under the sea

Researchers dive into study coral reefs
Under the Sea
A team of Georgia Tech marine biology scientists and students spent 10 days living in an undersea laboratory, the beginning of a two-year mission to explore the coastal ocean and study dying coral reefs.

Strategic Leadership
Annie Hunt Burriss, Jim Lientz and Bill Todd were independently pursuing other successful endeavors when Gov. Sonny Perdue persuaded them to join his administration. Now they are working to help mold a New Georgia.

Following Lewis and Clark
President Wayne Clough kept a journal of a seven-day voyage through history on a cruise that explored the Columbia and Snake rivers during the bicentennial anniversary of the Lewis and Clark expedition.

Billion Dollar Brands
Georgia Tech has long been well represented among the ranks of America’s top business executives. Here’s a sampling of Tech alumni who have risen to prominent positions in some of the best-known companies in the world. Each of the featured business leaders is associated with a corporation with more than $1 billion in annual sales.
5 Feedback

9 Tech Notes
Alumnus Commands Space Station
Dangerous Game
Virtual Reality Training Aids Firefighters
WREK Moving to New Studios
Legislator Says Budget Crunch Will Continue
Savannah Campus Dedicated
Deen Day Sanders Named Outstanding Alumna
Banner Season
Newborn Posthumously Inducted into State Hall of Fame

62 Faculty Profile
Karen Dixon: Highway to Higher Ed

64 Photo Finish
Championship Blowout
Meeting Orville Wright

I found the feature on Jani Macari Pallis and the Wright brothers to be of special interest (GEORGIA TECH ALUMNI MAGAZINE, Fall 2003). After graduating from Georgia Tech in 1941, I went to work for the National Advisory Committee for Aeronautics, the predecessor agency of the National Aeronautics and Space Administration, and the next year I was transferred to the agency headquarters in Washington, D.C., as the most junior of the six-man engineering staff.

It was a dream assignment. Through that small office the legends of aviation came to attend research sessions and to meet with my boss, director George Lewis. I had a chance to see such pioneers as Orville Wright, who was honorary chairman of NACA; Jimmy Doolittle, who served on a fuels and lubricants committee; Igor Sikorsky, on a rotating wing aircraft panel; and Howard Hughes, who was promoting his Spruce Goose project.

I recall one day when Orville Wright, then in his eighties, came to attend a meeting. It was timed to coincide with the date of the annual Wright Brothers Lecture sponsored by the Institute of Aeronautical Sciences, scheduled for about 4 p.m. at the U.S. Chamber of Commerce auditorium near the White House.

The session at our office ran a little late. The people who wanted to attend the Wright Brothers Lecture got into a couple of cars at our DuPont Circle location and drove to the auditorium on Lafayette Square. We were late and, with Mr. Wright in tow, slid into the back row.

The room was packed and the audience was impatient. After a few minutes the chairman got up and said something to the effect that they would wait a few more minutes, hoping that Mr. Wright would attend. Of course, those of us in the Wright party pointed to him and he was escorted to the platform amid an ovation.

This little episode told a lot about the character of Orville Wright. He did not seek publicity and was perfectly content to sit in the back row. That was the only time I got to see him. Shortly afterward I was transferred to the NACA Ames lab at Moffett Field, Calif. I was commissioned in the Navy and lucked into another dream assignment — testing the Navy’s first jet fighter.

Wright Wing

My son-in-law, Jim Bennewitz, ChE 74, receives the GEORGIA TECH ALUMNI MAGAZINE, and I spent a happy occasion reading your excellent article, “Proof of Concept,” in the Fall 2003 edition. I must disagree with one point. The article states, “The right wing of the flyer is longer than the left wing. The Wright brothers designed...”
the craft to compensate for the weight of the pilot.” The compensation is for the weight of the motor, not for the weight of the pilot, if you will look closely at the drawings.

My granddaughter, Nancy Bennewitz, graduated from Agnes Scott College and was accepted to medical school, but instead entered Georgia Tech’s bioengineering graduate school and has seldom been seen or heard from since.

Dan Hale
Watkinsville, Ga.
You are correct, the motor was heavier than the operator. The motor weighed about 200 pounds and the operator about 165 pounds.

Authentic and Inspiring

The excerpt from “Authentic Leadership” by Bill George correctly points to the need for leadership in business and business leaders with integrity.

During the Internet boom and subsequent bust, it seemed it was all about “the play.” It wasn’t about creating something. It was about formulating something. It was get rich quick and get out. The investments were in the stock — the paper — not the company, the people.

Being a technologist, I have been a part of a handful of start-ups — before the Internet, during the boom and during the bust.

My first job out of college was at a start-up in an advanced technology development incubator back when start-ups were less common. It was the proverbial start-up with the 20-hour workdays, sleeping on the floor under the desk, lots of Mountain Dew and late-night runs to the 24-hour Krystal.

The incubator space was not A-list office space. It was like a warehouse with indoor/outdoor brown carpet and government surplus furniture. I used to call the building “a dorm for companies.” It had that feel to it.

The group of people had just surpassed 10 in number and it was a tight-knit family with lots of drive, enthusiasm and talent. Even though it ultimately imploded, I loved every minute of it all and I will always remember it.

Fast-forward 15 years to a later start-up in which I was a telecommuter. The job started off well enough, but the business got sidetracked on another front and the original project became simply a means of siphoning off its revenue to fund the new venture. The new venture was always described as something that could be a “$30 million flip.” It made me physically sick at times with the lying, the lack of ethics and the squandering of money.

The flip flopped. Oddly enough, the same person had founded both of the companies. What a contrast.

There are many books out there with titles espousing “the way” for executives. In light of the 100th anniversary of the Wright brothers flight, perhaps we need a book about the “Wright Way” — about rediscovering the secrets of the Wright brothers to inspire a new generation of entrepreneurs. Their imagination and passion was reflected in those entrepreneurs who led the birth of the personal computer revolution and founded Silicon Valley. Something authentic.

Todd A. Hartle, ICS 87
Decatur, Ga.
Todd Hartle is a technologist, technology columnist and writer who founded Fountainhead Information Systems, www.TitleWeb.com, in the mid-1990s.

Personalized Homecoming

We have attended Homecoming for each of the last six years — since moving from Missouri to South Carolina, where my husband Greg, AE 87, is practicing medicine.

After attending Homecoming for our 10-year reunion and seeing no one we knew, we decided that the next time we’d call friends first and arrange to meet for Homecoming weekend.

The next year we joined two other couples for Homecoming. Each year our group has grown, and this year we bought 30 football tickets for our group! Homecoming weekend has become a blast that we look forward to every year, and much of it is because of this group of people. We have people who drive to Atlanta like we do, and some who fly from California, Chicago and Florida each year. This year we had a family of four who drove from Baltimore!

We have created our own “reunion group” and suggest that others do the same for a great Homecoming experience!

Jamie Burnette Tarasidis
AE 87, MS AE 88
Greenwood, S.C.

Keeping Active

I finished “my time” at Georgia Tech in December 1966 — like many, a little later than expected. I got “lost” on campus for almost a year and during that time forgot why and what I was there for.

I have two sons who graduated from Tech — Andres Aviles Amador, IE 96, and Diego Aviles Amador, CE 00. My older brother, Bolivar Aviles Alfaro, IM 59, and his son, Eric Alfaro, ICS 87, are also alumni. My youngest son, now 16, says he’s Georgia Tech material. After a stint at North Georgia Military, we will know.

I suspect we hold a Tech Guinness record — throwing out the lowest GPA (mine), I believe we probably have the highest family GPA. What kind of bonus could we get — an all-you-can-eat award at the Varsity? How about a full scholarship for the 16-year-old?

One of my fraternity brothers (now I kind of remember that year that I got lost on campus — it was at the Sigma Chi house) was Joe Cooper, IE 69.

I’m a Habitat for Humanity volunteer in Guayaquil, Ecuador, and I’ve enjoyed reading about the involvement of some of Tech’s alumni — Charlie Hanna, CE 62, “Hands On,” and John Bland, MgtSci 83, “Compassionate Calling,” both featured in the Winter 2003 ALUMNI MAGAZINE; Nathan Calhoun, Cls 96, “Call of the Open Road,” in the Fall 2003 TECH TOPICS; and John Meredith, MS Mgt 85, “Aspiring Youth Program,” in the Spring 2002 ALUMNI MAGAZINE.

Jeronimo Aviles-Borrero
Guayaquil, Ecuador
Dangerous Game

Sand and traps aren’t the biggest hazard on this golf course. First Lt. Tyler Brown, HTS 01, Mgt 01, poses at the course located at Camp Bonifas, a United Nations joint security area near South Korea’s demilitarized zone. “Our battalion was performing a quick reaction force mission there for several weeks,” says Brown, who was an undergraduate student government president and went through the Army ROTC program at Tech. Brown is a platoon leader serving at Camp Hovey, Korea, in Charlie Co., 2nd Infantry Battalion, 9th Infantry Regiment, under Lt. Col. Joseph Southcott, MS OR 92, who is the battalion commander. This is one course where golfers may request a “shootin’ iron” as the best approach to a hole.

Tech Alumnus to Command Space Station

The last time NASA astronaut William S. “Bill” McArthur, MS AE 83, went to the International Space Station, he helped prepare the orbital outpost for its first crew. This spring, McArthur will have the opportunity to try it out for himself. McArthur, an astronaut at the Johnson Space Center in Houston, and Russian cosmonaut Valery Tokarev have been named as the Expedition 9 crew, set to blast toward the station aboard a Russian Soyuz spacecraft in April. They plan to spend several months residing and working on the station. McArthur became an astronaut in July 1991. He flew on Discovery’s shuttle mission in October 2000, performing more than 13 hours of spacewalks to help attach the Z1 Truss and Pressurized Mating Adapter 3 to the station.
Virtual Reality Training Aids Firefighters

Georgia Tech researchers are using virtual environment technology to better train fire commanders.

Atlanta Fire Department officials approached Tech about developing a fire command training simulator to better prepare their officers. On average, 102 firefighters die in the line of duty in the United States each year.

“The world that firefighters work in is incredibly complex. Every fire and every situation is different, so a virtual environment, which can be changed fairly easily, is a good fit for this type of training,” says Chris D. Shaw, senior research scientist in the College of Computing, a faculty member in the Graphics, Visualization and Usability Center and head of the virtual reality project.

The Firefighter Command Training Virtual Environment simulates the progress of a fire in a single-family home and responds to the fire commander’s orders. The virtual environment allows the user to navigate around the fire scene, direct firefighters and watch them execute commands and see fire and smoke reacting to such changes as the opening of a window.

The user sees the house on fire on a computer screen or head-mounted display and gives verbal commands as he would in a real fire. The system operator types the officer’s commands into the computer system via code. The officer then sees animated firefighters react to his commands.

WREK Moving to New Studios

On March 25, 1968, Larry Griggers, IM 71, made Georgia Tech history as he announced, “Ramblin’ Wreck Radio is on the air!”

WREK, Tech’s student-operated radio station, 91.1 FM, has been broadcasting ever since, offering a diverse, sometimes bewildering array of campus sports and music ranging from free-form jazz to thrash metal to “Kosher Noise,” a Jewish music program.

The station operates out of the Human Resources Building, WREK’s home since 1978, where yellowing paint peeks through from wall space not covered by concert fliers and other music memorabilia.

This spring, the station leaves its cramped confines and moves to new facilities in the Student Center Commons, formerly the campus bookstore. The Institute has allocated 1,330 square feet of the $6.1 million renovation to bring WREK to the center of campus.

“The big change will be visibility,” general manager John Lyon says. “A lot of students still don’t know that WREK exists. The studios will have a glass wall facing the commons area, so they can see us broadcasting.”

When WREK radio makes its move, it hopes to have new equipment as well as new quarters.

Lyon, a third-year computer science major, says moving the antiquated equipment across campus may knock the station off the air for weeks, even months.

“We need to be able to make a seamless move and that means replacing equipment,” he says.

The station also needs to make the conversion from analog to digital format.

“The conversion will be expensive,” says chief engineer Thomas Hildebrandt, “but while we are moving is the best time to do it.”

Glenn Sirkis, Mgt 74, WREK’s second general manager, is leading a campaign to involve alumni support for the station.

“When WREK needs help and we’re asking WREK alumni to step in and help,” Sirkis says. “There is an embarrassing amount of equipment in the studio that I recognize from 1971. They get the same amount of student activity fees, $40,000 a year, as we got when I worked there and that’s just not enough.” Alumni and friends wishing to contribute should visit www.wrek.org/momentum.

General manager John Lyon works the afternoon shift at radio station WREK.

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Legislator Says Budget Crunch Will Continue

Alumni network of volunteers to keep lawmakers informed

Georgia state Rep. Richard Royal told Georgia Tech Alumni Legislative Network members that the state’s budget will get tighter this fiscal year and in 2005.

Royal, IE 62, who spoke at the network’s annual meeting in November, says fiscal year 2004 has been “a tough year” for the state because of declining revenues and that the outlook is the same for 2005.

“Most of Georgia’s revenues come from state taxes on income for corporations and individuals and from sales taxes,” Royal says. “Although the economy appears to be doing slightly better as collections from taxes on individuals and sales taxes are up, corporate tax collections are down, indicating that profits are still depressed.”

Georgia Gov. Sonny Purdue earlier announced that the current year’s budget will be reduced by an additional 2.5 percent and that the budget for fiscal year 2005, which begins July 1, will be reduced by another 5 percent.

Royal, chairman of the House Ways and Means Committee, advised Alumni Legislative Network members to be vigilant and let their legislators know Tech needs their support to continue its economic development imperus.

The Legislative Network is a volunteer alumni group designed to educate and inform state legislators about Tech’s programs and needs.

President Wayne Clough says state support for Tech is substantial, but is declining as a percentage of the Institute’s financial picture.

“We’re receiving today the same financial support we received in 1999, even though we have 1,800 more students and we’re doing $100 million more in research,” Clough says.

Tech is leveraging state funding through many initiatives including the Economic Development Institute, which aided more than 1,600 companies in 2002; the Advanced Technology Development Center, Tech’s incubator for new technology companies with 44 in its program; and the newly dedicated Georgia Tech Regional Engineering Program in Savannah, attended by more than 400 students.

“We’ve minimized the impact of state budget reductions on the academic mission of Georgia Tech by directing most of the reductions to the administrative and support areas of Georgia Tech,” Clough says, but so far Tech’s funding reductions from the state exceed $28 million.

Clough says the state has done much to help Tech despite the difficult economy — citing the announcement of the new Nanotechnology Research Center at Tech and the $45 million in state support Purdue has pledged to match a $36 million gift to Tech from an anonymous alumni donor.

For information on the Alumni Legislative Network, call (404) 894-1238.

75 Years Ago

Georgia Tech climaxed a 10-0 football season with an 8-7 victory over California in the New Year’s Day 1929 Rose Bowl. It was a game made famous by a misdirected play by California center Roy Riegels, who caught a Tech fumble, got spun around and sprinted frantically for the goal line. He didn’t realize he was running the wrong direction until the last moment, and when he did, Tech gang-tackled “Wrong Way” Riegels on the 1-yard line. Tech blocked California’s attempt to punt out of the end zone, resulting in a two-point Tech safety.

50 Years Ago

Although there were only 10 female students on campus in 1953, they set in motion the creation of a sorority. Seven of the 10 female students formed Tau Kappa, which became a chapter of the Alpha Xi Delta national sorority in 1954, the first sorority on the Georgia Tech campus and the first such chapter located on the campus of an engineering institution.

25 Years Ago

President Jimmy Carter, who attended Georgia Tech in 1942-43, returned to campus on Feb. 20, 1979, to give a major policy address to more than 8,000 people at Alexander Memorial Coliseum. Carter also received the Institute’s first honorary degree — a doctor of engineering (honoris causa). The Alumni Association presented Carter with the Alumni Distinguished Service Award.
Savannah Campus Dedicated as Hub for Technology Growth

Georgia Tech’s Savannah campus was formally dedicated in November as the new hub for the academic and research facilities that support the Georgia Tech Regional Engineering Program.

The new campus is the cornerstone of the largest technology corridor project in southeast Georgia’s history and includes branches of the Economic Development Institute and the Advanced Technology Development Center to help Georgia entrepreneurs launch and build successful companies.

Located near the Savannah International Airport, the campus occupies about 50 acres and includes three buildings: the Program Administration and Resource Building, the Economic Development and Research Building and the Engineering Laboratory and Analysis Building. The facilities include 25 laboratories, six classrooms, 12 telecommunication studios, a library and faculty and administrative offices.

“Our aspiration is to define the technological university of the 21st century. That obviously means offering top-quality education, research and economic development programs. But it also means being innovative and entrepreneurial about creating opportunities for students, faculty and staff to interact with each other and with the community around them,” Tech President Wayne Clough says. “Georgia Tech-Savannah is an exciting model for creating those opportunities, and this campus gives us a new tool both to achieve excellence and to help drive economic growth in southeast Georgia.”

GTREP offers students who live in the southern part of the state an opportunity to earn a Georgia Tech degree through distance-learning connections and on-site classes while remaining in the area. Enrollment for the fall was about 525 undergraduate students. Students take their core classes at one of the partner schools — Armstrong Atlantic State University, Georgia Southern University or Savannah State University — before transferring to Georgia Tech at the beginning of their junior years.

More than 30 students are pursuing graduate degrees in the areas of civil and environmental engineering, electrical and computer engineering and mechanical engineering under the advisement of 18 Savannah-based faculty.

Deen Day Sanders Named Outstanding Alumna

Honorary alumna Deen Day Sanders was awarded the Outstanding Alumna Award at the annual Women’s Leadership Conference at Georgia Tech in November.

The student-run conference, sponsored by Tech’s Women’s Resource Center, honored Sanders along with outstanding students, faculty and staff.

Mary Lynn Realff, one of the co-directors of the Center for the Study of Women, Science and Technology, was selected as Outstanding Faculty Member; Amy Stalzer, assistant director of Success Programs at Georgia Tech and director of FASET Orientation, was voted Outstanding Staff Member; Christina Robinson-Scherrer, IE 99, a fifth-year doctoral student in the School of Industrial and Systems Engineering, was named Outstanding Graduate Student; and Stefanie Lynn Belcher, a fourth-year materials science and engineering student, was named Outstanding Undergraduate Student.

Sanders, who received her honorary distinction from Tech in 1980, is chair of the board for Cecil B. Day Investment Co. and is vice chair of the Cecil B. Day Foundation.

In addition to philanthropic contributions that have funded scholarships and endowments at Georgia Tech and other universities in Georgia and Florida, Sanders founded the Cecil B. Day Laboratory for Neuromuscular Research at Massachusetts General Hospital to research treatments for muscular dystrophy and amyotrophic lateral sclerosis. Two of Sanders’ sons suffer from a rare form of muscular dystrophy.
Banner Season

The Georgia Tech volleyball team sweeps rival Georgia at home 30-23, 30-27 and 30-27, on its way to becoming the Atlantic Coast Conference regular season champs. Tech lost the ACC tournament to Maryland, but entered the NCAA tournament ranked 9th nationally and hosted the first and second round matches at Alexander Memorial Coliseum.

Tech’s Kele Eveland was named the Atlantic Coast Conference Player of the Year while Marisa Aston, Lynnette Moster, Alexandra Preiss and Lauren Sauer were each named to all-Atlantic Coast Conference team. Sauer and Aston earned all-tournament honors as well.

Yellow Jacket senior setter Kele Eveland, left photo, sets up a kill. The Yellow Jackets volleyball team, top, celebrates its sweep over rival Georgia.

Mewborn Posthumously Inducted into State Hall of Fame

Shirley Clements Mewborn, EE 56, one of the first two women to graduate from Georgia Tech, was posthumously inducted into the state of Georgia Technology Hall of Fame in November.

“Shirley was inducted for her significant contributions to high technology in Georgia,” says Susan O’Dwyer, spokesperson for the Hall of Fame. “She is the first person to be unanimously elected.”

Mewborn, who died July 10 after a battle with cancer, retired in 2000 after a 41-year career as vice president and treasurer of Southern Engineering. She served on the Georgia Tech Foundation, School of Electrical and Computer Engineering and Georgia Tech Research Corp. boards and was the first woman to serve as president of the Georgia Tech Alumni Association.

The Technology Hall of Fame was established in 1993 to recognize the achievements of those who helped shape the development of technology and industry in Georgia, O’Dwyer says.

Other alumni who previously have been inducted into the Technology Hall of Fame include Ben Dyer, IE 70; Allen Ecker, EE 57, MS EE 58; Jim Edenfield, IE 57; Bill Goodhew, IM 61; Dennis Hayes, Cis 73; Don House, Text 63; MS Text 66; John Imlay, IM 59; Parker “Pete” Petit, ME 62, MS EM 64; John Pippin, EE 51; Leland Strange, IM 65; and Bill Todd, IM 71.
Technology Square is home to Georgia Tech's College of Management, a Global Learning Center, a Georgia Tech Hotel and Conference Center, the Economic Development Center, Barnes & Noble Bookstore, retail shops, restaurants and a parking deck. Across the street is the Advanced Technology Development Center.

Technology Square is more than an expansion of the Georgia Tech campus. It connects the campus to Atlanta's technology corridor. And it's the engine that will drive the development of a high-tech business community in Midtown, says Georgia Tech President Wayne Clough.

"Georgia Tech has influenced Atlanta economically with the number of high-tech businesses it has attracted," says Clough. "And we want and expect more to come. But you need a geographic center, a highly visible entity that stands for Atlanta's high-tech corridor, and that entity is Technology Square. The millions of people who travel down the I-75/85 highway will see and identify this area as the technological heartbeat of Atlanta."

Years from now, people may look back on Technology Square as the benchmark of yet another identity for the city — as a crossroads for ideas, innovation and new technology — but the opening of Technology Square this summer is the fruition of a plan that began many years ago. The decision to purchase derelict land across the interstate was finalized in 1995.

A nonprofit that handles contributions and investments for the Institute, the Georgia Tech Foundation bought the eight acres for $11.9 million in 1997.

John Aderhold, EE 45, IE 67, a trustee emeritus of the Georgia Tech Foundation who has been instrumental in the World Congress Center and the Georgia Dome, says Technology Square is a project that "not only feeds what is going on in Atlanta and Midtown, it ties it all together, from the Atlantic Steel project to the downtown development. Activity begets activity. This is a step in a journey that started a long time back and still has a long way to go, but it is a big step, a beautiful step."

The Georgia Tech Foundation is planning ahead and helping prepare for Georgia Tech's success every step of the way.
TECH RESEARCHERS DIVE IN FOR TWO-YEAR CORAL STUDY
Day 1, Nov. 10

For everyone who has ever wondered what fish in an aquarium feel like, well, I think I know. We are now living about 47 feet under the ocean in a big metal tube. We have several portholes where we can watch the fish outside. Or are they really watching us like a reverse aquarium, a “humanarium”? Sometimes I get the feeling that the fish just swim by to take a look at us to see what the humans are doing.

— Deron Burkepile

We were dropped off at our study site at about 5 p.m. The plan was to dive for three hours then go to the Aquarius, but it got dark after an hour so we came in after two. It’s interesting approaching the Aquarius at night. It’s a lot like approaching a spaceship you find in your childhood — faint lights glow off in the distance and, as you go through strange low-frequency murmurs and throbbing sounds of compressors and pumps, there is the Darth Vader breathing sound made as air enters and exits the wet porch as waves pass overhead. Clouds of fish swirl around and finally you see Aquarius with lights glowing from view ports and mounted around the structure to enable the aquanauts to see activities outside. Wonderful experience.

— Mark Hay

Day 2, Nov. 11

It’s pretty cool seeing the nocturnal creatures come out from hiding and unravel for the evening. I had to carefully untangle a basket star that was busy weaving itself into the tool bag that I use to hold the tools. It was trying to use the bag itself as a reef. Really beautiful structures are being formed.

— Todd Barsby

By 6 p.m. at this depth and time of year it is truly dark. To free our hands for working, we strapped small flashlights to our mask straps and were able to work productively for the extra two hours of darkness.

— Mark Hay

Day 3, Nov. 12

For the view port near my bunk, I see fish dart frantically to and fro while jellyfish ride the current past. I’m not sure if I will ever get used to looking outside and seeing these sights.

The day passed rapidly, filled with construction details. It’s easy to get lost in the work — hammer, hammer, cable tie and snip — then a small, brash lone fish returns to loiter in its tailored algae garden, immersing you right back into the reef. It’s crazy how quickly we’ve habituated.

— Todd Barsby

We are concerned about moray eels being inadvertently caged in and getting our fish. We noted one in a cage today, but it was not especially large and we can probably get him to leave with minimal hassle. Cage 24 has a lot of holes in it. There is obviously a big eel there. This morning there was a large hole blasted directly through the chicken wire where something came out through the top of the cage and a second hole in the side where something came back in. It looked like a rocket had gone through the cage material. These are impressive animals.

— Mark Hay

By Maria M. Lameiras

A team of four marine biology scientists and students from Georgia Tech spent 10 days in November living like fish to begin a two-year study that could help save dying coral reefs.

Tech’s “aquanauts” — including Georgia Tech professor Mark Hay, postdoctoral associate Todd Barsby, PhD student Deron Burkepile and research specialist and technician Alex Chequer, along with National Undersea Research Center scientists Mark Hubble and Thor Danmire — were aboard the National Oceanic and Atmospheric Administration-owned Aquarius ocean laboratory in the Florida Keys National Marine Sanctuary. Tech graduate students Zach Hallinan, Brock Woodson and Anne Prausak provided support for the mission from the surface, diving to the site on a daily basis.

Aquarius, a 47-foot cylindrical lab, is deployed three and a half miles offshore, at a depth of 60 feet, next to spectacular coral reefs. Mission scientists use saturation diving to study and explore the coastal ocean.

Hay, who led the Aquarius mission, is an experimental ecologist and holds the Linda and Harry Teasley Chair in Environmental Biology in Tech’s College of Sciences.

The experiments the team are conducting involve large cages attached to hard-bottom communities in the vicinity of Aquarius to enclose two red-band parrot fish, two ocean sunfish or one of each species in each cage to determine their long-term effects on community structure, how small mobile species that can move through the mesh of the cages respond to these community changes and how algal chemical and mineral defenses generate the mechanisms that drive these changes, possibly affecting seaweed overgrowth of corals.

“By making small patches of reef with different complements of fish to see how it affects the community structure,” says Hay, adding that the research is important because of the rate at which coral reefs are dying around the world.

“Over the last 20 years, reef cover has gone from 60 percent in some areas of the Caribbean to 3 percent. Reefs I studied to start in 1977 are now essentially gone.”

This mission on Aquarius was the beginning of a long-term study by Hay and his team. The team will monitor changes in algal and coral cover and composition within the 32 6-foot-by-6-foot-by-3-foot cages. Within a month or two, they should start seeing differences in seaweed growth and cover and how it affects the corals, Hay says. The team photographed the corals in each cage at the end of the November mission and will rephotograph the corals after six months and a year to see how the corals have changed.

“We were doing in this saturation building was the cages and getting the fish into them and getting the experiment set up. We’ll go back every month to six weeks for the next two years to monitor them,” Hay says.

“Next year we will do another mission to get the data we need from this set of cages, then rebuild the cages and put different fish in. We are trying to understand what the biggest, most useful signals we find might be because, theoretically, the results we find for south Florida will be useful in the Bahamas and elsewhere in the Caribbean.”

The team spent nine hours per day diving, the physiological limit at that depth while saturated. “Saturation diving” is a technique that permits divers to remain at high pressures for weeks or months without having to often undergo decompression and waste the diver’s time resurfacing each day.

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— Mark Hay
On the way to the site this morning, I was pulling along the excursion line not paying adequate attention and ram my forehead into a jellyfish. Luckily it was a moon jelly and not a cauliflower jelly. Stung at the time, but went away before long. We have seen some massive cauliflower jelly. One that came over us had tentacles extending 10 to 12 feet down through the water column.

Mark Hay

A lot of the suits we got were not comfortable, inefficient and fighting back. We are freezing, despite multiple wet suits, and they are rubbing the skin off our bodies in places, causing rashes in others. We need to dry out.

Mark Hay

What we eat: chips, chocolate, cookies and cheese — the four Cs of Aquarius. We supplement our diet with anything microwavable or rehydratable — yum. This makes for some great snacking — and some not so great meals, as you could well imagine. My take-home lesson of the day: Dehydrated scrambled eggs and bacon are best used directly as fish food. Just add the more common, intestinal track altogether. Another interesting night dive: It started to rain jellyfish. Their presence, or more accurately, the small fish that live amongst the jellyfish tentacles, sent the surrounding reef fish into a feeding frenzy. Up off the bottom they dart to feast on anything in front of us; a gigantic cauliflower jellyfish exploited onto the reef, pumped by the current. The swimming reef fish attract the barracuda. Through our proximity, the newly hatched small fish of the tragic jelly’s tentacles race to us for safe haven. For the entire drift dive back to Aquarius, we have hundreds of tiny fish swimming our heads.

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Mark Hay
Annie Hunt Burriss, Jim Lientz and Bill Todd share more than Georgia Tech diplomas. All three play key roles in Gov. Sonny Perdue’s administration. And they’ve crossed paths many times before.

“There’s a bond of trust and friendship,” Todd says. Todd and Burriss met during a Lamaze class. Todd’s wife was preparing to give birth to son Hayes, now a College of Management student at Georgia Tech. Burriss was learning the childbirth method before the arrival of daughter Jennifer.

Todd and Lientz have traveled in the same circles for years.

“Jim was chairman of the Georgia Chamber of Commerce. I was a vice chairman on his team. He was chairman of the Atlanta Chamber of Commerce and I was on the board. He was a board member at the Georgia Research Alliance. We’re members of the Rotary Club of Atlanta together. We’ve hunted quail and played golf for years,” Todd says.

They share another trait. All three were independently pursuing other successful endeavors when Gov. Perdue persuaded them to join his administration. Now the three are working side by side to help mold a New Georgia.
Still, Burriss found the idea of rolling up her sleeves and getting in the trenches for policy, legislative affairs and executive appointments. Burriss was associate vice chancellor for economic growth and development at Georgia Tech, where she helped launch the Technology Innovation Park as director. She directed Georgia Tech’s Nanotechnology Research Center and helped shape a new Georgia Tech Management College with Executive MBA offerings.

She became acquainted through Perdue’s Senate roles, including chairing the Higher Education Committee, as she sought to enlighten state lawmakers about the Intellectual Capital Partnership Program, an economic development initiative she conceived and directed while working for the Board of Regents of the University System of Georgia. She told me, “If you’re going to provide public service at a historic time working for a man I believe to have great integrity. I’m not an R and I’m not a D. There are some people that want to support the man elected by the people. I want Georgia to be a better place now and great in the future.”

She also was raised to be independent. “I decided that I’d get myself through, that my parents didn’t owe me anything. They’d already given me four years of college,” Burriss says, explaining she enrolled at Tech so she could take advantage of in-state tuition and work her way through school.

“When someone was prejudiced because I was a woman, that gave me a real advantage,” she says. “I knew that his thought process was flawed because he discounted me because I was a woman.”

She concludes that Tech still was tough, particularly for a female in the 1970s. “It was a culture shock” for a female who had attended women’s colleges and worked summers at an all-girls camp.

“I was shocked out of my gourd,” she says. “I was in California giving a speech to the deans of arts and sciences from across the country. I had gone out to dinner that night at Tech provost Jean-Lou Chameau and President Wayne Clough to see how Stanford had played such an catalytic role in the economic development of the Silicon Valley. I was interested that we might improve Georgia’s economic future by improving how we connect intellectual property from the university lab to market.”

Her thoughts were thousands of miles away from the inauguration of Gov. Perdue. “I was shocked because I haven’t been involved in a political campaign since a guy from Georgia was running for president,” she says. “I wasn’t involved in state politics, but I am not political.”

It wasn’t her politics that attracted Perdue to Burriss. They became acquainted through Perdue’s Georgia Senate roles, including chairing the Higher Education Committee, as she sought to enlighten state lawmakers about the Intellectual Capital Partnership Program, an economic development initiative she conceived and directed while working for the Board of Regents of the University System of Georgia. She told me, “If you’re going to provide public service at a historic time working for a man I believe to have great integrity. I’m not an R and I’m not a D. There are some people that want to support the man elected by the people. I want Georgia to be a better place now and great in the future.”

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Jim Lientz, IM 65, laughs as he acknowledges that the quote always going to be like this, I quit.”

“Actually, I told the governor that somewhat ironic. You have to keep your sense of humor in most anything you do, particularly around here.”

Lientz wasn’t looking for a job when Sonny Perdue, then the governor-elect, called shortly before Christmas 2002 and requested a meeting.

“I had a job. I was retired from Bank of America. I had gone back to work after about a year with some friends of mine in a little financial services business. I was very pleased with what we were doing and I wasn’t looking for something else to do,” he says.

Lientz was taken aback when he learned what Perdue, only a casual acquaintance, wanted from him.

“We discussed each other’s philosophical approaches to leadership, what his approach was to how the state should be managed,” Lientz says. “He showed me an organizational chart and asked me what I thought. I told him I thought that made perfect sense, that it would be a good way to think about running the state. Then he said, ‘I’d like you to consider this job,’ and he pointed at the chief operating officer’s job on the chart.

“I told him I needed to talk to my wife about it, I needed to talk to my business partners and, most importantly, I needed to pray about it. He said, ‘If you’ll do those things, then you’ll get the right answer.’”

Just days before the dawn of the new year and just weeks before the new governor took office, the Perdues and the Lientzes had dinner together.

“Frankly, my wife had some pretty specific questions about how hard I was going to have to work,” Lientz admits. “This is a full-time job, if anybody should ask you, 10 or 12 or 15 hours a day.”

“Actually, I told the governor that somewhat ironic. You have to keep your sense of humor in most anything you do, particularly around here.”

Lientz knew it would be a tough job. But he also knew he might live to regret turning it down.

“In four years I might be looking back and saying, ‘Boy, I blew it. I had a chance to go serve the people of Georgia in this capacity and I didn’t take advantage of it.’ I just felt like it was the right thing for me to do.”

Still, there was the matter of the job itself.

“Georgia has never had a chief operating officer. There are similar positions in other states, but as far as we can tell, there is no other state that has a chief operating officer. There wasn’t a job description that was defined,” Lientz says.

The political arena also was unfamiliar territory.

“The political dynamics were interesting — a Republican governor and a Democratic lieutenant governor. We had the first Republican governor in 130 years. We had a Democratic speaker and a Republican Senate for the first time ever.

“The toughest part of my job has been to generate enough patience because clearly things don’t happen as rapidly in the public sector as they do in the private sector. A lot of times I’ve said, ‘Why don’t we just do this? It makes perfect sense to me.’ Then it’s been pointed out to me that there is a statute that requires it to be done the way we’re doing it. I’ve found that pretty frustrating, but I have to keep reminding myself there is plenty that we can make progress on.

“We have tried to emphasize thinking about new ways of doing things and about the fact that just because we’ve always done it that way doesn’t make it right. We really need to be extraordinarily creative in what we do. We’re encouraged people to think outside the box, to take responsibility for their actions, not wait for somebody to tell them what to do.

“There are still days when Lientz wonders why he agreed to become the state’s first COO.

“I probably do that at least once a week,” he says, laughing again. “But I really believe that I have made a contribution and will continue to do so. I go home tired, but I usually go home feeling like we’ve made some real progress and I’m happy that we’re doing that.”

Asked if he ever had aspirations of seeking political office, he answers, “No, if I ever had them, I don’t have them now. I respect what our elected officials do, I really do, but I have no interest in doing that.”

He laughs again before returning his attention to the serious business of the 2005 budget.

“I’m the business guy

Jim Lientz breaking ground as state’s first COO

As his first year on the job as the state of Georgia’s chief operating officer draws to a close, Jim Lientz retains his sense of humor.

Back in April, Lientz was quoted as saying, “If it’s always going to be like this, I quit.”

Lientz, IM 65, laughs as he acknowledges that the quote was accurate. "Actually, I told the governor that somewhat in jest. You have to keep your sense of humor in most anything you do, particularly around here.”

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“Frankly, my wife had some pretty specific questions about how hard I was going to have to work,” Lientz admits. “This is a full-time job, if anybody should ask you, 10 or 12 or 15 hours a day.”

“A lot of times they would have had to read about that in a memo or the newspaper,” Lientz says.

“We’re not interested in telling the Board of Regents or the particular university presidents how and where they need to allocate their cuts. That’s their responsibility. Perhaps there will be some class size differences,” Lientz says.

“Georgia has a great higher education system, two in the Top 20 of public universities in the country. We’re certainly not going to take it apart, but we’re having to ask them to try to find new ways to do things.”

Lientz admits that his golf buddies and all his “new best friends” treat him differently than they did when he was president of the Mid-South Division of Bank of America.

“Everybody wants to joke and ask, ‘Have you got it all under control yet?’ I always tell them it’s going to take one more week. I’ll keep telling them that,” he says.

“I think the toughest part of my job has been to generate enough patience because clearly things don’t happen as rapidly in the public sector as they do in the private sector. A lot of times I’ve said, ‘Why don’t we just do this? It makes perfect sense to me.’ Then it’s been pointed out to me that there is a statute that requires it to be done the way we’re doing it. I’ve found that pretty frustrating, but I have to keep reminding myself there is plenty that we can make progress on.

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IT’S ABOUT CHANGE
Bill Todd helping governor achieve vision

Bill Todd is seated up front on the bandwagon driving toward a new Georgia. While Gov. Sonny Perdue holds the reins, Todd, IM ’71, is an integral member of the steering team. Handpicked by Perdue, Todd is executive director of the Commission for a New Georgia.

“The governor is a very good salesman and he laid out a vision for the state that was compelling and enticed me to leave Encina and come join his team back in March,” Todd says.

Before heading Encina Technology Ventures, Todd was at the helm of the Georgia Research Alliance, a coalition of state government, private business, Georgia Tech and five other research universities. Through the GRA, Todd became acquainted with Perdue.

“We met when he was a brand new state legislator in January of 1991 and I had just started the Georgia Research Alliance the summer before. I went to him early in his career because I had been told that he was one of the smartest people in the then-freshman class of the state Senate,” Todd says.

“He was always a great supporter of the GRA and intellectually understood it, understood the potential for university-based research to be a catalyst for economic growth in the state.”

Todd says he still was surprised when the newly seated governor offered him a job in early 2001.

“He said that he remembered when I first came to see him in 1991. He said, ‘You began to tell me your crazy ideas.’ Then he smiled and said, ‘Now the Georgia Research Alliance is one of the best things we’ve got going in the state. I need you to come join this team and help me do that over and over again.’”

Todd went home and talked the offer over with his family.

“We agreed that this would be an opportunity to serve and it seemed like the right thing to do to try to give a little back to a state that’s been very good to me,” he says.

He knew he would be battling the “forces against change.”

“I went in with my eyes wide open, knowing enough about how these things work, knowing that it was a good opportunity to make a contribution, but that it would be very challenging, very difficult work,” he says. “All the work that I’m involved in, this Commission for a New Georgia, is about change, is about change, is about change.”

Todd sees great potential in the state government specifically. He believes the governor’s office is a “great company in America, we have three in Georgia that are on the Fortune Top 50 as the best companies to work for — Synovus, AETNA and Alston & Bird.”

“We represent all those companies on our task force in leadership development to help us understand how they’ve created a model work force,” he says.

“In order to change the culture of state government, we have to dramatically improve the performance and quality of the team. Improving the management team leadership will produce more productive employees. The best-managed organizations have world-class leaders at every level,” Todd says.

The commission also is taking cues from business as it studies how the state allocates space for its 100,000 employees.

“BellSouth, for example, went through an exhaustive process to collapse their 20 locations around Atlanta into three major centers of employment by going through a systematic process of looking at where their employees live, looking at who needs to be near whom, looking at opportunites for public transportation,” he says. “They concluded about 100 of their people didn’t need to be in the metropolitan area at all. They could be out in the state in a lower-cost environment.

“The state has never gone through any kind of an exhaustive process like that,” Todd says. “A space management strategy could be a great contribution toward becoming a very well-managed state.”

He adds that the governor already has implemented Work Away to encourage state employees to do their jobs from their homes if it is feasible.

“Corporate America has gone through, some might say, a gut-wrenching effort in the last three years to really think about what are the core competencies, what is the central nature of the business, what are things that don’t really make

“The state has never had a robust program to cultivate middle managers and provide a system of career development in any kind of a strategic way that would, for example, have more train in other departments. There’s never been a program to identify the high flyers early on in there careers and nurture them through.”

“When you look at the great companies in America, we have three in Georgia that are on the Fortune Top 50 as the best companies to work for — Synovus, AETNA and Alston & Bird. We have representatives of all those companies on our task force in leadership development to help us understand how they’ve created a model work force,” he says.

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Todd only has two people on his staff at the Commission for a New Georgia office next to the Capitol.

“We depend on a whole legion of volunteers and pro bono consultants from the universities, from consulting firms, citizen volunteers, generous corporate citizens. It truly is a robust public-private partnership.”

Todd is used to small staffs and building movements from the ground up. He left an administrative post with Emory University’s health care system to launch the GRA in 1990. He told the ALUMNI MAGAZINE in 1993, “When my secretary and I came over from Emory, there was no desk, no telephone, no anything. That was an interesting opportunity because an organization did not exist. We literally charted it and incorporated it as a not-for-profit entity.”

Todd says his philosophy at the GRA was one of lean.

“We only had four people there and we were running a $50 million enterprise. Frequently people would come to see us and they’d say, ‘Where is everybody?’ And we’d say, ‘This is it.’ We made extensive use of loaned executives and volunteers and different groups.

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President Wayne Clough and his wife, Anne, joined a group of Georgia Tech alumni aboard the Sea Lion for a seven-day voyage through history in the wake of Lewis and Clark. The cruise, which explored the Columbia and Snake rivers, began in Portland, Ore., where the Willamette River flows into the Columbia River.
In 1803, President Thomas Jefferson chose Meriwether Lewis to lead an expedition to the Northwest “to explore the Missouri River and such principal streams of it as by its course and communication with the waters of the Pacific Ocean.”

Lewis chose his friend William Clark to share command of this fantastic expedition. The Lewis and Clark Corps of Discovery set off from a camp on the Mississippi upstream from St. Louis on May 14, 1804. It took 28 months for the explorers to navigate uncharted rivers and forge a wilderness journey to the Pacific Ocean.

Day 1

The Sea Lion casts off its lines and heads up the Willamette River. We pass beneath numerous bridges and cruise smoothly. Dinner is salmon no less.

Day 2

Day dawns bright and warm with cool breezes. We have already passed through the locks of two dams. At 7 a.m., we are in sight of John Day Dam and its remarkable lock — 113 feet, the highest in the world. By 7:30, we enter the lock and look up — quite a sight. The salmon running now are the chinook, also called king.

The weather is spectacular — warm, but with cool breezes off the river. On either side of the river are two highways. Highway 84 on the Oregon side tends to be very busy since it goes directly into Portland. Highway 14 is on the Washington side. Railroad tracks parallel the highways on both sides of the river. We often see trains with large numbers of grain cars carrying the plentiful crops. There is surprisingly little river traffic. The “river” at this point is actually Lake Umatilla, created by John Day Dam.

We cruise by a number of the camp sites for the Lewis and Clark expedition. They often chose places where creeks ran into the river. In some areas, they camped in the same spots going both ways.

The sun rises in the sky and warms the body and soul. At this time of the year, the salmon are running. Each type of salmon tends to have a run at a different time. The salmon running now are the chinook, also called king.

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We pass by mile 265 headed for the Blalock Islands, a traditional burial site of the American Indians. The land here is flat, particularly to the south. Horizons are distant and formed by small hillocks that rise gently from the flat land. When there are trees, they grow in clusters, perhaps nurtured by water or planted by farmers to create shade or windbreaks on the otherwise green space of eastern Oregon.

The Columbia is blue and wide in this area and bounded by brown hills shaped by basalt flows. The flows are sculpted with fluted columns formed by crashes created during cooling.

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There is steady activity along the lakeshores, but it is exclusively of the transitory variety. Cars, trucks and trains move in a steady procession, but no one seems to find these parts as a place to stop.

On the Washington side, vineyards spread across the crests of hills and in the low areas below the shoulders of the hills. Washington and Oregon wines are increasingly becoming competitive with California vintages. The vineyards follow in orderly patterns along the contours of the hills and valleys. Their green colors contrast sharply with the native brown grasses so abundant everywhere.

Now we are nearing McNary Dam, the last major dam on the Columbia. Power lines and their companions, transistor towers, march in single file out from the dam, over the land toward towns and cities. Our civilization depends on these 20th century creations, without which we could not cluster into our urban areas.

Spectacular scenery changes dramatically as the Snake and Columbia rivers flow from Idaho through Oregon and Washington.

Hat Rock on the Columbia was named by Lewis and Clark on their journey to the Pacific.

Wayne Clough writes in his journal.
persevering across the Rocky Mountains and the Great Divide, the Corps of Discovery reached the Clearwater River, where the explorers climbed aboard five canoes and, for the first time since beginning their journey up the Missouri, sailed with the current. After racing down the Clearwater and Snake rivers, Lewis and Clark reached the Columbia River teeming with salmon.

What would Lewis and Clark make of such things? Jefferson, who wanted to capitalize on this new land, would have been in wonder of it, I expect. There are downsides... reservoirs are slowly filling with silt, changing the ecology and eventually reducing the capacity to store water.

Our first stop following McNary is at Hat Rock, named by Lewis and Clark on their way to the Pacific. We take Zodiacs over to walk around the lake at the base of Hat Rock, which is now surrounded by weekend homes for lake lovers. The rock really does look like the top of a hat and the ground around it slopes gently to resemble the brim.

Hat Rock faces across a pond on its side of the river a more substantial rock ledge. It seems to look pensively since its true family lies there in more sensible harmony with the river bluff line. Across the river, the bluff line is more continuous, forming a long plateau with a shallow soil cover not substantial enough to support trees. This area is classified as a desert, getting 10 inches of rain or less annually. The contrast with the Columbia is dramatic.

Our naturalist provides us with insights into the nature of the vegetation along the pond below Hat Rock. Many of the species are immigrants, having come in as travelers courtesy of migrating birds or livestock herds. Pioneers in their covered wagons brought seeds and cuttings of some of their favorite plants and shrubs. A Russian olive tree, a rather scruffy trash tree, was planted in a misguided effort to grow something green, but took on a life of its own, today growing like some western kudzu variety.

Ducks, coots and grege noisily chatter among the waterfowl. These tend to stay the winter rather than migrate, taking on bad habits in the course of time. On the river, we see cormorants, herons and gulls. Beavers have been at work on the trees around the pond, taking even the large variety of native willows.

One of my favorite weeds is identified as the “tooth tightener.” During the long winters, the settlers’ diet was mainly meat, with little vegetables and no citrus fruits, leading to the onset of scurvy. Scurvy causes the gums to draw away from the teeth, but this green leaf, which is an early arrival in spring, is rich in minerals. Eating it restores the gums and fights scurvy, thus “tightening the teeth.”

As we approach the Washington border, the bluffs alongside the river rise higher, reaching several hundred feet.

Tuesday, Oct. 7 — Hells Canyon

The group is breaking into two parties, one to take a bus tour and one to board a “jet boat” to go up Hells Canyon. Anne chooses the bus and I go for the jet boat.

In the early portion we see spectacular columns of basalt, some close to vertical and others beautifully fluted, curving gracefully downslope. The difference in the shape of the columns is predicated by the shape of the surface where it cooled and whether it was able to squeeze along the surface. A mile or so up river we see six bighorn sheep, females and kids. The males tend to summer higher up and come down about this time of year.

Blue herons fish along the shore. The sun graces the tops of the basalt plateaus and caresses small valleys. Thirty miles up the river we come to where the Grande Ronde River joins the Snake. The rocks forming the hills and mountains now turn to limestone. From here in it is a national wilderness area — no plateau here, just steep slopes broken by tilted rock beds. A large bighorn ram grazes lazily on vegetation on the steep slope above the river.

The canyons become much more rugged and dramatic as we near the former Cache Creek Ranch, today the site of the beginning of the Hells Canyon National Recreation Area. We are visited by a red-tailed hawk that drops in nearby to check...
Near the end of their journey of more than 4,100 miles, the expedition approached Gray’s Bay and Clark mistakenly believed he saw the land’s end. He enthusiastically jotted down his most famous journal notation: “Ocian in view! Of the joy.” Although just 20 miles from the Pacific Ocean, the expedition encountered terrible storms. They were held back three weeks before making the final thrust to the Pacific Ocean. They built Fort Clapsop, named for a nearby Indian tribe, on the south side of the Columbia, to wait out the winter before beginning the journey home.

The waters of the Salmon are crystalline green and it pours over its rocky bottom between soaring hills and plateaus. It is little wonder that Indians who lived here could so strongly sense the presence of a great creator.

Our boat turns to follow the Snake farther upstream. Canyons narrow, river boulders pile higher and grow in substance and the canyon rims rise even higher, several thousand feet above the riverbed. Whitewater flashes at every river bend cause the boat to chatter and buck.

In a previous era, small steamboats attempted to ply these waters to reach mining sites with supplies. At the site of one narrow and fast-running rapid, a famous sinking occurred, leaving the boat in 80 feet of deep water below the rapids.

The water on the river this morning is a mirror, unbroken by fish or wind. Wide is the valley we are in, formed by the floods that came as the dams broke.

Looking back up the river, a scene crafted by the master creator emerges. Still water in the valley is bordered by graceful 40-degree slopes rising to the base of successive basalt precipices. It is a built environment created by a combination of slow, steady processes, interspersed with violent natural events. First came fiery basalt flows, next floods, in some cases beyond imagination, that raged even the hardest basalt, plucking massive pieces and using them to batter and break rock downstream.

Climbing out of the river valley as far as the eye can see, the land stretches out to reach a limitless 360-degree horizon. Basalt ridges and plateaus create the topographic relief, what there is of it. Color, or lack thereof, is the overwhelming sense one gets in looking at this landscape.

Day 4

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Multnomah Falls, drop 628 feet to the Columbia River

Gorge below. Ancient pictographs can be seen along the river.

38 GEORGIA TECH • Winter 2004
In the afternoon, we pass through the locks of Lower Monumental Dam. It feels good to pass quietly beneath this monster, which celebrates our exit by raining on us with water dripping down its huge sides.

We are told we will be treated to 16 total lockages, eight on the way up and eight on the way down. These massive structures change the rivers’ forces from their wild and unpredictable condition during the Lewis and Clark voyage. We can only imagine their struggles with furious rapids and narrow passages. Today the Snake and Columbia rivers are only ruffled by winds and loom wide from bank to bank, reaching up to one and a half miles in width.

Day 5

We begin today with a visit to the Columbia Gorge Discovery Center, a place our guide, Jerry, says has helped the region develop.

We depart on the Columbia River Highway. Looking downriver, we see dark clouds of a weather front that is stalled by the mountains of the Cascades. We are headed up the Moiser Tunnels.

Along the route we see ponderosa pine, white oak, big leaf maple and Douglas fir. Curves wind through the trees and over bridges spanning canyons and streams — spectacular views.

We arrive at Moiser, about 2,000 people and Jerry’s home. The general store is the biggest commercial establishment. Above town is a newly established hiking and walking trail complete with restored Moiser “twin” tunnels.

Day 6

We begin by visiting the Columbia River Maritime Museum, which has exhibits ranging from the times before Lewis and Clark to the present. Throughout the years, the dominant theme is the Columbia Bar or entrance to the Columbia River from the ocean. Known as the “Graveyard of the Pacific,” thousands of ships and boats have gone down here in this turbulent meeting of the great waters.

In the afternoon, our “expedition” leaves Astoria and sails out to see the Columbia River Bar. While not a particularly stormy day, the surf and waves at the bar are impressive. Any ship seeking passage would have been subjected to a pounding. Today, the Corps of Engineers dredges the channel to a depth of 46 feet, allowing deep-draft ships to pass.

Day 7

Our journey is over. Our voyage has been one leading to a deeper understanding and appreciation of Lewis and Clark’s Corps of Discovery and much more. Many gaps in my knowledge of the American Indians were filled and much was learned about the geography, geology, flora and fauna of the Pacific Northwest, especially the Columbia River basin.

Given the number of explorations by the English, French and Spanish, the Lewis and Clark expedition was a key to the U.S. claim to the land. Generations to follow owe a debt to them, particularly in view of their bravery and suffering.

Twenty-seven alumni and friends joined Wayne and Anne Clough on the October cruise “In the Wake of Lewis and Clark.”

Touring the Snake and Columbia rivers with the Cloughs were Viretta and Charlie (IM 57) Brady, Dodie and John (IM 50) Chapman, Jeane and Rem (ME 48) DuBose and Norma and Bill (ME 57) Collins and Wini and Dick (CE 55) Myrick, all of Alpharetta, Ga.; Geri and Joel (IM 58) Cowan, Peachtree City, Ga.; Martha and Bo (IM 68) Jett, Waynesboro, Tenn.; Joan and Jack (EE 47) Manning, Birmingham, Ala.; Joan and Tom (IM 62) Murphy, Lake City, Ga.; Dorothy and Chester (ChE 47) Roush, Carrollton, Ga.; Jean and Kelsey (ChE 56) Williams, Jackson, Miss.; Judy and Paul (ChE 60) Williams, Charlotte, N.C.; and Jack Wornell (CE 56), Danwood, Ga.

Georgia Tech Travel Adventures is featuring another “In the Wake of Lewis and Clark” cruise from Sept. 17 to 23.
Tech alumni run some of the best Billion Dollar Brands

Georga Tech has long been well represented among the ranks of America’s top business executives.

The following pages contain a sampling of Tech alumni who have risen to prominent positions in some of the best-known companies in the country — and in some cases, the world.

Each of the featured business leaders is associated with a corporation with more than $1 billion in annual sales. Most share credit for their business successes with the education they received at Tech, if sometimes only in hindsight.

Or as William “Bill” Sovey, IE 55, chairman and former CEO of Newell Rubbermaid, half-joked, “Running the company was a lot easier than getting through Georgia Tech. No question about that.”
David A. Perdue: Chairman and CEO

Dollar General Corp. is growing at a rate of about two stores per day because of a shift in American consumerism.

“Whole when you have a major force like a Wal-Mart dominating the landscape, it tends to affect all channels of distribution. We’re no exception,” says Perdue. The company is expanding to the Southwest and New England and the Cordellville, Tennessee-based company is preparing to add nearly 700 stores in 2004.

“A lot of people are segregating their commodity purchases from their aspirational purchases. People who shop at Rich’s, for example, for a sweater or suit may very well buy their dishwashing liquid, dog food and paper products from Dollar General because of price and convenience.”

Hired on the company’s leadership team in April, Perdue says there are challenges to running so many small-box retail stores.

“People don’t know us from our ‘average’ store, they know us from the individual stores they frequent. You’ve got to make sure your worst store is at least acceptable in representing the brand. Maintaining consistency across that broad landscape is something that McDonald’s was successful at doing years ago and we are modeling that right now.”

Perdue says he developed a large appetite for the global economy while working as a management consultant with Kurt Salmon Associates. He has served as chairman and CEO of Pillowtex Corp., executive vice president of Reebok International and president and CEO of Reebok Brand, vice president and managing director of Asian operations at Sara Lee Corp. in Hong Kong and as senior vice president of operations for Haggar Corp.

“President of Reebok, I traveled the world, had responsibilities all over the world and the same thing with Sara Lee. I learned early to deal with anybody from the junior to the chairman of the board among us alike,” Perdue says.

“Now that I am chairman of the board at Dollar General, I make it a point to deal with everyone in the organization on a first-name basis. You have to be approachable. That makes a big difference. When people feel they can bring ideas without threatening their position, you get a much more open environment.”

Perdue’s mother, Gervaise, also has an open line to the top.

“I tell the guys running the stores in my hometown in Warner Robins, ‘Please keep these stores clean, because if you don’t I will hear it from my mother the next day.’ She calls and says, ‘David, why don’t you carry this? Why don’t you carry that?’ I don’t have to send my area managers to those stores, because I know what’s going on from her.”

Perdue says the breakthrough on his path to leading a large company came in pioneering Sara Lee’s operations in Hong Kong.

“That gave me the global perspective to be qualified to deal into a turnaround situation like Reebok. The Reebok turnaround was profound. When I arrived, the stock was $7.50 and I think I sold it out at $35,” he says. “That four-year team effort was really meaningful in helping to mature the company.”

Coming out of Tech, I felt that business was one area where my analytical preparation along with my small-town principled background would allow me to be most successful and have the most impact.

Taking over the helm of Dollar General is a departure from the types of companies Perdue has led before, he says, but his background has prepared him for the experience.

“This is technically my first direct-retail job. My career was basically centered on consumer products companies on the branded side and I’ve spent too many important initiatives and not enough follow-up and focus on critical priorities.”

In his first month with Dollar General, Perdue visited all seven of the company’s distribution centers and since has visited more than 200 individual stores.

“I try to allocate time every week to go into stores and most weekends I’m out on my motorcycle visiting stores.”

Michael T. Duke: President and CEO, Wal-Mart USA

Everything about Wal-Mart is huge. The company consists of more than 3,200 facilities in the United States and another 100 in Mexico, Canada, Argentina, Puerto Rico, Brazil, China, South Korea, Germany and the United Kingdom. Upward of 100 million customers worldwide shop at a Wal-Mart store each week. For the fiscal year ending Jan. 31, 2003, Wal-Mart posted sales of $244.5 billion, ranking the Bentonville, Ark., chain as the largest retailer on the planet.

Worldwide, the company employs 1.3 million people. Mike Duke, a 1971 industrial engineering graduate of Georgia Tech, is president and CEO of Wal-Mart USA and executive vice president of Wal-Mart Stores.

Duke joined Wal-Mart Stores Inc. in 1969 after compiling seven years of retailing experience with Federated Department

per ihn at the time of Tech,” Perdue says. “He was actually at Georgia Tech when I started at Tech. I think in four years while I was at Tech, we might have beaten Georgia Tech one time in football, but Sonny certainly had the upper hand.”

“I now have at least two aliases though in that Sonny’s son Dan is a junior mechanical engineering student at Tech and my brother Denis got his masters in computer science from Tech.”
Michael A. Neal: President and CEO

The facilities are better, the kids are smarter and the amount of money that’s been spent on the programs is greater. I was at Tech for the dedication of Technology Square. They just didn’t have anything like that when I was there. I’m blown away by what’s happened at Tech.”

"Tech builds confidence in people," says Neal. "If you can get through there, you become fairly confident in your ability to do things."

Named to his present position with GE Commercial Finance, Six Sigma, popular at GE and other large corporations, is a disciplined, data-driven approach for eliminating defects from any kind of process, from manufacturing to transactional to service. The “six” part comes from six standard deviations between the mean and the nearest specification limit in a particular process. The statistical representation of Six Sigma describes quantitative confidence in a process is performing. GE adopted Six Sigma about 10 years ago.

"It’s an approach to breaking down processes to their elements, looking at them and analyzing them on a statistical basis, and then reconfiguring that process in a simpler way that can perform at a much higher level without much variation," according to Neal.

As a Tech student, Neal worked as an assistant in the statistics department, which he says imparted a useful background for working with GE’s Six Sigma process-improvement methodology.

GE Commercial Finance offers businesses of all sizes an array of financial services and products worldwide. With a particular expertise in the midmarket segment, GE Commercial Finance provides leasing, operating leases, financing programs and other services. It also offers loans and financing leases for major capital assets, including a full business ethics seems to have become a contradiction in terms in recent years, according to one top corporate executive. "It seems you can’t open the newspaper today without seeing some more business- men being led away in handcuffs," laments William P. “Bill” Sovey, chairman of Newell Rubbermaid and a 1955 industrial engineering graduate of Georgia Tech. "I think that standards have slipped in what they used to be. It’s very disappointing to see that.

Based in Atlanta, Newell Rubbermaid produces a stagger- ing range of household products familiar to consumers all over the world. In addition to Rubbermaid plastic products, company subsidiaries and brand names include Calphalon and Mimo cookware, Amerock cabinet hardware, Levolor blinds, Goody hair care products, Rolodex files, Sanford writing instruments and a variety of juvenile products under the Little Tikes, Graco and Century brands.

During Sovey’s 12 years at the helm, the company solidified its reputation as a “leader in our field in terms of profitability, customer service, on-time deliveries and quality products,” he says, “and we did it in a very ethical but profitable way for our stockholders.”

The company sells primarily to mass retailers such as the Home Depot, Lowe’s, Target and Office Depot.

"When I got out of school, jobs were not easy to get," Neal remembers. "I was just trying to get a good one. I wanted to work with a large, established company that I thought would have a lot of opportunities for a guy like me and GE, being one of the world’s biggest companies, certainly provided that.”

Neal decided to invest his future with General Electric and see how far he could go with a professional ambition abetted by his Tech experience.

A Navy scholarship provided the answer, and after graduating from Georgia Tech in 1971 as president of the Ben Hogan Co. He was named group executive of the industrial products group and elected a corporate vice president of operations at AMF in 1977. He was elected executive vice president of leisure products two years later and elected president and chief operating officer, a director and member of the executive committee at AMF in 1982.

He joined Newell Co. in 1986 as president and chief operating officer, becoming vice chairman and CEO in 1992. Sovey was named to his present position in the company, Newell Rubbermaid, in 1998.

Sovey’s long and successful business career was greatly facilitated by his student career at Georgia Tech, he says. "We learned a lot at Georgia Tech, especially how to think through problems and come up to solutions to problems. I couldn’t have gone to a better place to prepare me for my career in business.”

— Gary Gottleib

William P. Sovey: Chairman

"We split the stock three times and got it back up to where it had been during pre-split days, so I think we did a good job for our stockholders and a good job for our cus- tomers too.”

A native of Hartwell, Ga., Sovey says there was never any doubt about where he wanted to go to college — the question was where he’d find the money to do it.

A Navy scholarship provided the answer, and after gradu- ating from Tech, Sovey served in the Navy for three years.

Sovey joined Owen-Corning Fiberglass as a design engineer and later became a plant superintendent. In 1963, he was hired by Atwood Vacuum Machine Corp. as general manager of its automotive division. Five years later his career path took him to A.G. Spalding & Brothers as vice president of manufacturing and, later, vice president of international operations.

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"Rubbermaid was one of the bigger ones. Sanford, the writing instrument company, was another big one."
The same year Queen Carpet was established, 1946, and in another part of Dalton, Clarence Shaw organized Star Dye Co. Shaw’s family-owned enterprise went public in 1971 as Shaw Industries and began an expansion effort that included its own yarn-production facilities, trucking line and regional distribution centers.

The company also began acquiring competitors in the ‘80s, purchasing West Point Pepperell’s Carpet and Rug division, Salem Carpet Mills and the Evans & Black brand of Armstrong World Industries. Shaw’s aggressive growth strategy placed the company among the Fortune 500 for the first time in 1985, with $500 million in sales and a workforce of nearly 5,000.

In 1986, Queen Carpet and Shaw Industries merged under the latter’s name, with Bob Shaw as chairman and Saul serving as president.

A new chapter in the company’s history opened in January 2001 when Shaw Industries was purchased by Berkshire Hathaway Inc., the holding company of renown investor Warren Buffett.

In the mid-1990s Shaw took the first step in becoming a hardwood and ceramic specialist. In 2002 the company built the latest state-of-the-art laminate manufacturing plant. “We used to be strictly a carpet company,” he says. “Today we’re a flooring company, and we offer ceramic, wood and laminates.”

Carpet remains the company’s mainstay, contributing the bulk of Shaw’s $4.5 billion plus in annual sales. Shaw’s 30,000 employees handle every aspect of production, from fiber extraction to the art of tufting, from research and development to final delivery. The 600 million square yards Shaw manufactures each year is enough to wrap a 6-foot-wide carpet around the equator seven times.

“Carpet is a great product — it’s an insulator, it dampens noise, you can drop things on it and they won’t break, and its softer feel is easy on your feet,” Saul notes.

With about $38 billion in revenues, AT&T serves about 100 million customers. AT&T’s large wireless business includes its own tower and network. In 2000, he was named president of AT&T, the largest telecommunications network in the United States. He was appointed to the board of directors in 2002.

Dorman says his career in the telecommunications business has consolidated, it’s still a very tough, driven business,” Saul notes. He says his ability to manage a full plate of environmental and competitiveness issues is due in large part to his Georgia Tech experience.

“The education gets you prepared to the point where virtually nothing is too big for you,” he says. “It helps you learn to handle more than one problem at a time and also gives you a reasoning and problem-solving ability.

“Ill tell you,” he adds, “I don’t think I’ve ever had anything in business as hard as final exams at Georgia Tech.”

In the closely knit world of the carpet and floor covering industry, where everybody in the business seems to know everyone else in the business, his interaction with customers, employees and vendors is the best part of the job, Saul says.

— Gary Gottling

Dorman says he seeks employees who are motivated and drive themselves.

“We use the psychological evaluation process for selecting people,” he says. “We look for bright people, we look for cognitive skills, but we’re really interested in having people who can think, and think critically. We’re also interested in people who are really motivated. If people want to fire burning inside of them and have something to prove.”

— John Dunn

David W. Dorman: Chairman and CEO

Avoid Dorman whizzed through Georgia Tech’s four-year industrial management program in three years with high honors, graduating in 1975. It was just a hint of his whiz-kid rise in the telecommunications industry to become chairman and CEO of AT&T.

In 1981, Dorman became the 55th employee of Sprint, then an emerging long-distance carrier, and in 1986, he was named president of Sprint Business. In that role, he managed a business that grew from $4 million to $4.5 billion in revenue and had 10,000 employees.

In 1994, at age 39, Dorman became CEO of Pacific Bell and the youngest chief executive of a Bell company. He soon added chairman to his title, leading an $11 billion business with 50,000 employees.

When SRC Communications acquired Pacific Bell, Dorman was named executive vice president. His next move was chairman, president and CEO of PacificTel, an Internet news and information service, and then CEO of Concert, a global venture owned by AT&T and Britain’s British Telecommunications. In 2000, he was appointed president of AT&T, the largest telecommunications network in the United States. He was appointed to the board of directors in 2002.

With about $38 billion in revenues, AT&T serves about 50 million consumers and 4 million business customers.

“Vision is important,” says Dorman, who was one of the T. Brooks Pearson Distinguished Lecture at Tech’s College of Management last March. “Whether you are leading a small organization or a large one, like AT&T, people have to feel like they know where you’re going.”

The vision can be aspirational, but it must be understood, he says. “The goal has to be elevating. It’s got to have some measurement that people can sink their teeth into. So one of my biggest jobs is talking to everybody across the company and consistently conveying where we’re going.”

Dorman has a reputation for saying what he means and expecting others to do likewise. He follows a set of management principles that emphasize a strong work ethic, teamwork, focus on the customer and character and integrity.

“Character and integrity are binary things,” Dorman says. “They’re either there or they’re not. It’s not like we, well, we have 92 percent character and integrity, and on Thursdays we take a day off. It doesn’t work that way.

“I transmit volumes to people if they know that you’ll cut corners or, on the other hand, if they know you will always tell them the truth, even when it hurts. Integrity is the bedrock. Without it, you can’t have trust, and without trust you never develop the teamwork that’s necessary to be successful in business.”

Dorman recalls that during the 1990s, many CEOs were treated like rock stars.

“It was a time when leading was all about stock price. But the tough issues — dealing with businesses that were turning down rather than moving at all — were yet to come. The change from the rock star CEO to the criminal CEO happened with breathtaking speed.”

Effective leadership is built on trust, he says.

“When I was a student at Tech, Dorman says he had no idea that he would go into the telecom industry. “That wasn’t part of my game plan. I didn’t really have a game plan. What I had was a desire to try to be successful.”

After graduation, Dorman went to work for Burroughs Corp. in sales and doing some work with software. He moved on to a company creating software for financial institutions and then joined a start-up company that was developing communication services for the insurance industry. That business was sold to the telephone company that became Sprint.

“A combination of timing and opportunity came my way,” Dorman says. “The telecom industry was changed forever in 1984 when AT&T negotiated a settlement for an anti-trust suit and sold the regional Bell operating companies, the “baby Bells” as they were called.

“The Sprint situation was critical for me because I was able to grow in business — from $4 million to $4.5 billion — that was really my MBA,” Dorman says.

“We had to put an organization together in scale. That’s probably the most important part — getting the people dimension right, so people can scale their jobs. If you’re going to grow to 10 or 15 percent a year, once you get to a certain size that puts a whole new dynamic on how management has to plan.”

Dorman says his career in the telecommunications industry has enabled him to work with both entrepreneurial companies and large, established companies.

“I have benefited from both experiences — working with a small company where you knew everybody’s name and
“We had to embark on a very ambitious change management agenda and restructure our core business.”

Lacy says, “You have to accept the fact that your career is likely to get disrupted. You are just going to do it.”

Lacy says, “Every time it has happened with me, it has been a fabulous opportunity. If you look at it as an opportunity rather than a risk or a disruption, you come out much better.”

Lacy says, “We had to embark on a very ambitious change management agenda and restructure our core business.”

Lacy went on to become the senior vice president of finance and strategy for Kraft General Foods. After Philip Morris bought Kraft, Lacy became vice president of financial services and systems for Philip Morris Capital Companies Inc.

Mergers, sell-offs and spin-offs are common in today’s business world and workers have to learn to roll with them, Lacy says. “It is a fact of corporate life these days. I’ve gone through several mergers. I have bought, I have sold a lot of businesses, I have spun off a business and I’ve been spun off. That’s just life these days.”

Malone earned undergraduate and doctoral degrees in chemical engineering at Georgia Tech in 1963 and 1966, respectively. He says his student experience provided more than a basic science education.

“It certainly provided me the basic tools to deal with the tremendous variety of challenges throughout my life,” Malone explains. “Most importantly, it was an environment that challenged me to the ultimate of my ability. Having survived that culture and environment has had a very positive impact on me — of believing that I could effectively tackle any challenge.”

Shortly after leaving Tech, Malone was hired by Deering Milliken Inc. to organize its “fundamental engineering department.” Seventeen years later, in 1983, he was named president and chief operating officer of the company, which by then had changed its name to Milliken & Co. He was promoted to his present post in 2002.

One of the largest privately owned textile manufacturers in the United States, Milliken employs about 14,000 people in 65 manufacturing operations worldwide. Milliken is a private company and does not report sales, but total sales for 2002 are reputed to be about $3.6 billion.

Milliken produces textiles and chemicals used in products ranging from art supplies to space suits. Milliken produces woven, knitted and tufted fabrics in carpets as well as synthetic fabrics used in such goods as apparel, automobiles, tennis balls and specialty textiles.

During his long career at Milliken, Malone has never lacked for challenges. “Reading the newspapers and listening to the news, we all have to be extraordinarily concerned about the future of manufacturing in America,” he says. “Our trade policies are having a tremendously negative impact on virtually all manufacturing in this country. Milliken is no exception. We are having to strive mightily to address the chaos resulting from these policies that have resulted in the loss of more than 2.5 million manufacturing jobs in the last four years.” Malone is perhaps best known for his relentless advocacy of Total Quality Management. His personal leadership and hands-on commitment to quality improvement and innovation began even more than a decade ago with his introduction to Philip B. Crosby, author of “Quality Is Free.”

“Milliken & Co.’s restless president,” as he was described by Tom Peters, author of “In Search of Excellence,” has been the driving force behind the company’s Pursuit of Excellence Program and its “customer-driven, quality-focused” leadership in the textile and chemical industries.

“I would hope that I am perceived as a person who has enormous belief in the great talent of all of our people and that I have a passion for creating an environment that unleashes our ‘total people power,’” Malone says. “I strive to give all of our associates the opportunity to be heroes, then recognize and reward them for their outstanding contributions to our continuous and passionate pursuit of excellence.”

One of the rewards of his successful business career is the enjoyment and personal satisfaction that comes from Milliken’s recognition as a “world-class company,” according to Malone.

“Our company has won virtually every quality award given around the world,” he continues. “I believe I have been enormously blessed to be a member of the team that has won these awards of excellence and that has made our continuing business success around the world a reality.”

Under Malone’s leadership and guidance, Milliken was selected in 1989 by Malcolm Baldrige National Quality Award by President George Bush. A member of the Chief Executives’ Organization and The Presidents’ Circle, he also serves on the National Science Foundation directorate of the advisory committee and the Council on Competitiveness. He is a member of the National Academy of Engineering and was selected 1991 Honorary Textile Leader of the Year with the Kappa Tau Beta leadership fraternity and Phi Psi professional textile fraternity at North Carolina State University. He was named 1994 Leader of the Year by Textile World and was recently selected by the magazine as one of the top 50 “Textile Leaders of the Century.”

Malone serves on the board of the Alexander-Tharpe Fund and is a former member of the board of trustees of the Georgia Tech Research Corp. He assisted in the formation of the industrial advisory board of the Chemical Engineering Department at Georgia Tech and initiated the co-op program between Georgia Tech and Milliken. He also started the Georgia Tech-Milliken Industry Challenge Quality Improvement Program and the Milliken-Georgia Tech summer intern program that involves participants from 17 universities.

In 2000, South Carolina Gov. Jim Hodges presented funny thing happened to Bryan T. Moss on his way to retirement — he wound up as company president instead. A 1962 graduate of Georgia Tech with a degree in industrial management, Moss had been vice chairman of Gulfstream Aerospace since 1995. He contemplated, in the United States, Milliken employs about 14,000 people in 65 manufacturing operations worldwide. Milliken is a private company and does not report sales, but total sales for 2002 are reputed to be about $3.6 billion.

Milliken produces textiles and chemicals used in products ranging from art supplies to space suits. Milliken produces woven, knitted and tufted fabrics in carpets as well as synthetic fabrics used in such goods as apparel, automobiles, tennis balls and specialty textiles.

During his long career at Milliken, Malone has never lacked for challenges. “Reading the newspapers and listening to the news, we all have to be extraordinarily concerned about the future of manufacturing in America,” he says. “Our trade policies are having a tremendously negative impact on virtually all manufacturing in this country. Milliken is no exception. We are having to strive mightily to address the chaos resulting from these policies that have resulted in the loss of more than 2.5 million manufacturing jobs in the last four years.” Malone is perhaps best known for his relentless advocacy of Total Quality Management. His personal leadership and hands-on commitment to quality improvement and innovation began even more than a decade ago with his introduction to Philip B. Crosby, author of “Quality Is Free.”

“Milliken & Co.’s restless president,” as he was described by Tom Peters, author of “In Search of Excellence,” has been the driving force behind the company’s Pursuit of Excellence Program and its “customer-driven, quality-focused” leadership in the textile and chemical industries.

“I would hope that I am perceived as a person who has enormous belief in the great talent of all of our people and that I have a passion for creating an environment that unleashes our ‘total people power,’” Malone says. “I strive to give all of our associates the opportunity to be heroes, then recognize and reward them for their outstanding contributions to our continuous and passionate pursuit of excellence.”

One of the rewards of his successful business career is the enjoyment and personal satisfaction that comes from Milliken’s recognition as a “world-class company,” according to Malone.

“Our company has won virtually every quality award given around the world,” he continues. “I believe I have been enormously blessed to be a member of the team that has won these awards of excellence and that has made our continuing business success around the world a reality.”

Under Malone’s leadership and guidance, Milliken was selected in 1989 by Malcolm Baldrige National Quality Award by President George Bush. A member of the Chief Executives’ Organization and The Presidents’ Circle, he also serves on the National Science Foundation directorate of the advisory committee and the Council on Competitiveness. He is a member of the National Academy of Engineering and was selected 1991 Honorary Textile Leader of the Year with the Kappa Tau Beta leadership fraternity and Phi Psi professional textile fraternity at North Carolina State University. He was named 1994 Leader of the Year by Textile World and was recently selected by the magazine as one of the top 50 “Textile Leaders of the Century.”

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In 2000, South Carolina Gov. Jim Hodges presented
EarthLink’s primary competitor, America Online, is a significant source of new customers for the Atlanta-based Internet service provider, according to EarthLink CEO Charles G. “Garry” Betty. “We have predominately been a haven for people who have had previous experience on the Internet — we call them switchers,” explains Betty, who graduated from Georgia Tech in 1979 with a degree in chemical engineering. “They’re dissatisfied with getting busy signals during peak hours, getting spammed, getting pop-up ads and not being able to directly access different things on the Internet. They want to try something better, and because our company has focused on providing superior service and support to members once they get here, we’ve done a better job keeping them.”

Betty must be doing something right. When he took over the company in 1996, EarthLink was a regional ISP based in Pasadena, Calif., with 100,000 subscribers. That number has passed the 5 million mark, thanks in part to a merger with ISP Mindspring in 2000. Sales in 2002 passed $1.4 billion.

While recruiting new subscribers remains a priority, one of EarthLink’s biggest challenges is “gaining access to ‘last-mile connectivity’ to provision broadband cost-effectively for our customers,” Betty says.

The company took a significant step in that direction early in 2003 by negotiating an extended agreement with BellSouth to provide digital subscriber line service throughout its territory. The move allows EarthLink to utilize BellSouth’s broadband infrastructure to serve an additional 4.5 million households by expanding its market presence to 79 cities.

The BellSouth arrangement mirrors a similar deal reached in 2002 with SBC Communications that allows EarthLink to offer DSL service to 12 million households in its territory.

To expand its narrowband subscriber base, EarthLink developed an acceleration tool that enables users to experience web-surfing speeds up to five times faster than those of a standard dial-up connection.

EarthLink is also pushing its high-speed wireless service and software that effectively blocks spam and pop-up ads.

Such value-added innovations and improvements are driven by Betty’s business philosophy: “Create great products or services that people want to buy, and create internal accountability for achieving expected results.

“Customer service is fundamental to our strategy,” he adds. “We want to make sure that when individuals dial into the Internet, they are successful in what they set out to do. That’s why we’re successful. And the more we can make our services transparent to our customers, the more likely they are going to stay with our service.”

Betty’s career began at IBM, where he gained experience in purchasing, materials management, corporate contracts, product management and management of subcontracted manufacturing operations. He received IBM’s prestigious President’s Excellence Award in 1982 for his work associated with the IBM personal computer.

Following a stint as senior vice president of sales, marketing and international operations at Hayes Microcomputer Products, Betty joined Digital Communications Associates as president and CEO. Betty led the company out of a two-year slump, reporting fiscal year 1993 revenues of $242 million. He also successfully reorganized Digital Communications, including three divestitures and three acquisitions.

Betty says the most valuable business lesson he has learned is “the vital importance of cash in the growth and development of any high-growth business. I learned this firsthand at EarthLink as we have raised over $1.5 billion over the past eight years.”

According to Betty, his business success has also been aided by his Georgia Tech education. “The biggest benefit I received from my Georgia Tech education has been a disciplined approach to problem solving,” Betty says. “These skills are applicable no matter what the business is.”

In 1993, Betty was named Georgia Tech’s Young Alumnus of the Year and was elected to a three-year term on the Alumni Association Board of Trustees. In 1994, he received Tech’s College of Engineering Award from the Council of Outstanding Young Engineering Alumni. Betty added another College of Engineering Award in 2000 presented by the Academy of Distinguished Engineering Alumni.

— Gary Goettling
By Maria M. Lameiras

Karen Dixon, who has designed highway interchanges in Texas, Arizona, North Carolina and Florida, finds teaching the job every bit as rewarding as doing the job.

Dixon, an associate professor in the School of Civil and Environmental Engineering, received the 2003 Class of 1940 W. Roane Beard Outstanding Teacher Award.

An expert in highway interchange design, Dixon was not immediately drawn to teaching or engineering. In high school, she was an excellent student both in math and science, a juxtaposition that led the two department heads to arrange for Dixon to attend an engineering workshop at Texas Tech.

"I had no idea what an engineer was before that," Dixon says. "I looked at all of the disciplines and I decided that if I were to design something, I wanted to be able to see it. If you are in industry and you design a cog for an engine, that may be very efficient, but you are not really responsible for the whole. I wanted to be able to drive on the road I had designed." After earning her bachelor’s degree in civil engineering from Texas A&M University in 1983, Dixon went to work for a small engineering firm in Texas doing residential neighborhood and commercial development design, including the planning of the roadways, drainage and utilities.

Wanting to break into highway design, she took a job with a large firm that specialized in interchange projects. "One of the reasons I like interchange design is that you kind of have to see in 3-D and how the bridges go over the highway. There are so many components you have to consider and I like that challenge," Dixon says.

Dixon worked on a major interchange in Fort Worth and the Broadway Curve on Interstate 10 in Arizona, where the traffic from Phoenix and Tempe converge. After finishing the Arizona project, the company wanted Dixon to transfer to its headquarters in Los Angeles. But she and her husband Ron decided they would move to an area where both could pursue master’s degrees — his in public health and hers in civil engineering. Dixon got a consulting job in North Carolina so the couple moved to Raleigh. Dixon earned her master’s at N.C. State University while working full time.

"By the time I finished my master’s degree I’d gotten into a position with my firm where I was doing very little engineering and was more into the management," Dixon says. "One day I realized all I had done was process paperwork. I hadn’t done one engineering thing that whole day. That wasn’t what I wanted. I decided to get my PhD with the idea that I could consult or teach, but that I could remain technical."

While pursuing her PhD in civil engineering, Dixon spoke with her adviser about teaching and her concerns whether she would be good at it. "N.C. State had a program called ‘Preparing the Professoriate’ in which the teacher and the student applied together. The first semester the student observed and assisted with a class, then the next semester could teach some or all of the class," Dixon says. "My professor was very progressive and he told me, ‘Here’s what we’re going to do. You can help me teach the first semester and then the second semester, I’ll disappear.’"

During that second semester, Dixon began to think she really didn’t want to teach. "It was tough preparing to teach a class for the first time. You have to prepare notes with enough detail where someone who hasn’t heard the material before can understand it, but not overwhelm them. And writing a test is a lot harder than you would think," she says.

"It was tough preparing to teach a class for the first time. You have to prepare notes with enough detail where someone who hasn’t heard the material before can understand it, but not overwhelm them. And writing a test is a lot harder than you would think," she says.

By the end of the semester, she’d decided she enjoyed teaching. "The thing that turned me around was the interaction with the students," Dixon says. "I liked that there are students who are struggling and who won’t give up until they get it. I loved it when they went on and the student figured out what I was trying to explain. I especially love hearing from students after they’ve graduated about how a course taught really helped them in their career. I feel I’m making more of a contribution now than I ever did as an engineer."

Recently Dixon finished co-authoring a textbook, “Highway Engineering, Seventh Edition” with Tech professor emeritus Paul H. Wright.

Through her research, Dixon is also having an impact on transportation issues at the regional, state and national levels.

Through Georgia Department of Transportation support, Dixon is conducting research at “smart work zones” on interstates using sensors to measure traffic density and speed and calculate how they could affect traffic flow. The information is then transmitted via computer to traffic advisory signs located over interstates in metro Atlanta.

"Through that data and driver surveys, we can determine whether that information broadcast on the advisory signs makes a difference in traffic flow," she says.

On the national level, Dixon is working with the Federal Highway Administration on a program to develop speed models of low-speed urban streets in order to design safer roadways.

"Before we would come up with a reasonably safe minimum speed, then design around that, but if a 200-foot curve was good for that speed, the thinking was that it would be safer to make a 250- or 300-foot curve. What we have done is made roads where people can drive much faster than they should," Dixon says.

"We can develop speed models that include the roadway conditions that affect speed on low-speed urban streets, it may change the way we design roads."

Rather than design roads and have the surrounding businesses and residents adapt to them, design should adapt to the environment, Dixon explains.

"It is the push in many commu-nities to design the road to fit into the context of what is around it, called contact sensitive design," she says.

"Let’s say you have a road next to a historic area where there is a lot of brickwork used. You don’t want to use big, ugly concrete jersey bunks on that road. You want to design some sort of road design that is compatible with the adjacent architecture."

"The people who are affected by a roadway are not just the people on the road, but also the people next to them."

The Dixon File

- Born: June 15, 1961, Grand Junction, Colo.
- Education: Bachelor’s degree in civil engineering, Texas A&M University, 1983; master’s degree in civil engineering, North Carolina State University, 1993; PhD in civil engineering, North Carolina State University, 1995.
- Personal: Husband, Ron, a cat and a dog.
- Awards and Honors: Class of 1940 W. Roane Beard Outstanding Teacher Award, 2003; CETL/AMOCO Junior Faculty Teaching Excellence Award, 1998; Georgia Tech School of Civil and Environmental Engineering Faculty Award, 2003; Phi Kappa Phi Honor Fraternity, North Carolina State University, 1993; Chi Epsilon Honor Fraternity, Texas A&M University, 1982.
- Leisure Interests: Reading, home improvements, building miniature robots, “ tinkering."

Faculty Profile

Highway to Higher Ed

Civil engineer passes romance of the road to new generations
Championship Blowout

Texas Tech's Andre Emmett has nowhere to go as he tries to pass the ball around Georgia Tech's Luke Schenscher in the championship game of the Preseason National Invitation Tournament. Tech played passionate defense to dominate the game and the tournament at Madison Square Garden in New York City. After trouncing Hofstra 75-56 and Cornell 90-69, the Yellow Jackets knocked off No. 1-ranked Connecticut, 77-61, in the semifinals and No. 25 ranked-Texas Tech, 85-65, in the championship game. Tech's 6-6 junior forward Isma'il Muhammad was named the most valuable player in the tournament.