Researchers assess foreign water and sanitation needs

Working to meet international goal
Abby Vogel
Research News

Worldwide, more than one billion people lack access to an improved water source, such as a rainwater collection or dug well, and two billion still need access to basic sanitation facilities. By 2015, the international community hopes to reduce by half the number of people without sustainable access to safe drinking water and basic sanitation.

This target for sustainable water and sanitation is just one of the United Nations Millennium Development Goals adopted in September 2000 at the Millennium Summit. These goals serve as the world’s time-bound and quantified targets for addressing extreme poverty. Local communities in the developing world and professional researchers are working to meet this goal. Researchers recently presented their work toward this end at the annual meeting of the American Association for the Advancement of Science (AAAS).

In the developed world, the moment a drop of water hits the ground, it goes into the water system until it becomes wastewater. Then it’s treated and put it back into the system. “We have a large-scale infrastructure in the United States to provide clean water,” said Joseph Hughes, chair of the School of Civil and Environmental Engineering. “Using our current approach will not provide a sustainable path for the future. We need to change.”

Galloway focused his efforts to redefine the mission of the College, strengthen its academic programs, integrate research programs with academic instruction and fully engage the College with expanded academic, research and service missions.

Dupuis to receive IEEE Edison Medal
Jennifer Greene
Electrical and Computer Engineering

The Institute of Electrical and Electronics Engineers has selected School of Electrical and Computer Engineering Professor Russell Dupuis to receive its prestigious 2007 IEEE Edison Medal.

One of the oldest medals for meritorious achievement in engineering, the Edison Medal is bestowed for a career of meritorious achievement in electrical science, electrical engineering or the electrical arts. Dupuis’s award commemorates his innovative contributions to metalorganic chemical vapor deposition (MOCVD) and continuous-wave room-temperature quantum-well lasers. MOCVD is a method for depositing high-quality complex semiconductor structures that contain many layers, some only 0.1 millimeters of an inch thick.

Today, we are using the same basic MOCVD approach that I developed in 1977 for the growth of III-V compound semiconductors to produce much more advanced structures and more challenging materials,” Dupuis explained. “This technology is used worldwide for many important device applications in both research and production areas.”

The complex semiconductor “sandwiches” produced with MOCVD are designed for device applications that require alternating layers of different materials with different properties.

College of Architecture Dean Tom Galloway dies
Matt Nagel
Institute Communications and Public Affairs

Thomas D. Galloway, an academic leader and dean of Georgia Tech’s College of Architecture since 1992, died of a heart attack the afternoon of March 11. He was 67.

In remarks delivered during a memorial service in the Ferst Center for the Arts, President Wayne Clough said, “When I came to Georgia Tech in 1994, I was fortunate to find a number of individuals on whom I could rely who were outstanding professionals and who understood the need to change. Tom Galloway was one of these people. He was highly respected in his profession and on campus and he became an ally and dear friend. On behalf of Georgia Tech, I thank Tom for all he did for us and the vision he left with us.”

Galloway’s leadership and vision are evident throughout the College of Architecture, across campus and in the city of Atlanta. He was a tireless advocate for the College of Architecture and for Georgia Tech in a period of growth and expansion both nationally and internationally. His wide-ranging academic and professional interests combined with a profound sense of community service inspired his friends, his faculty, and his students. In his most recent role as co-chair of the Peachtree Corridor Task Force Technical Committee on Planning and Design, Galloway combined his professional knowledge in city planning, his belief in community service and his commitment to urban issues.

Under Galloway’s leadership, the College realized many changes and milestones. In 1993, the College established a new partnership for its Paris Study Abroad Program with the Ecole Nationale Superieure d’Architecture de Paris LaVillette and established the Shenyang Program at Shenyang Technological University in China. In recent years, he extended Georgia Tech’s relationship with the United Arab Emirates, chairing a team that reviewed a new College of Engineering and Design at the University of Abu Dhabi and served as an urban planning consultant to the Sheik.

He also spearheaded key research initiatives, including the establishment of the Center for Geographic Information Systems (1995), the Advanced Wood Products Laboratory (2000) and the Center for Quality Growth and Regional Development (2001). That same year, he reorganized the Center for Rehabilitation Technology into the Center for Assistive Technology and Environmental Access (CATEA). Under his direction, the College received approval for new academic initiatives, such as a Master of Science in Building Construction and

Dupuis continued, page 3
College of Architecture
Dean Tom Galloway dies

Galloway continued, page 3
Gift ensures future for Tech’s Living History Program

Dan Treadaway
Institute Communications and Public Affairs

There’s something about the words “I remember when” that makes any story more compelling and meaningful. Throughout its Living History Program, the Georgia Tech Alumni Association has interviewed and videotaped more than 600 “I remember when” stories of alumni, faculty, staff and other Tech friends. Living History staff members conduct interviews and archive them in digital format for future reference. Many of these stories are available through the Program’s Web site.

Stories shared by alumni via the Living History Program include the late Edward C. Hammond recalling the installation of Atlanta’s first traffic light in the 1920s; John H. O’Neill Jr. relating his adventures with a fellow student in Sun Valley, Idaho, during spring break in 1948; and Morris Russo reminiscing about rat cats and shittail parades in the 1940s.

The Living History Program began as The Oral History Project in 1994 as a response to an inquiry regarding a 100-year-old alumnus. “I thought it would be interesting to talk to people about Tech back in his day,” said Marilyn Somers, director of the Living History Program. “That particular interview never actually happened, but when I brought the idea for the project to John Carter, then executive director of the Alumni Association, he felt that it had some potential value.”

Carter, now president and chief operating officer of the Georgia Tech Foundation, subsequently asked F. B. “Duke” Newborn II, an alumnus and a trustee of the Alumni Association at the time, to serve as a mentor to the project. Newborn not only agreed, but also donated recording equipment to the new initiative and provided narration services for many of the program’s short documentaries. A strong upper-class mentor for the program since its inception, Newborn recently renewed his commitment through a significant gift that will help endow the Living History Program.

“The Tech alumni family owes a tremendous debt of gratitude to Duke Newborn,” said Joseph Irwin, current president of the Alumni Association. “Our younger alumni and current students can learn so much from the fascinating stories we’ve chronicled for the Living History Program. I see this as a great tool for both education and historic preservation.”

Over the past 12 years, the Living History Program has grown from a part-time effort operated mostly with students to a full-fledged, profession-ally run initiative with a clearly defined mission: to collect, preserve and present the history of the Institute through the stories of its people.

“The greatest value of the Living History Program,” said Somers, “is in its long-term role, because the collection provides first-person accounts of not only the Institute’s history, but also the history of the city, the region, the state and the vast array of careers experienced by Tech alumni. Our alumni, faculty and staff are very interesting people and they have amazing stories to tell.”

“I am pleased to be able to support the Living History Program at Tech,” said Newborn. “Most of us have had the experience of hearing wonderful stories from older relatives, and then wondering after those loved ones were gone why we never wrote down those stories. I wanted to make sure that didn’t happen with my Georgia Tech family. The Living History Program is a gift to all alumni that keeps getting more and more valuable with each passing year.”

For more information...

The front page of the Living History Web site, where visitors can watch alumni share their memories of Georgia Tech and the city of Atlanta down through the generations.

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Mag ranks College of Management high for return on investment

The College of Management offers great return on investments for undergraduate management majors, according to the latest BusinessWeek rankings.

Ranked 44th in the magazine’s Top 50 list of best undergraduate business programs, Georgia Tech placed second in the nation for return on investment among public colleges. The school also ranked 44th in student engagement (the number of hours spent on class work each week) and 49th for internship opportunities. Among corporate recruiters, Georgia Tech is number 12.

“I am extremely proud of the excellent quality of the business school’s undergraduate program,” said College of Management Dean Steve Satu. “We’re gratified that the rankings are increasingly reflecting all we have to offer students.”

To identify the best undergraduate programs, BusinessWeek surveyed nearly 80,000 business majors at top schools as well as undergraduate recruiters. The magazine considered starting salaries, how many graduates each school sent to top MBA programs and academic quality (determined by five measures including average SAT scores and faculty-student ratios).

BusinessWeek published rankings of undergraduate business programs for the first time in 2006, when Georgia Tech was not eligible for inclusion because of a shortage of survey responses from students and recruiters.

This year, the Wharton School of the University of Pennsylvania topped the overall list for the second time. Emory (fourth, up from fifth) is the only other business school in Georgia in the Top 50. The University of Georgia slid from 40th in 2006 to 56th this year.

In the latest U.S. News & World Report ranking of undergraduate business programs, Georgia Tech is 35th in the nation.
currently used to create light sources for optical devices such as laser pointers, DVD lasers, solar cells, photodiodes, and the latest high-density DVD format called Blu-Ray, which is expected to replace DVDs. "MOCVD is used for virtually all high-brightness LEDs in traffic signals, automotive lighting and LCD backlighting, and soon this technology will be widely used to illuminate public buildings and eventually your home," said Dupuis. "I hope that my students can use the knowledge they gain at Georgia Tech and contribute to even greater future advances in this field."

Based on the MOCVD process, light-emitting diode, or LED technology, is already transforming the lighting industry. LEDs provide a highly efficient and reliable light source. As they become increasingly useful for general illumination and displace the incandescent light bulb, consumers will save billions in energy costs as well as cut carbon emissions from traditional power plants.

"The Edison Medal is a very special and truly wonderful honor for me, both because of the wonderful honor for me, both because of the

the rapid fix the United Nations is looking for in developing countries. It would take decades. "Urbanization, climate changes, water scarcity and economic development will affect where water will be available in the future and where concentrated amounts of water will be required to meet the needs of large populations," Hughes says. The United Nations projects that by 2025, two-thirds of the world’s population will live in areas that face water scarcity.

"Historically we’ve tried to go to groundwater sources, such as a well, to initiate improved water sources, but there’s a very finite capacity in groundwater," Hughes noted. "We have to work much harder to make ocean or surface waters safe."

International research has been under way for some time to help improve the water supply and sanitation in developing countries. Georgia Tech Professor of Public Policy Susan Cozzens is leading new research, funded by the National Science Foundation, to determine whether these efforts have been effective.

Cozzens’ interests in how different places are addressing a lack of safe water and sanitation, and whether engineering, health and social science research plays any role in that. Her goal is to provide insight to international and local water authorities in developing countries on how to set the right conditions for people to learn and solve the problems of unsafe water and sanitation.

"There’s a research front out there, but we still need to think innovatively about problems with water supply and sanitation in developing countries," Cozzens said. "Even though there’s only a little bit of social science (research) literature on water supply and sanitation, about half of it is about developing countries."

A statement from Provost Gary S. Schmidt announced that Professor Doug Allen will serve as interim dean of the College of Architecture. Allen, who brings 30 years of experience in the College, has served as associate dean for the past five years and will assume this role immediately. In the coming days, an advisory search committee will be appointed to begin a national search for the next dean.

"The College has established a reputation for excellence and innovation in architecture education," he said. "I am confident that we will find a leader to build upon Dean Galloway’s tremendous efforts and progress."

Professor Nick Holonyak Jr., has had on my academic and professional career."

At eight stories tall, the NASDAQ display in New York City’s Times Square is one example of commercial LED technology.

outstanding and innovative inventor and engineer for whom it is named and for the very many truly exceptional individuals who have received it before me," Dupuis said. "I am especially honored to acknowledge the impact that [University of Illinois at Urbana-Champaign] Professor Nick Holonyak Jr., has had on my academic and professional career."

IN BRIEF:

Blood drive
The American Red Cross and Mobilizing Opportunities for Volunteer Experience (MOVE) sponsor a blood drive, March 27-29 in the Student Center Ballroom. Walk-ins are welcome, but priority goes to those who register at www.gatech.givelife.org (sponsor code "gait.").

Undergraduate Research Spring Symposium
Georgia Tech will feature undergraduate research during the 2nd Annual Institute-wide Undergraduate Research Spring Symposium on April 4. Students, faculty and staff are welcome to browse the poster display and attend individual oral presentations to be held during the afternoon at the College of Architecture. The event will be followed by a reception and awards ceremony to recognize the prize winners from the symposium and Outstanding Undergraduate Researchers from the colleges. Faculty and graduate student judges are needed in all disciplines. Volunteer to help out by e-mailing urpogatech.edu. For a schedule of presentations or additional information, visit www.undergradresearch.gatech.edu/news.

GEDC hosts meeting on 60GHz standard
At its recent meeting held at Georgia Tech’s Georgia Electronic Design Center (GEDC), Ecma International, a standards organization for information and communication systems, moved toward achieving a new international standard, as it reviewed proposals for an air-interface technology that is expected to increase the number of next-generation wireless applications.

Ecma is developing an international standard for wireless high-rate, short-range communications in the unlicensed 60 gigahertz (GHz) band. Defining a common framing structure from the start will ensure compatibility and interoperability for a variety of usage scenarios as well as with other organizations and standardization bodies.

"This is a critical milestone to support uncompressed video streaming and direct data synchronization for portable devices," said Joy Laskar, a professor in the School of Electrical and Computer Engineering and director of GEDC. "With the meeting in Atlanta, Ecma has taken a leadership position in defining the next generation of high data rate wireless throughput. Much of this definition is based upon GEDC’s groundbreaking radio technology developed over the past six years."

Computing hosts student movie competition
A digital film short directed by computing undergraduate Beth York won both first place and the people’s choice award at the first annual College of Computing iMovie Competition earlier this month. For their effort, York and teammates Bradley Herrmann, Matt Bigelow, Audrey Southard and Christine Dreea each took home Apple MacBook Pro laptops.

Playing off the theme of the College’s latest symposium, the competition asked student filmmakers to answer the question, "What does ‘The New Face of Computing’ mean to you?" Each of the entries is available online at www.cc.gatech.edu/imovie.

www.whistle.gatech.edu