International Affairs. The school wasn't yet named after Nunn, Cls 60, and Stulberg didn't learn of the connection until after he was hired.

Since joining Tech — he's now an associate professor and co-director of the Center for International Strategy, Technology and Policy — Stulberg has continued working closely with Nunn in his efforts to educate policymakers on critical issues of international security. That includes planning the Sam Nunn Policy Forum, slated for March 29 on campus, to discuss the challenges to forming a partnership between the United States, Russia and Europe to work toward global nuclear risk reduction.

The center hosted the talk with General David Petraeus. What was the goal of that?

Beyond the obvious, that he's an exemplary citizen and his military service speaks for itself, what stands out is that he has a PhD in international affairs. His particular



Rob Felt

Center for International Strategy, Technology and Policy co-director Adam Stulberg served as moderator for the Petraeus presentation.

view in 21st century threats calls for whole new ideas. Here's a four-star general and the first thing he says is it's not just about blowing the other side up. You have to win hearts and minds. I think that's a message for future leaders in social sciences and engineering who need to understand what kinds

of technologies and related systems are going to be viable and useful. They don't have to build weapons systems to make a contribution to national security.

How does that relate to the center's overall mission?

We see our role as a policy research arm of the Sam Nunn School. We want to engage faculty who are doing cutting-edge research and combine it with other research to give it a practical outlet. It's also to engage students to relate their work to broader policies and to give them exposure to possible mentors in the community. We want this center to be a hub so other people off campus and across the country can see us as a bridge builder between the worlds of science, policy and technology and as an inroad to academia. And we can provide seed support to generate new

research into what we see as new threats that policymakers are going to be dealing with.

Where does the center fit in Georgia Tech's long history of involvement with the military and Department of Defense?



Rob Felt

Former U.S. Sen. Sam Nunn, College of Engineering Dean Don Giddens and President G. P. "Bud" Peterson meet with Gen. David Petraeus.

It's an evolution to go beyond defense policy to international security. We define international security much broader than supporting U.S. defense policy. The defense offices we interact with are much different than those Georgia Tech has historically dealt with. We work with offices contemplating future threats and think tanks. We have a tremendous amount of freedom to bring our own ideas to bear on the frontier of international security.

What are some of the center's focus areas?

We have a project directed by [assistant professor] Margaret Kosal on emerging technologies and international security. She's done a lot of research in biosciences and nanotechnology, trying to understand what types of threats are associated with related emerging technologies, what are the institutions and political cultures that will govern their integration into national policies and what are going to be the strategic consequences of their global diffusion.

All of the great players have declared nanotech is the next revolution in military affairs. The scientists and engineers are still

scratching their heads because they're not sure what nanotechnology is. But all of these communities are defining what this technology is going to be and how it's going to fit in international security in different ways. We need to look at: What are the scientists thinking? What are the institutional structures and the political cultures? The third leg is understanding the forecast. What are the prospects for strategic interaction between the United States and China? What are the challenges on the battlefield and diplomatically?

How do you and your colleagues strike a balance between forecasting the future and trying to shape it?

We do a little advocacy depending on the research of the faculty. Professor [and the center's co-director] Seymour Goodman gives testimonials on the Hill about cybersecurity. He provides assessments and criticisms of current policies. Others have written white papers that deconstruct policy problems and offer practical recommendations. But we're mostly social scientists. The puzzles that intrigue us are why is it we see

cooperation breaking out in some areas and competition breaking out in other areas?

What under-the-radar threats do you believe deserve more attention?

It's not the emergence of a new threat but a new combination of threats. We talked about the era of the tank or the era of the nuclear weapon. We're moving into a much more amorphous threat environment, where there are different actors playing by different rules and using different combinations of technology and social systems.

The United States doesn't have a peer competitor but might be a target for a lot of these actors. The challenge for us is to move away from a cookie-cutter approach. We need to think about things in interdisciplinary ways.

Also, the interface between energy and international security is going to become a bigger issue. I'm talking about the ways that states together with their firms use energy as a tool of statecraft. That's not just Russia using gas as a weapon. It could be other countries using their domestic markets for energy to compete with the U.S. demand.

"We can innovate on the fly very well to meet the immediate challenges, but especially when we achieve victory we tend to go back to the way we were doing things."

That's going to challenge the realpolitik of how great powers interact.

You have researched military transformation. Do you see changes happening?

There was a lot of lip service paid to transformation before the 9/11 attacks and subsequent wars. With those actions came more spending, and the services lost the incentive to transform, but they also had new challenges. We can innovate on the fly very well to meet the immediate challenges, but especially when we achieve victory we tend to go back to the way we were doing things.

I did a lot of work on unmanned air vehicles. There are a lot of institutional roadblocks to fully integrating UAVs into the fighting force. They require a totally new mind-set for the armed services and a whole new promotional tract. There has been progress, but are we going to go back after we leave Iraq and Afghanistan to procuring more F-22s that are less relevant to the conflicts we find ourselves in?

The changes we make have less to do with the technologies we're developing and more with the cultures and institutions. Counterinsurgency is a good example of something that's been difficult for us to absorb.

Nuclear nonproliferation is a major focus area for the center. What are the key issues facing policymakers?

The institutions that are put in place like the nonproliferation treaty have two speeds; there are the haves and have-nots. Does that mean states as they pursue nuclear energy

are going to have more incentives to acquire nuclear weapons? What motivates the states to acquire peaceful nuclear energy? There's a strong interface between the supply side and the political and economic issues that drive demand. That will be key to understanding the strategic consequences of a nuclear energy resurgence.

At the same time, Senator Nunn and former Secretary of Defense William Perry and former Secretaries of State George Schultz and Henry Kissinger are calling for a vision of a world free of nuclear weapons. How are we going to make that vision stable? How are we going to marshal those technologies in a way not that produces new nuclear weapons but helps to strengthen verification and enforcement?

Is it possible to improve nonproliferation during this nuclear energy resurgence?

Most of the growth is going to take place among countries that currently have nuclear power. The key issue is the proliferation of enrichment or reprocessing technologies. There's a big debate, whether the current suppliers can reassure the new customers they will deliver the fuel even when they politically don't like them. The concern is that customers won't trust the current oligopolistic supply mechanism and they'll seek to develop their own indigenous system. But doing so may push them closer to the brink of developing their own nuclear weapons capabilities.

What about Iran?

The situation in Iran is so confusing right now. It's hard to know what the

domestic politics are. I'm glad I'm not responsible for that watch right now. However, an important step is for us to know clearly what it is we're offering them.

What's concerning is when other countries whose actions speak to only benign intentions oppose some of these multinational approaches. We need to get our own house in order while Iran stabilizes.

How can the center's interdisciplinary approach make an impact?

We can bring together people working on nuclear from public policy, international security, economics as well as safeguards, detection and the basic physics of the fuel cycle in a coherent way. That's our challenge. We wrote a grant to create a certificate program for graduate students. The program would be comprised of an interdisciplinary set of courses and would allow them to do some research that would cut across boundaries.

The Sam Nunn Policy Forum this year is titled "Path Toward a World Free of Nuclear Weapons: The Euro-Atlantic Challenge." What's on tap?

The first part of the forum is, to make progress on global nuclear elimination, we need to have Russia, Europe and the United States working together. If we can't get those three, it's hard to imagine we're going to see progress with other nuclear weapon states. All sides have talked about partnership for 20 years, but we're not yet allies.

The second part of the forum says, all right, once we reduce these challenges, how can that impact global risk reduction?

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And all the way, to guide their chime, with falling oars they kept their time. -Andrew Marvell



Ramblin' Roll

1940s

Eugene Miller, Chem 45, of Boca Raton, Fla., was selected by the U.S. Navy Supply Corps Foundation board of directors to receive a distinguished alumnus award. The award recognizes former officers "whose accomplishments following military service continued to bring credit to the Supply Corps." Miller served in the Navy during World War II and continued his service in the Navy Reserve for more than 20 years, retiring as a commander in 1966. In the private sector, he has worked in higher education, the corporate world and journalism and publishing.

1950s

Jesus M. "Chico" Sosa, ME 55, founder of security window manufacturer Valcor Samcor in Puerto Rico, was awarded the 2009 Ricardo Alegria Architectural Medal by the Society of Architects & Landscape Architects of Puerto Rico. Sosa was recognized for his contributions and innovations to the island's architectural profession and for "placing innovation at the service of architecture." Among Sosa's contributions is the design of the jalousie window with integrated security bars 25 years ago.

1960s

Don Bozeman, EE 61, of Aiken, S.C., has published a novel, *Cassiopeia: Flight From Savannah*.

David R. Frohn, AE 67, for the third consecutive year was named one of Louisiana's Super Lawyers in the field of product liability defense. He is a co-owner of Frohn & Thibodeaux LLC in Lake Charles, La.

G. William Spann, Phys 68, MS Phys 70, MS IM 73, and his wife, Laura, in 2009 visited their seventh continent — Antarctica — and toured their 50th country. The couple also saw their 2,700th bird species while visiting Great Britain. After nearly 30 years, they both plan to retire from their software company in a couple of years to spend more time traveling.

Ronald C. Williams, CE 61, MS CE 63, recently was named a vice president with Gannett Fleming Inc., an international planning, design

and construction management firm. He works in the Williams Geotechnical Group office in Largo, Fla. A registered professional engineer in Florida for 42 years, he serves as chief geotechnical engineering consultant for the company. He is a member of the American Society of Civil Engineers, National Society of Professional Engineers and Florida Engineering Society.

1970s

Keith D. Bennett, CE 77, MS CE 79, recently was named a vice president with Gannett Fleming Inc., an international planning, design and construction management firm. He is based in the Williams Geotechnical Group office located in Largo, Fla. With more than 30 years of experience, Bennett serves as a senior geotechnical engineer and is responsible for quality assurance and quality control of geotechnical work for Williams. He also serves as an instructor for the National Highway Institute and Construction Training Qualifications Program. He is a member of the American Society of Civil Engineers, National Society of Professional Engineers and Florida Engineering Society.

D. Albert Brannen, Psy 78, was selected by his peers for inclusion in the *Georgia Trend* Legal Elite for 2009. Brannen, a partner in Fisher & Phillips LLP, was recognized for his labor and employment practice. He repeatedly has been named a Georgia Super Lawyer in employment and labor law and is listed in the 2010 edition of *The Best Lawyers in America*. Brannen also teaches labor and employment law in Georgia Tech's School of Public Policy.

John Facella, EE 70, the director of public safety markets for the Harris Corp., has been elevated to fellow by the Radio Club of America. Facella, who has been a member of the organization for 22 years, became interested in radio communications as a teenager and later turned that passion into a 30-year career in public safety, military and cellular radio communications. Facella served in the Army Signal Corps during the Cold War and has served as an active volunteer firefighter and emergency medical technician for more than 25 years. Facella also is a member of the Association of Public Safety Communications Officials and National Fire Protection Association.

Richard Ferrazzuolo, ChE 71, is teaching math to sixth-, seventh- and eighth-graders at Otwell Middle School in Cumming, Ga., through the remainder of the 2009-10 academic year. He previously had been a substitute teacher for the Forsyth County School System since August 2008. Ferrazzuolo earned a teaching certificate for middle grades math and science and high school math in 2008.

Kevin Johns, M CP 77, in October won the 2009 International Economic Development Council Award of Excellence for the 21st Century Strategic Economic Plan he prepared as director of economic development for Palm Beach County, Fla. The plan involves 36 public-private partnerships designed to attract global trade and investments to Palm Beach County and to position it as a prototype for communities of the future. He became the Austin, Texas, director of economic development in January.

Dennis Kelly, ME 76, who served as president and CEO of Zoo Atlanta for the past six years, departed in mid-February to run the Smithsonian's National Zoo in Washington, D.C. He will be director of the Rock Creek Park facility as well as the Conservation and Research Center in Front Royal, Va.

Steve Krebs, IM 78, has been named one of the top six lawyers in the United States in alternative energy by Chambers USA. Krebs, who heads the alternative energy practice at Baker Botts LLP in Houston, is co-chair of the American Wind Energy Association's 2010 convention, the largest annual wind event in the world.

Warren K. Neuburger, MS EE 76, has joined Innovative Productivity Inc. in Louisville, Ky., as president and CEO. The company operates the McConnell Technology & Training Center and the National Surface Treatment Center, both Centers of Excellence for the Navy. Neuburger previously was president of the network software management division of Ipswitch Inc.

J. Michael Rosser, CE 75, of Monroe, Ga., has been appointed the salvage pool representative to the Georgia board of registration of used car dealers and used motor vehicle parts dealers by Gov. Sonny Perdue. Rosser is the owner of Newton Auto Salvage Inc. in Covington and

Dynamics

$$\Sigma F = m\vec{a}$$

What have you been up to?

To have your news included in the Ramblin' Roll, clip out this form and send us the details at Ramblin' Roll, 190 North Ave. N.W., Atlanta, GA 30313 or e-mail us at ramblinroll@gtalumni.org. Please include your graduation class, degree and up-to-date contact information. Submissions may be edited for clarity and space.

Circular Motion

$$\vec{a}_c = \frac{v^2}{r}$$

$$\vec{F}_c = \frac{mv^2}{r}$$

Kinematics

$$\vec{x}_f = \vec{x}_i + \vec{v}_i t + \frac{1}{2} \vec{a} t^2$$

$$\vec{v}_f = \vec{a} t + \vec{v}_i$$

$$\vec{v}_f^2 = \vec{v}_i^2 + 2\vec{a} \Delta \vec{x}$$

has served as secretary/treasurer of the Georgia Automotive Recyclers Association. He and his wife, Fran, have one child.

Rick Standard, Arch 77, M Arch 79, has been named vice president and director of hospitality at KPS Group Inc. Standard has 25 years of experience in the hospitality industry, including work on hotels with conference centers, convention centers, resort and mixed-use complexes, as well as all-suite hotels and historic boutique hotel facilities.

James A. Winnefeld Jr., AE 78, was nominated in December for a fourth star and appointment as commander of Northern Command, North American Aerospace Defense Command at Peterson Air Force Base, Colo. Northern Command was established in 2002 to oversee homeland defense efforts and coordinate defense support of civil authorities. Vice Admiral Winnefeld is the Joint Staff director of strategic plans and policy and the senior member of the U.S. delegation to the United Nations Military Staff Committee at the Pentagon. A naval aviator, Winnefeld served with two fighter squadrons and as an instructor at the Navy Fighter Weapons School.

1980s

Jim P. Boyce, Chem 87, MS Chem 90, and his wife, Julie, announce the birth of a son, Matthew Alexander, on Dec. 12. Boyce, who recently retired from directing medicinal chemistry functions for Amgen Inc. in Seattle, currently serves as the chair of the American Chemical Society's Puget Sound section.

Laticia Taylor Khalif, IE 88, MS IE 91, in July 2007 relocated from the metro Atlanta area to Columbus, Ohio, where she serves as the plant quality assurance manager for Abbott Nutrition-Device. She is responsible for managing and ensuring compliance of Abbott's enteral feeding pumps, tubes and surgical kits. Prior to joining the company, she was the quality and regulatory services manager of HealthWatchSystems Inc.

Richard C. Staten, AE 88, was granted his sixth U.S. patent in September. It is the 22nd patent he has received globally as a lead or co-inventor since 2000. Staten, who earned master's degrees in finance and marketing at Georgia State University, is a senior manager of innovation strategy and strategic programs at the Coca-Cola Company in Atlanta.

1990s

Daniel Gretsches, IE 91, MS IE 96, is vice president of engineering of Solar Hot, a leading manufacturer of solar energy products for water heating, space heating, pool heating and commercial uses, located in Morrisville, N.C. The company's SolVeloX solar unit recently earned an Energy Star rating.

Gigi Pereira Harrell, IE 96, and **Scott Harrell**, IE 96, announce the birth of a son, Michael Perry, on Sept. 17. Michael joins sisters Jaley, 3, and Sarah, 5, at the family's home in Cary, N.C. Gigi is taking a break from corporate America. Scott is a senior director with Cisco.

Matthew Kramer, CS 94, and his wife, Katrina, of Atlanta, announce the birth of a daughter, Devan Denny Kramer, on Jan. 7.

Peter J. Stewart, CE 97, group vice president of product innovation and partnerships at PGI, formerly Premiere Global Services, has been elected to the board of directors for AIESEC United States, a global nonprofit dedicated to improving international understanding and cooperation through work exchange programs for university students. Stewart will chair the sales and marketing committee.

Brian C. Thomas, Mgt 98, has been named a partner in Graydon Head. A former Graydon Head summer associate, Thomas' practice consists primarily of employment litigation. In 2009, Thomas was named a "Rising Star" by *Ohio Super Lawyers* magazine for his work in employment and labor law. He is president of the Black Lawyers Association of Cincinnati and a member of the boards for the Cincinnati Bar Association and People Working Cooperatively.

Callie Cagle Warren, Mgt 99, and **Damian Warren**, ISyE 99, announce the birth of a son, Keegan Andrew, on Nov. 21. Keegan joins sister Lindley Camille, 3, at the family's home in Powder Springs, Ga. Callie is a full-time mother, and Damian is a business project manager for SunTrust Banks.

2000s

Troy Baumgarten, CmpE 00, and his wife, Amanda Levine, announce the birth of a daughter, Maggie Grace, on July 7. Baumgarten is a database administrator with FTS Inc. The family lives in Coral Springs, Fla.

Christopher E. Brazell, CE 01, MS CE 04, was named Young Engineer of the Year at the 2010 Georgia Engineers Week awards gala on Feb. 20. Brazell is regional business manager of EMC Engineering Services Inc. in Columbus, Ga.

Jennifer A. Howard, IE 01, is the financial adviser at Edward Jones in Dunwoody, Ga. She has more than two years of experience helping individuals meet their financial goals.

Kenyata Martin, ChE 01, of Cincinnati, received an MBA from the University of Chicago Booth School of Business with concentrations in marketing, strategic management and entrepreneurship. Martin is global assistant brand manager on Old Spice for Procter & Gamble.

Travis McDonald, ME 01, has joined The Island Empress, a LaTour signature resort on Pensacola Beach, Fla., as the director of development. He previously worked for The Kor Group of Los Angeles, handling acquisitions and development for high-end resorts in Vancouver, San Francisco, Los Angeles, Miami and the Caribbean.

Currie Mixon, CE 00, MS EnvE 06, and Sharon Moll announce the birth of a son, Arthur Rainier Mixon, on June 6. Mixon is a remediation engineer with AECOM Environment. The family lives in Raleigh, N.C.

Jennifer Moore, BC 05, has been named the director of property, design and construction management at MCGHealth. Moore previously worked with R.J. Griffin and Company in Atlanta, most recently as project manager for the \$32 million MCGHealth Cancer Center. Moore is a LEED-accredited professional and a member of the Construction Management Association of America, U.S. Green Building Council and Tech's building construction alumni board.

Chelsea Morrissey, CS 04, and **Christopher Navo**, CS 05, of Mableton, Ga., were married March 1, 2008. Chelsea is a senior software engineer for Lockheed Martin. Christopher is a software architect for SunTrust Banks.

Jennifer Dykes Selfridge, ABiol 01, and **Stephen Selfridge**, IE 01, MBA 06, of Huntersville, N.C., announce the birth of daughter Katherine Grace on Dec. 10. Jennifer, the daughter of James Dykes, EE 70, MS IE 97, is a middle school science teacher. Steve is a vice president on the innovation enablement team at Bank of America.

1930s

Benjamin S. Goodwin, ME 39, of Spartanburg, S.C., on Jan. 26. Also a graduate of the Army Command and General Staff College, he was a retired colonel and technical director of test and evaluation command in the Army, having worked as a mechanical engineer. Mr. Goodwin served as a member of the Retired Officers Association, American Society of Mechanical Engineers, American Legion and National Defense Industrial Association.

Benito Julian Thomas "B.J." Nickelsen, CE 34, of Gulf Breeze, Fla., on Jan. 5. Mr. Nickelsen retired from Nickelsen Cabinet Co. in Pensacola. He served in the Army as a reservist for 20 years and in active duty from 1941 to 1945, achieving the rank of lieutenant colonel with the Corps of Engineers. A church choir member and Eucharistic minister, Mr. Nickelsen served five years as a Scoutmaster and received the St. George Scout Medal. While a co-op student at Tech, he was a member of Scabbard and Blade, the track team, ROTC and Phi Epsilon Kappa.

1940s

Gordon B. Cauble, ME 40, of Tucson, Ariz., on Dec. 3. A retired Army brigadier general, he earned an MBA from Harvard Business School; was a signal officer of the 29th Infantry Division, going ashore on D-Day; and later served in the Korean and Vietnam wars. A founding member and past president of the Tucson Corvair Club, he owned as many as 22 Corvairs over the years, including one that was named the grand award winner at a national Corvair convention. He also was a member of the Arizona Georgia Tech Club. Survivors include his son Thomas, IE 69, and grandson Matthew, a College of Engineering student.

Alvin Theron George, Cls 45, a resident of Grayson, Ga., on Jan. 25. An entrepreneur with businesses in Georgia and Alabama, Mr. George worked for Miller & Miller and graduated from the Atlanta Division of the University of Georgia in 1956 before launching his first business. He left Tech to enlist in the Army Air Corps and served with the 73rd Bomb Wing in World War II, completing 33 missions over Japan.

In Memoriam

as a central fire control gunner on B-29s. Mr. George, who earned a pilot's license in 1966, collected World War II warplanes and for several years was a member of the Commemorative Air Force.

Charles H. Greene, Cls 43, of Lakeland, Fla., on Jan. 15. Mr. Greene, who graduated from the University of Tennessee, was a registered professional engineer, a member of the Florida Engineering Society and an Army veteran of World War II. A participant in Boy Scouts activities for 54 years, he received the Gulf Ridge Council's Silver Beaver Award. Mr. Greene also was a lay leader and a Sunday school teacher at his church.

Mercer Harris Johnson, IM 42, of Oakwood, Ga., on Dec. 2. Mr. Johnson retired from Lockheed Aircraft Corp. after 35 years as an engineer. A World War II veteran who served in the Philippines and New Guinea, he was a deacon at his church. Memorials in his name may be made to the Georgia Tech Foundation.

Robert Landon Kimbrough, Arch 41, of Seattle, on Dec. 13. He retired from Boeing in 1986. During his career, he was involved in facilities management and worked on the Minuteman missile deployment and the building of the Everett plant. He participated in the ROTC program at Tech, graduating as a second lieutenant in the Army, and achieved the rank of major by the end of World War II. He continued to serve in the Air Force Reserve, retiring with the rank of colonel in 1967.

Ira Thomas "Tom" Layfield, TE 49, of Cumming, Ga., on Jan. 1. He worked as an engineer for the General Services Administration before becoming the director of engineering services for the CDC in Atlanta. A graduate of the Georgia Military College in Milledgeville, he was a lieutenant colonel in the Marine Corps, flying B-25s in World War II and serving as a transport pilot in the Korean War.

William Howard "Mac" McKee, MS AE 47, of Atlanta, on Jan. 27. Mr. McKee joined Lockheed Georgia in 1953 and became its Federal Aviation Administration coordinator, retiring in 1987. He received a bachelor's degree in mechanical engineering from Oregon State

University and began his aviation career working with Boeing Aeronautical and Pan American Airways. He was commissioned in the Air Force in 1942 and later served in the Civil Aeronautics Administration for many years as a flight test engineer.

Moses Collins Murphey, ChE 43, of Sewickley, Pa., on Jan. 7. He retired as chief plant engineer of Koppers Co. / Arco Polymers in 1985. A deacon and elder at his church, Mr. Murphey enjoyed golf, stamp collecting and ballroom dancing.

Harry W. Ormand Jr., TE 48, of Thomas-ton, Ga., on Nov. 3.

Manley Earl Porter, EE 49, of Columbia, S.C., on Jan. 14. After retiring from the Air Force as a major in 1966, he continued to work in the aerospace field, working on the Apollo program with NASA and the Army's missile defense system. Following service in the Army Air Corps during World War II, he enrolled at Tech and earned an Air Force Reserve commission as a second lieutenant. He entered the Air Force in 1949 and served in staff positions in nuclear weapons maintenance and aerospace programs. He was a Mason and a member of Scottish Rite.

Thomas Gibson Preacher, Cls 44, of Atlanta, on Dec. 10. Mr. Preacher retired in 1989 after a career in which he worked with the Yancey Co., RCA and Southco Sales. He left Tech to join the Navy during World War II, serving as a first-class sonar man aboard PC-487. He was a member of the Kiwanis Club and the Phoenix Society.

Wilbur Carl Riddell, IE 48, of San Antonio, on Dec. 25. A member of Lambda Chi Alpha fraternity, Mr. Riddell worked with George C. Vaughan & Sons and Kenro Inc. During his career, he served as chairman of the board and president of the American Architectural Manufacturers Association.

Orrin Warner Robinson Jr., EE 47, of Redwood City, Calif., on Jan. 16. Following graduation from Tech, Mr. Robinson moved his family to the Philippines, where he assumed the directorship of the largest pineapple can-

nery in the world. Mr. Robinson served as a lieutenant in the Army Signal Corps during World War II.

Ralph C. Rogers, IE 49, MS IE 51, of Holiday, Fla., on Oct. 22. Mr. Rogers retired from the J.C. Penney Co. He was a member of Alpha Phi Omega at Tech.

Oscar M. Smith, Cls 45, of Rome, Ga., on Jan. 9. Mr. Smith, who graduated from the University of Georgia School of Law in 1948, was a partner in the firm of Smith, Shaw, Maddox, Davidson and Graham. He practiced law in New York, Atlanta and Rome for 40 years. He was the attorney for the Hospital Authority of Floyd County for 18 years; a director of the Home Federal Savings and Loan Association for 23 years; and a fellow of the American College of Trial Lawyers. During retirement, he was a national champion builder and flyer of rubber-powered, scale model planes. During World War II, he served three years in the Army, achieving the rank of first lieutenant.

Charles Cooke Speakes, ME 43, of Benoit, Miss., on Jan. 9. Mr. Speakes worked as an engineer in the flight test division of Curtiss-Wright Aircraft Corp. in Ohio and for the U.S. Department of Agriculture Cotton Ginning Laboratory in Stoneville, Miss., prior to returning to his hometown of Benoit, where he raised cotton, soybeans and rice until his retirement in 1996. A member of Alpha Tau Omega fraternity at Tech, Mr. Speakes, or "Cookie" as he was known to friends, was in the Army Air Corps from 1943 to '46, serving as a first lieutenant technical supply officer, maintenance engineering officer and B-29 bomber flight engineer. He was a past president and director of the Benoit Gin Co.

Robert Earl Steele Sr., Cls 49, of Dalton, Ga., on Jan. 7. He retired as owner and general agent of Steele Insurance Agency.

1950s

Gorman R. Carey, EE 51, of Deltona, Fla., on June 29. A retired electrical engineer, Mr. Carey participated in Tech's co-op program.

William Dewey Courtney, EE 52, of Char-

Class of 1928 Alums Tom Edwards and Ernest Welch

They Lived Life to Its Fullest — for 103 Years

By Leslie Overman

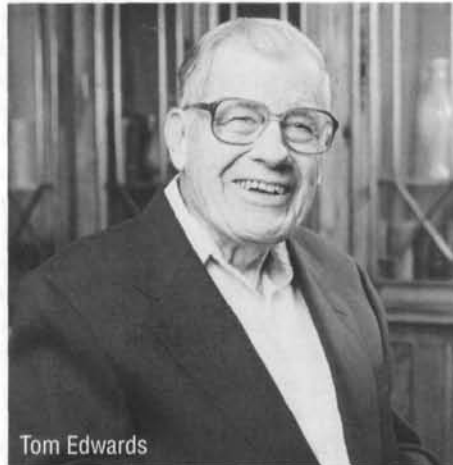
Tom Edwards and Ernest Welch may never have crossed each others' paths on campus before receiving their Georgia Tech degrees in 1928. Mr. Edwards lived off campus and commuted to classes each day, while Mr. Welch took courses through Tech's evening program. But both were born in Alabama; both spent decades working for one company in their lengthy business careers; and both spent retirement traveling around the world. And then there's that other thing — they both lived to the age of 103.

Ernest G. Welch, a graduate of Tech's School of Commerce who lived in Atlanta and retired from Sonoco Products Co., died Dec. 26. Thomas A. Edwards, who lived in Lantana, Fla., and retired after a nearly 40-year career with General Electric, died Jan. 9.

Mr. Edwards, who earned a bachelor's degree in electrical engineering from Tech, began his career with GE testing radios before designing new pick-ups for record players and helping develop the first RCA Photophone speakers. He later worked on radio transmitters, radar and high-voltage power transformers. On a business trip to Washington, D.C., Mr. Edwards even received an invitation to lunch with then-Gen. Dwight Eisenhower to discuss how radar worked.

At the onset of World War II, Mr. Edwards was released from his military commission to head GE's Syracuse plants and develop and manufacture radar equipment for the war. He helped build the SCR-527. Mr. Edwards, who eventually became one of GE's first manufacturing engineers, retired from the company as manager of utilities for the relations and utilities operations of the transformer division in 1967. He was inducted into the Georgia Tech Engineering Hall of Fame in 1995.

Following graduation from Tech, Mr. Welch worked briefly with Equifax before joining the National Paper Co.,



Tom Edwards

which later was bought by Sonoco Products Co., a global supplier of industrial and consumer packaging.

After retiring from Sonoco in 1971, Mr. Welch devoted more time to his favorite pastime, photography. During his Sonoco career he worked in sales and marketing, a job that required constant travel. In a 2003 interview with the *GEORGIA TECH ALUMNI MAGAZINE*, he said he always was armed with a 35-mm camera on his travels.

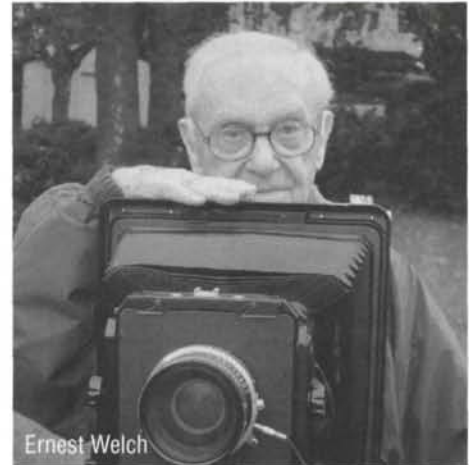
Mr. Welch served three years in World War II, working as a counterintelligence agent. While serving overseas, he wrote his mother to mail him his Kodak.

In retirement, he participated in workshops through Friends of Photography, founded by a group of notable photographers including Ansel Adams. He was accepted into Adams' workshop shortly before the famous photographer's death.

Mr. Welch enrolled in photography courses at Georgia State University when he was in his late 80s. His passion was palladium and platinum printing. Many of his photographs were featured in art gallery exhibits throughout Georgia.

"I went back to school to learn," he told the *ALUMNI MAGAZINE*. "I hadn't really even considered earning a degree, but one day I realized I had so many photo courses I might as well get one."

Mr. Welch earned a bachelor of fine



Ernest Welch

arts degree from Georgia State in 1999 at the age of 93. Four years later, Georgia State dedicated its School of Art and Design to Mr. Welch.

Perhaps contributing to their long lives was the gusto with which Mr. Edwards and Mr. Welch lived their golden years. In addition to his coursework at Georgia State, Mr. Welch spent time photographing exotic locales in his extensive travels.

Mr. Edwards also enjoyed traveling in retirement and went on 105 cruises. He told *Living History* in 2003 he was preparing for a cruise to the Arctic Circle to celebrate his 98th birthday.

He said people would be surprised at how well senior citizens get around on boats. "An awful lot of people go on cruises with wheelchairs and walkers," he said. "The last cruise I was on there must have been at least 20 wheelchairs and I don't know how many walkers."

Mr. Edwards took his first around-the-world cruise in the 1960s. Mr. Welch went on an around-the-world trip in '71.

Mr. Welch, whose mother lived to be 103, attributed his long life to good genes and to staying busy. When he was interviewed by *Living History*, he already was 97 but still practicing photography and still tending to his garden.

"Some people when they retire," he said, "they sit around and do nothing. And they usually die early too."

In Memoriam

lottesville, Va., on Jan. 17. Mr. Courtney had a 40-year career as an electrical engineer for Sperry.

James Marion Goodson Jr., IE 50, of Birmingham, Ala., on Jan. 1. He was an engineer with TCI and Vulcan Materials and later worked in the agricultural lime and cement industry at Cheney. An Army Air Corps veteran, he was a volunteer with Habitat for Humanity and the Waste Reduction and Technology Transfer Foundation in retirement.

Ira Ulmont Grant, IE 53, of Marietta, Ga., on Dec. 22. A Navy veteran, he retired from General Motors Corp., for which he worked in management for more than 35 years.

Max D. Harris, EE 50, MS EE 56, of Stone Mountain, Ga., on Jan. 8. He retired as a quality electronics engineer after 36 years with Scientific Atlanta.

Robert Stone Haywood, IE 54, of Forsyth, Ga., on Dec. 10. He retired as the owner and operator of Southeastern Metal Products in Atlanta in 2005. An Army veteran of the Korean War, he was a past president of RICA, an organization for Korean War Ranger veterans. Mr. Haywood had served as a deacon at his church since 1963.

John S. "Jack" Heery Jr., Cls 52, of Savannah, Ga., on Jan. 14. In a 38-year career with the Army Corps of Engineers, he was active in the design and construction of the Clark Hill Dam and other large hydroelectric projects in the Southeast as an electrical engineer and served as emergency manager for disasters, focusing on hurricane management.

John Kay, ME 52, of Greer, S.C., on Jan. 22. Mr. Kay retired from Texaco Inc. as a sales engineer. He served as a Navy pilot during World War II.

Charles D. "Dwight" Keene, ME 55, of Tampa, Fla., on Jan. 13. He served as a first lieutenant in the Army.

Ronald Kolman, Arch 57, of Savannah, Ga., on Dec. 1. After graduating from Tech, Mr. Kolman returned to his hometown of Savannah to establish a practice, which now is Lominack Kolman Smith Architects. He served six terms

as president of the south Georgia chapter of the American Institute of Architects; received awards from both the Georgia and Savannah chapters of the organization; and in 2001 became an AIA fellow. His service to the community included work with the Historic District Board of Review and Historic Savannah, as well as many city and county appointments. Mr. Kolman also loved woodworking and was a member of the Low Country Woodturners.

Robert Lusk, IM 52, of Largo, Fla., on Jan. 6. A letter winner in football and baseball at Georgia Tech, he was a member of the Sports Hall of Fame at the Institute as well as the Old Timer Hall of Fame in Chattanooga, Tenn.

Arthur H. "Art" Marthens Jr., EE 50, of Annapolis, Md., on Nov. 19. He retired from the Rural Electrification Administration telephone program in 1987 after 23 years of service. Before moving to the Washington, D.C., area, he lived in Galion, Ohio, where he was employed by North Electric from 1950 to 1961. During World War II, Mr. Marthens served in New Guinea and the Philippines with the Army 24th Division, 19th Infantry Regiment.

Jerry Howard Nabors, IM 58, of Niceville, Fla., on Dec. 1. He retired from Northrop Grumman after 18 years as the flight test director at Eglin Air Force Base. He attended Tech on a football scholarship and was commissioned in the Air Force after graduation. He retired from the Air Force as a colonel in 1985 after 27 years of service in which he logged 5,700 hours in flight as a fighter pilot and flew 188 combat missions. He received the Legion of Merit, Distinguished Flying Cross, Meritorious Service Medal, Air Medal and Order of the Sword. A lifetime member of the Air Force Association, he was a past president of the State of Florida AFA and Eglin chapter of the AFA and a member of the Emerald Coast Military Affairs Council and Georgia Tech Athletics Hall of Fame. He earned a master's degree from the University of Arkansas and graduated from the Navy War College.

Thomas M. "Tom" Randall, EE 53, MS EE 71, of Chamblee, Ga., on Jan. 13. After serving in the Army Signal Corps, he began a 32-year career with Lockheed as an electrical engineer.

Henry Richardson Read Sr., IM 51, of At-

lanta, on Dec. 8. He was president of the food brokerage company RMCBS and co-founder of Ready Trucking Co. He served as president of the Atlanta Food Brokers Association. Mr. Read joined the Marines after high school and was commissioned in the Army after graduating from Tech, where he was president of Chi Phi fraternity. He was stationed in Tokyo while serving as a commissary officer.

Esperanto J. "Simmy" Simicich, ME 54, of Cocoa, Fla., on Oct. 2, 2008. An Army veteran, he worked in the aerospace industry for several years before forming Ti-Co Medical Devices. After retiring in 2004, he continued to pursue a lifelong love of aviation. Mr. Simicich participated in Tech's co-op program.

Joseph M. Szablowski, ME 54, of Fort Worth, Texas, on Jan. 21. After retiring from engineering in the late 1970s, he was an adjunct professor in the physics department at Texas Christian University and a real estate broker. In a 20-year career with General Dynamics, now Lockheed Martin, Mr. Szablowski was a mechanical engineer on the B-58 jet project. He also worked as a consultant at Global Graphics, Baldwin Electronics, Spinks Aircraft and Motorola. Mr. Szablowski served as an artillery sergeant at Fort Knox, Ky., during World War II. He was a past president of the North Texas Georgia Tech Club and a longtime member of the American Society of Metals and Lockheed Martin Management Club.

Georges "Tom" Spencer Thenault, ME 53, of Harwich Port and Yarmouth Port, Mass., on Jan. 9. He was an engineer manager in the small engine aircraft group at General Electric for 40 years. His career included three years in France working with Airbus and Snecma. A Fulbright scholar and member of Sigma Alpha Epsilon at Georgia Tech, he received a master's degree from Northeastern University.

Robert Bradley "Bob" VanTassel Sr., Text 51, of Baton Rouge, La., on Dec. 15. He earned an MBA from the University of Virginia and spent his career working in the textile manufacturing industry. An Army Air Forces veteran of World War II, he was awarded the World War II Victory Medal, Asiatic-Pacific Service Medal with two silver stars and the Philippine Liberation Ribbon with one bronze star. He enjoyed deep-sea fishing. Survivors

Pernell Roberts Was at Tech Before the Ponderosa

Pernell Roberts, Cls 50, who more than a decade before setting foot on the Ponderosa as Adam Cartwright on the television series *Bonanza* walked across the Tech Tower lawn on his way to class, died of pancreatic cancer Jan. 24 at his home in Malibu, Calif. At 81 years old, he was the last surviving member of the popular Western's original cast.

Born in Waycross, Ga., Pernell Elven Roberts Jr., a member of the 1946 freshman class, enlisted in the Marines in 1948. He attended the University of Maryland on the GI Bill but left his studies to join the Arena Stage in Washington, D.C. He later moved to New York, where he found work on and off Broadway and in 1956 won the Drama Desk Award for playing the title role in a production of *Macbeth*.

Mr. Roberts set out for Hollywood in 1957, soon landing parts in television and film, including the 1959 Western *Ride Lonesome*, which starred another Georgia



Tech alumnus, Randolph Scott, Cls 23.

He joined *Bonanza* as big brother to Hoss and Little Joe in 1959. Disappointed in the scarcity of nonwhite actors in the

cast, unchallenging scripts and lack of character development, he left the television show at the close of its sixth season in 1965 while it was at the height of its popularity.

In 1963, Mr. Roberts told *The Washington Post*, "Isn't it just a bit silly for three adult males to get Father's permission for everything they do? I haven't grown at all since the series began four years ago. I have an impotent role. Everywhere I turn, there's the father image."

Mr. Roberts' role was written out of the show, which ran until 1973. For the next couple of decades, he appeared on television in a slew of guest roles on such series as *Gunsmoke*, *Hawaii Five-O*, *Night Gallery* and *The Odd Couple* before landing the lead role in the TV medical drama *Trapper John, M.D.*, based on a character from the film and television versions of *M*A*S*H*. The show aired from 1979 to 1986.

include his son Robert B. "Brad" VanTassel Jr., ChE 77.

Arthur B. Ward III, EE 57, of Tallahassee, Fla., on Dec. 23. Mr. Ward retired from the state of Florida as an electrical engineer in computer program design. He received a master's degree from Rutgers University and was a member of the Gulf Winds Track Club and the Economics Club of Florida.

Terrell H. "Ted" Yon Jr., AE 52, IE 56, of Cocoa Beach, Fla., on Jan. 24. Mr. Yon worked with Plantation Pipe Line, Lockheed Aircraft, Avco Aerospace, North American Rockwell and RCA Aerospace. A member of the Experimental Aircraft Association for more than 50 years and an associate fellow of the American Institute of Aeronautics and Astronautics, he designed and constructed experimental aircraft in retirement.

1960s

Richard Kirven Brantley, PhD Chem 63, of Wilmington, Del., on Dec. 21. Also a graduate of the University of Virginia and Emory University, Dr. Brantley was a senior research

chemist in the industrial and biochemical division of DuPont before becoming associated with the chemistry department of the University of Delaware. He wrote many scientific articles and held numerous patents.

John Robert Canada, PhD IE 66, a resident of Wilmington, N.C., on Jan. 20. Dr. Canada began his career at North Carolina State University in 1965, serving as a professor of industrial engineering and associate dean of engineering before retiring in 1992 and working as a labor and commercial arbitrator. Dr. Canada was the author or co-author of eight engineering textbooks and served as regional vice president and fellow of the American Institute of Industrial Engineers. He earned bachelor's and master's degrees from Virginia Tech and served in the Army and the Army Reserve.

Charles Edward "Chuck" Cooper Jr., AE 63, MS AE 66, of Huntsville, Ala., on Dec. 2. Mr. Cooper retired from the Space and Missile Defense Command in 1991. He enjoyed woodworking, sports and NASCAR.

James M. "Jim" Davis, EE 60, of Car-

rollton, Texas, on Dec. 8. He worked as an electrical engineer for his father's company before deciding to go to seminary in the 1970s to become a Presbyterian minister. He served as a pastor at churches in Texas and Louisiana and retired after working as a funeral director. Before attending Tech, where he was a member of Sigma Nu fraternity, he earned a bachelor of arts degree from Rhodes College.

Carl Bernard Drees Jr., ChE 65, MS ChE 71, PhD ChE 72, of San Rafael, Calif., on Nov. 26. A member of Chi Psi, he moved to California to join Chevron Overseas Petroleum. Dr. Drees worked for Chevron for 30 years, most recently in international human resources.

David V. Feters, IM 65, of San Francisco, on Oct. 28. He retired from the Navy. A participant in the co-op program at Tech, Dr. Feters received a doctor of medicine degree from Emory University in 1969.

Raymond Earl Fulghum, EE 66, of Houston, on Jan. 7. Also a graduate of the University of Houston, he worked for many years for Houston Lighting & Power Corp., MD Anderson Cancer Center and The Home Depot.

In Memoriam

W. Lane Greene, Arch 65, of Atlanta, on Dec. 20. As a preservation architect, he worked on the restorations of the Morton Theatre in Athens, Wren's Nest and Madison County Courthouse as well as the renovations of many antebellum houses. Mr. Greene served on the board of directors for the Georgia Trust for Historic Preservation and the Urban Design Commission of Atlanta as well as the review board for the Georgia National Register of Historic Places. He served in the Marine Corps prior to attending Tech.

Thomas Larkin Harbin, Cls 60, of Roswell, Ga., on Aug. 10. A Navy veteran of the Korean War, he was an architect and a member of the Georgia wing of the Civil Air Patrol.

Robert Harold "Robbie" Horak, IE 68, of Roanoke, Va., on Dec. 30. A member of Phi Delta Theta fraternity at Tech, he worked in the HVAC industry following graduation.

George V. Miller, IM 60, of Jupiter, Fla., on Dec. 3. A career naval aviator, he flew 12 planes during service in World War II, the Korean War, the Vietnam War, the Cuban Missile Crisis and the Grenada incident. After retiring from the Navy as a commander, he worked as a computer specialist with Burroughs Corp. and Marriott Corp. and taught computer science at Strayer University in Washington, D.C. He also served many years with the Air Force Data System Design Center through the Department of Defense.

Walter Garland Strong Jr., Cls 62, a resident of Carlyss, La., on Dec. 3. A co-op student at Tech and graduate of the Louisiana State University Law Center, he served in the Navy from 1966 to 1992. He was captain of the USS Robert E. Peary and earned three Legion of Merit awards. He was a weather watcher for KPLC Channel 7 news.

1970s

C. Nolan Maddox, IM 71, of Philadelphia, on Dec. 6. He worked in the oil business in Denver before moving to Virginia, where he worked in computers and as a stockbroker.

Eugene Parris "Gene" Nottingham, MS EE 70, of Tucker, Ga., on Jan. 14. He was one of the founders of Cinetron Computer Systems Inc., for which he served as vice president of

engineering for more than 28 years. Cinetron was an Atlanta manufacturer of computer-controlled motion picture animation and optical effects equipment with clients that included the Walt Disney Co., Universal Studios, MGM, ABC and CBS. His electronics and mechanical designs for Cinetron led him to receive an Academy Award for technical achievement from the Academy of Motion Picture Arts and Sciences as well as a Technical Achievement Award from Eastman Kodak Co.

John M. Reynolds II, ChE 73, of Aiken, S.C., on Dec. 23. He was a nuclear engineer for the Department of Defense naval shipyard in Charleston, S.C., for 20 years. After retiring from the Department of Energy's Savannah River Site in 2007, he joined Parsons Corp. as a project engineer.

Willie Gaddy "Bill" Utley, IM 76, a resident of Quitman, Miss., on Dec. 10. He was employed by Eagle Metal of Dallas.

1990s

Karl Davis Peters, CS 96, of Duluth, Ga., on Jan. 10. A student at Georgia Perimeter College, he was to complete the college's sign language interpreter program this semester. Mr. Peters spent many years working for Intel Corp. in Santa Clara, Calif.

Eric C. Smith, Arch 95, of Lawrenceville, Ga., on July 11. He was a former structural engineer with GPWD Consulting Engineers.

2000s

Emily Piper McGill, IntA ML 06, of Atlanta, on Jan. 11. A member of Phi Mu sorority and Campus Christian Fellowship at Georgia Tech, she participated in mission work in Mexico, Chile and Ghana.

Daniel Phommathep, CS 01, of Bonney Lake, Wash., on Jan. 21, after a two-month battle with cancer. A co-op student at Georgia Tech, he had worked as a software design engineer with Amazon.com and Big Fish Games Inc. and as a Web developer for Redfin.com.

Friends

George H. Adams, 73, of Atlanta, on Nov. 20. Mr. Adams joined Georgia Tech in 1968 and

retired as associate director of continuing education in 1995.

Jack Kenneth Hale, 81, of Atlanta, on Dec. 9. Dr. Hale spent many years teaching and performing research in mathematics at Brown University and Georgia Tech. His numerous awards included a Guggenheim fellowship, British Carnegie fellowship and Sigma Xi Sustained Research Award.

David Allen Kettler, 66, of Gainesville, Ga., on Nov. 20. He retired as the BellSouth vice president in charge of the science and technology organization and chief architect for the BellSouth Network then spent a few years as managing director and general partner of HIG Capital Management. Dr. Kettler served on the Georgia Tech College of Computing advisory board.

Glendal LaRowe, 88, of Gainesville, Ga., on Dec. 15. Mrs. LaRowe's nursing career included a stint as head nurse at the infirmary at Georgia Tech. She later became a potter. In 1969, she and her husband, John LaRowe, Arch 52, who survives her, founded the Mark of the Potter craft shop in northeast Georgia.

Robert N. Lehrer, 88, of Atlanta, on Jan. 25. Dr. Lehrer taught at Purdue, Oregon State University and Georgia Tech before establishing an industrial engineering department at Northwestern and then a similar program in Mexico at the Universities of Guadalajara and Guanajuato. He returned to Tech as an associate professor and later became the director of industrial and systems engineering, retiring as director emeritus. He served as editor-in-chief of the *Journal of Industrial Engineering* and was a recipient of the Frank and Lillian Gilbreth Industrial Engineering Award, the highest award bestowed by the Institute of Industrial Engineers.

Frederick H. Steen, 102, of Meadville, Pa., on Jan. 13. He taught at Georgia Tech for eight years before joining the mathematics department at Allegheny College, where he taught for 33 years. Dr. Steen, who wrote five books and numerous technical papers, had served as governor of the Mathematical Association of America and chairman of its Allegheny Mountain section. Dr. Steen's hobbies included playing his marimba and performing magic.

2010 GEORGIA TECH YELLOW JACKET BASEBALL

GEORGIA TECH 2010 HOME SCHEDULE

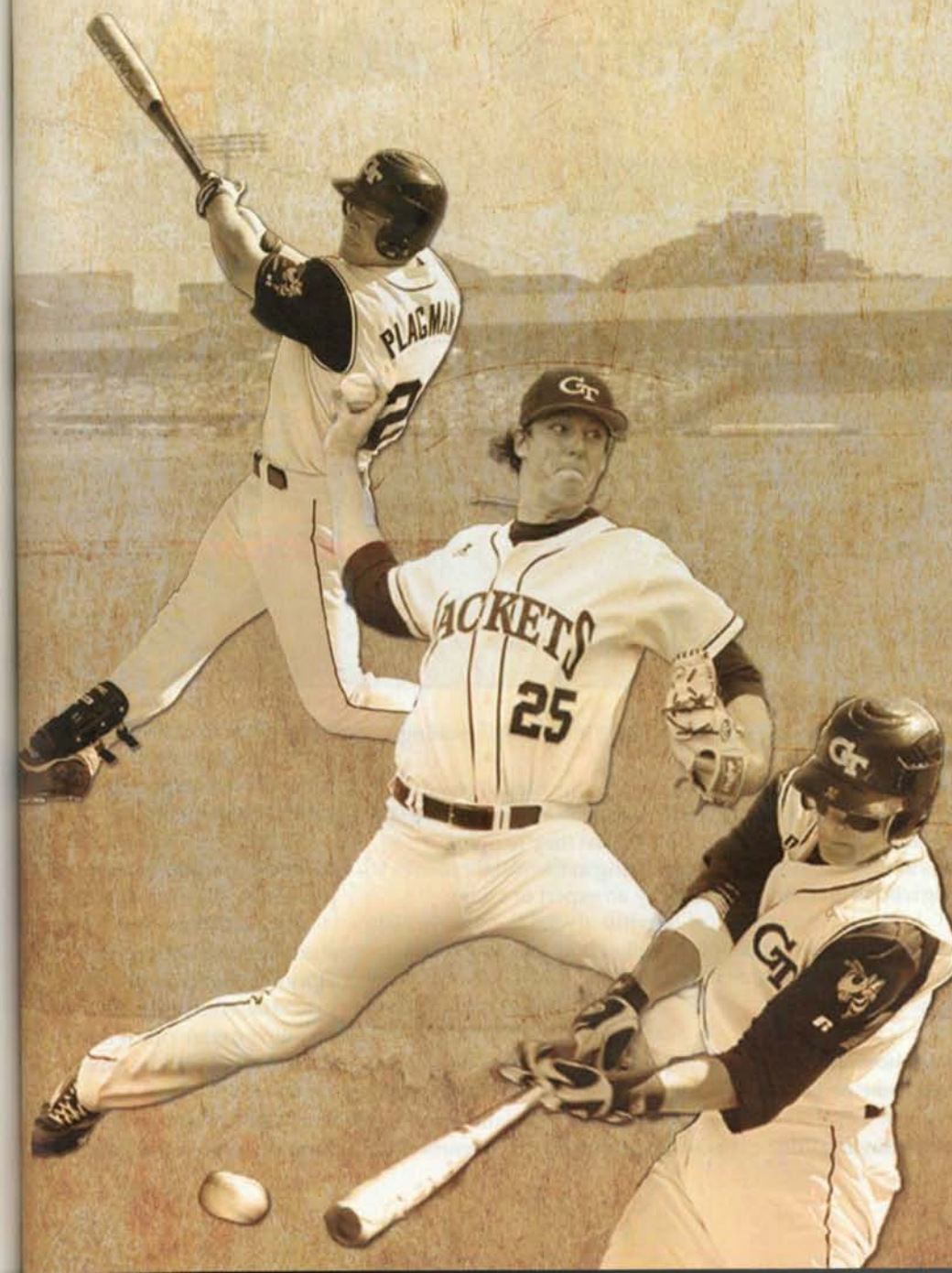
2/19	Missouri State	4pm
2/20	Missouri State	2pm
2/21	Missouri State	1pm
2/26	Xavier	4pm
2/27	Xavier	2pm
2/28	Xavier	1pm
3/02	Western Carolina	4pm
3/05	Rutgers	4pm
3/06	Rutgers	1pm
3/07	Rutgers	1pm
3/12	Wake Forest	4pm
3/13	Wake Forest	2pm
3/14	Wake Forest	1pm
3/16	Georgia	7pm
3/24	Mercer	6pm
4/02	Duke	7pm
4/03	Duke	6pm
4/04	Duke	1pm
4/06	Kennesaw State	6pm
4/16	Clemson	7pm
4/17	Clemson	1pm
4/18	Clemson	1pm
4/20	Georgia Southern	6pm
4/21	Georgia Southern	4pm
4/23	Virginia Tech	7pm
4/24	Virginia Tech	6pm
4/25	Virginia Tech	1pm
4/27	Georgia (Turner Field)*	7pm
5/07	Illinois-Chicago	7pm
5/08	Illinois-Chicago	6pm
5/09	Illinois-Chicago	1pm
5/14	Miami	7pm
5/15	Miami	7pm
5/16	Miami	1pm
5/18	Georgia State	6pm

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Strength Scientist

Steve Tamborra uses brain to build brawn

By Van Jensen

Beneath the south stands of Bobby Dodd Stadium, hip-hop was pounding, as usual, in the Yellow Jackets weight room. The reverberating bass was punctuated by the thunder of weights slamming down.

In an office off of the back of the room, apples, bananas and oranges sat in a tidy pile atop Steve Tamborra's desk. Beneath the desk, canisters of protein powder were stacked neatly.

Tamborra, in his 10th year as strength and conditioning coach of the Tech baseball team, watched out his office window over a group of players. They were just beginning one of Tamborra's lifting routines.

Tamborra has helped baseball coach Danny Hall turn out a steady stream of Major League Baseball prospects. One of those, Mark Teixeira, Cls 02, is on the cover of *Complete Conditioning for Baseball*, a much-respected tome penned by Tamborra.

Tamborra said he'd always been interested in writing a guide



All the Right Moves

Tamborra said he often sees nonathletes lifting incorrectly or doing lifts that offer little benefit.

"You see people doing things, and you think, 'Why would you do that?'" he said. "Just because you read it in a magazine — listen, those guys are bodybuilders. You shouldn't be doing what they're doing."

His advice is to understand what you're doing in the weight room by either reading a book on training written by an expert or taking lessons.

Tamborra recommends using simple lifts like squats, Olympic lifts, pull-ups and abdominal and back exercises.

to weight training, and when the publisher approached him he was excited to get started.

"I had a ghost writer, and without him, I would've died," he said. "I'm very glad I did it, but it wasn't fun. I'm not a good writer."

While he might not be the next Henry James, Tamborra knows his way around a weight room as well as anyone. Always a fitness fanatic, he went to Florida State and received undergraduate and graduate degrees in exercise science.

He wanted to be a personal trainer but had a bad experience while working part time at the campus recreation center as an undergraduate.

"I hated it," he said. "It bothered me that I was more passionate than my clients."

That led Tamborra to start working with the Florida State football program, which was excelling under coach Bobby

Bowden. Tamborra later started training baseball players as well before being recruited to Georgia Tech.

What Tamborra realized at Florida State and brought to Tech was the need to watch players closely during practices and games.



Kelvin Kuo

Baseball strength and conditioning coach Steve Tamborra instructs players on the finer points of squats in the Yellow Jackets weight room.

He designs weight-training programs to simulate the motions of the game.

"You have to understand the science of how the body moves," he said.

What he learned about baseball was that it hardly differed from other sports. The training consists largely of squats, Olympic lifts, core work, lunges and pull-ups.

"Every sport is a power sport," Tamborra said. "In baseball, it's your ability to repeat explosive events, to put everything into one swing or throw."

For as much time as he spends around athletes, Tamborra doesn't consider himself a big fan of sports. It's the culture of athletics and the personalities of the athletes that he enjoys.

"I like the kids," he said. "I love giving them a routine and seeing them challenge themselves. Baseball's terrible to watch unless you have a vested interest in the kids."

One of the most important parts of his job is to get to know the players, he said. They come to Tech to play baseball, not to lift. And so he has to find ways to motivate them.

Tamborra joked that outside of the weight room he doesn't do much beyond spend time with his wife and three children, watch movies and shoot guns at a range. But he is very involved in the Georgia Tech chapter of 925 Athletic Ministries, a Christian organization for college athletes.

"We're not just interested in developing them physically, but spiritually too," Tamborra said.

Following His Heart

Sidelined Cooper Taylor battles back from surgery

By Matt Winkeljohn

Now that Cooper Taylor is back from heart surgery, back from his version of insanity and on the verge of returning to the safety of Georgia Tech's football team, there is heartfelt color in his recollection.

"It was a difficult day," said Taylor, a defensive back, when asked if he would be willing to repeat a surgery where he was wired up — inside and out — and half-baked with electro-stimulation for a day in order to play football again.

"If you asked me the next day," he said, "I probably would have said, 'Hell no.' But now that I'm back in it and getting ready to play again, there's no way I wouldn't do it again in a second."

His mom and dad are back too, recovered from their parental ordeal that began Sept. 17 in Land Shark Stadium, when their sophomore son suddenly went missing from the Georgia Tech-Miami game.

"I thought he had got a concussion because he made a tackle on the sideline and didn't come back," said Taylor's father, former Tech quarterback Jim Bob Taylor, Mgt 82. "I saw him sitting with doctors."

A cell phone chirped and Tech director of sports medicine Jay Shoop had news. The head is fine. The heart is not.

A mother's tale: "I think I blacked out," Robyn Taylor said. "It was one of the worst days of our lives. It scared me to death. We didn't even know what happened. It scared us totally to death. It came completely out of the blue."

The next morning, her son was examined at Piedmont Hospital and diagnosed with Wolff-Parkinson-White syndrome.

Simply put, WPW stems from the electrical charges between the upper and lower parts of the heart. Whereas the normal

heart has one pathway for the charges to pass between, WPW patients have an extra. Or extras. When the condition flares, the heart may short-circuit or beat irregularly.

Earlier in the Miami game, "I could not breathe," Cooper said. "My heart rate was really, really, really high for a 19-year-old. We punted and I ran down on the punt, and my heart started racing and acting funny, kind of uncontrollably.

"I started tapping the top of my helmet, a signal to come out with an injury or equipment [problem]. But after a couple more plays, there was a pass at the sideline, and I just stayed out. I don't remember the last five or six plays."

In the training room, Shoop and team physician Angelo Gallante ran an electrocardiogram — an electrical recording of the heart — and knew Taylor had an irregular heartbeat. They didn't know why.

His parents were dazed. Cooper had undergone EKGs before. His heartbeat had been irregular on a few occasions while he was growing up, including once while he was a student at Marist School.

"It actually started back in middle school," he said. "I always just thought it was me being out of shape."

But nothing had been detected in previous EKGs. The condition often needs to be diagnosed with the arrhythmia in progress and even then it can be difficult to detect with an EKG.

"The issue with WPW is a very subtle difference on the EKG, so a lot of times even if it's there, it's not noticed," Gallante said. "There might be a difference of .04 second [in a heart rhythm]."

Jim Bob Taylor said it took about 15 minutes to reach the training room.

"Unfortunately, we had three families there. With Robert Hall [who'd suffered a season-ending knee injury] and his family and with Steven Sylvester [concussion] and

his family, it looked like a MASH unit.

"Cooper had pads off and was sitting there going, 'I got a problem. My heart wouldn't stop racing.'"

Robyn said, "Needless to say, I don't remember certain details."

Cooper's recollection: "Steven was more out of it than me."

'Like Cutting a Wire'

Tech defensive tackle Logan Walls was diagnosed with WPW in the spring of 2008. But his surgery was simpler than Taylor's.

"Mine was kind of the reason I wasn't able to come back after just a couple games," Taylor said. "It was supposed to be two-hour surgery, and it ended up being eight."

In WPW corrective surgery, doctors insert a catheter or catheters through a main artery. They begin in the inner groin, manipulate the catheter to the heart and use radio waves to burn away extra tissue that causes the short circuit.

"Burning the tissue is like cutting a wire," Gallante said.

As part of the highly specialized process, doctors stimulate the heart to test their work, and the patient needs to be somewhat alert for the test.

Doctors eventually burned away five extra pathways in Taylor's heart, passages that typically should have receded during youth. They tested for each one. That meant Cooper was cycled up and down through various states of consciousness while his heart was accelerated and decelerated several times.

"They can't really put you under full anesthesia because it slows the heart too much," he said. "I can remember songs that were playing, talking to the doctor about certain bands. I'd pass out and wake up."

Surgery over, his parents were in the recovery room, wincing as catheters were removed.



David Johnson/Georgia Tech Sports Information

Cooper Taylor is recovering from surgery to burn away extra pathways in his heart and hopes to be recovering the ball and running for the goal next season.

"When they pulled them out, his reaction ... if they told him they had to go back and do it again, he'd have said, 'I don't want to play again,'" Taylor's father said. "[But] Coop's a tough kid, and I am very proud of him."

Taylor had a sore chest, back, leg, pelvis and just about everything else. Plus he had four new "dime-sized holes" in his groin and right thigh.

"It was horrible, awful. I'm just so glad and thankful it is behind us," Robyn Taylor said. "He was white as a sheet. They had to keep him strapped down for three hours so he couldn't move his head or anything, so he wouldn't start bleeding. Later, he became violently ill."

First, though, he held out. Taylor had not eaten for nearly 24 hours and as midnight approached, he desperately wanted to go home. He'd been at the hospital since 7 a.m.

"That bed was made for somebody who's maybe 5-8, and I'm 6-6, strapped down, legs hanging off, couldn't move. I've

grown like two or three inches since I got to Tech," he said. "I didn't want to stay overnight. I wasn't drinking water or anything. I was afraid I'd get sick, lean forward and start bleeding."

'Horrible, Awful' Recovery

Recovery took longer than first anticipated because doctors had found the extra pathways. The four holes meant Taylor could do almost nothing physical for weeks, doctor's orders.

"I was sedentary," he said. "It was just kind of a different feeling when, for the first time in your life, I didn't have playing ball to look forward to. I lost a bunch of weight and getting my legs back to where you can run around and cut — my game is based on speed — it took a very long time."

By November, it became clear that it wouldn't be worthwhile to resume playing. He would be burning a year of eligibility in order to play a few remaining games at less than full capacity.

"For a while, he was irritated and mad, kind of thinking, 'I've worked so hard and I'm starting and we're having a great season and it's all taken away,'" said his father, who passed for a total of 1,839 yards at Georgia Tech in 1982.

Cooper and school officials have applied to the NCAA for a medical redshirt year, which, if granted, would leave him with three seasons of eligibility.

Gallante said, "The fact he's had a procedure does not put him at greater risk" for a future heart episode.

Taylor is excited too, but said he hasn't looked at tape of the Miami game yet.

"I don't really want to. I'm moving past it," he said.

"During the game, it kind of freaked me out because ... what if I could never play again? But the doctors said it was nothing that could kill me. I'm 100 percent good to go. I'll be back in spring."

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Four Juniors Jump to NFL

In the lobby of the Athletic Association office, workers were taking down an enormous Christmas tree on Jan. 11. The holidays had come and gone.

In another part of the building, another happy period was ending. Three of the football team's top junior players gathered to announce they were leaving school early for the NFL, draining the Yellow Jackets of top talent.

B-back Jonathan Dwyer, safety Morgan Burnett and defensive end Derrick Morgan wore snappy suits — signs of their transition into the professional world — as they made public their decisions. Earlier, junior wide receiver Demaryius Thomas had said he also would leave early.

All four are expected to be drafted early in the 2010 NFL draft, which will be held April 22. Morgan, an All-American, is predicted to be a first-round pick.

"We were part of something special," Morgan said of his recruiting class. "We did a lot of great things this year, a lot of things that previous teams didn't accomplish. We'll go down being part of a special team in Georgia Tech history."

'Toe Meets Leather' Heralded

Al Ciraldo, the voice of Georgia Tech football for nearly four decades, was inducted into the Georgia Sports Hall of Fame in a Feb. 20 ceremony at the City Auditorium in Macon.

Ciraldo took over the play-by-play announcing duties in 1954 and held the position until 1992. He's often remembered for pausing to dramatic effect and coming up with the phrase, "Toe meets leather."

Ciraldo passed away in 1997.

Groh Joins Coaching Staff

Paul Johnson added a veteran college and NFL coach to lead the Yellow Jackets defense. Al Groh joined the staff having most recently served as Virginia's head coach.

Previously, Groh coached in the NFL from 1989 to 2000. As a defensive coach

Football Games, Homecoming Set

The 2010 football schedule includes six home games against South Carolina State, Middle Tennessee State, N.C. State, Virginia, Duke and Miami. The Yellow Jackets also have six road games, at Kansas, Clemson, Wake Forest, North Carolina, Virginia Tech and Georgia.

Homecoming, an Oct. 9 meeting with Virginia, will have an interesting storyline as the Cavaliers will face their former coach, Al Groh, now Tech's defensive coordinator.

The Yellow Jackets, 11-3 overall and champions of the ACC last season, open the 2010 campaign at home Sept. 4 against MEAC champion South Carolina State.

The following week Georgia Tech plays at Kansas — its first trip to Lawrence, Kan. — to play the Jayhawks and new head coach Turner Gill. The only previous meeting between Tech and Kansas came in the 1948 Orange Bowl, when Tech won 20-14. The Yellow Jackets have played a Big 12 team on the road just once, a 31-27 loss at Baylor in 1992.

North Carolina, likely a preseason top 25 team, will host Tech Sept. 18 in Chapel Hill. N.C. State, on Sept. 25, comes back on the schedule for the first time since 2006. On Oct. 2, the Yellow Jackets will play at Wake Forest. The

Demon Deacons nearly spoiled Tech's march to the ACC championship in 2009, taking the Yellow Jackets into overtime before falling 30-27.

Tech steps out of conference play Oct. 16 to host Middle Tennessee State, a team that won 10 games including a bowl game in 2009.

Georgia Tech will play Clemson for the third time in just over a year when the two teams meet Oct. 23 in Death Valley. The Yellow Jackets won both meetings last year, including the ACC championship game in Tampa.

After an open date on Oct. 30, Tech will play at Virginia Tech Nov. 4 in an ESPN game that could have ACC Coastal Division championship implications.

Miami, which handed Tech its only ACC loss last season and a sure pick to be ranked high in the preseason polls, comes to Atlanta Nov. 13.

Tech's final home game comes Nov. 20 against Duke, a team that fell one victory short of being bowl eligible in 2009.

Tech and Georgia will meet for the 105th time and close out the regular season Nov. 27. UGA spoiled Tech's perfect home season in 2009, avenging the Yellow Jackets' win in Athens in 2008.

under Bill Parcells, Groh was known for his tough defenses. Prior to that, he spent more than 20 years coaching college and high school teams.

"I am extremely flattered to be invited by Paul Johnson to be part of what he is building at Georgia Tech," Groh said.

Johnson also promoted Lamar Owens from graduate assistant coach to assistant coach in charge of A-backs.

Owens, a former quarterback at Navy, replaces Jeff Monken, who left to coach Georgia Southern.

Tech Armed With Virtual Pitcher

The Tech baseball team has a new, virtual tool to continue its tradition of training top hitters.

The ProBatter PX2 simulator allows players at the plate to face off against a seemingly real pitcher.

The machine rests behind a screen, where a life-sized image of a pitcher "throws" balls toward Yellow Jackets at the plate inside a batting cage. The pitcher has a full arsenal of fastball, curve and other pitches.

Jackets Sign Local-heavy Recruiting Class

Of the 18 players Georgia Tech signed to its 2010 recruiting class, all but four come from Georgia.

Three players enrolled early at Tech, starting classes in January. The remaining 15 signed letters of intent Feb. 3.

"I am excited about this group," said coach Paul Johnson. "I feel like we signed a number of players who will be able to help us sooner than later.

"We addressed needs at every position, and we signed a number of players who are extremely athletic and versatile."

The class is defense-heavy, with five defensive backs, three defensive linemen and two safeties.

The class includes three four-star players as ranked by ESPN, all of them from Georgia: Ryan Ayers, a defensive back from South Paulding High School; Shawn Green, a defensive tackle from Grayson High School; and Denzel McCoy, a defensive tackle from Northview High School.

Two of the signees have current family ties to Georgia Tech. Cornerback B.J. Bostic,

from Jefferson County High School in Louisville, Ga., is a cousin of Yellow Jackets redshirt freshman defensive lineman Christopher Crenshaw. Athlete Jake Skole, from Blessed Trinity High School in Roswell, Ga., has a brother, Matt, who plays on the Yellow Jackets baseball team.

It's the last recruiting class for recruiting coordinator Giff Smith, who has agreed to join the Buffalo Bills as a linebackers coach under former Tech coach Chan Gailey.

The entire class is:

- Catlin Alford, offensive lineman, Adairsville High School, Adairsville, Ga.
- Jeremiah Attaochu, linebacker, Archbishop Carroll High School, Washington, D.C.
- Ryan Ayers, cornerback, South Paulding High School, Douglasville, Ga.
- Morgan Bailey, offensive lineman, Loganville High School, Loganville, Ga.
- B.J. Bostic, cornerback, Jefferson County High School, Louisville, Ga.
- Synjyn Days, quarterback, Hillgrove High School, Powder Springs, Ga.

- Shawn Green, defensive tackle, Grayson High School, Grayson, Ga.
- Deon Hill, A-Back, Central High School, Phenix City, Ala.
- Fred Holton, safety, Thomasville High School, Thomasville, Ga.
- Isaiah Johnson, safety, Sandy Creek High School, Tyrone, Ga.
- Denzel McCoy, defensive tackle, Northview High School, Lawrenceville, Ga.
- Justin Moore, place-kicker, Marist School, Atlanta.
- Quayshawn Nealy, linebacker, Lakeland High School, Lakeland, Fla.
- Charles Perkins, back, Collins Hill High School, Lawrenceville, Ga.
- Jake Skole, safety, Blessed Trinity High School, Roswell, Ga.
- Anthony Williams, defensive end, Union Grove High School, McDonough, Ga.
- Louis Young, cornerback, Good Counsel High School, Washington, D.C.
- Tony Zenon, A-Back, Deerfield Windsor Academy, Albany, Ga.

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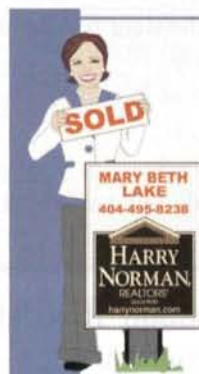
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March



Meet the President

as G. P. "Bud" Peterson attends Georgia Tech Club gatherings in Arizona, Alabama and Massachusetts on March 8, 16 and 22, respectively. gtalumni.org/clubs



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31



Arlo Guthrie will be joined on stage by his children and grandchildren to perform his standards as well as selections from unpublished Woody Guthrie lyrics at 8 p.m. March 5 at the Ferst Center for the Arts. ferstcenter.gatech.edu

Red Dress Fashion Show, just one of the Women's Awareness Month activities on campus, hits the runway at 7 p.m. March 17 to benefit the American Heart Association. cyberbuzz.gatech.edu/wam



Eric Turner

April



Illustration by Torian Parker

Georgia Tech Auto Show rolls into a parking lot near the intersection of Ferst and State streets April 3. The event is free to spectators. Awards will be presented in a variety of categories, including cars, trucks, motorcycles and alternative fuel vehicles. gatechautoshow.com

27th Annual Georgia Tech Alumni Career Fair at the Cobb Galleria Centre on April 6 includes a lunch workshop on the career game, opportunities to meet potential employers from 1:30 to 6 p.m. and a networking mixer. gtalumni.org/careerfair

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



The Masters is the destination for a special Alumni Travel tour April 5-11. The tour package includes tickets to the golf tournament, admission to the world-class hospitality at The Executive Club and gourmet cuisine. gtalumni.org/tours/masters



Eric Turner



Pi Mile Road Race winds its way around campus on April 17. Register at gtalumni.org/pimile.

Earth Day at Georgia Tech on April 23 will include a recycled art project, recycled fashions, a clothing swap and an electronics recycling station. In its 13th year, Georgia Tech's celebration is the largest Earth Day event in the Southeast. earthday.gatech.edu



It's Electric

From Alumni Publications' miscellaneous file (We call it the "what-the" file.) in the cabinet stuffed with black-and-white glossies comes this gem. Actually, there are three 8-by-11 copies of this one. None of them include a written explanation of what's going on or when and where the photo was taken.

The note on the windshield includes the words

"electric vehicle." Sweet. Those wheels are just made for an excellent adventure. And is that a cassette player in the background to take on the road trip?

You, with the Eddie Money hair, if you or one of your buds could let us know what's going on here, we'll be happy to send you the glossies. E-mail us at editor@alumni.gatech.edu.



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