Quality of patient care addressed in student design seminar

Matt Paige
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A new interdisciplinary class at Georgia Tech seeks to enhance the quality care and experience for patients, families and caregivers. The studio design class that enables students from different disciplines to collaborate on designing rooms for medical facilities that are more patient- and doctor-friendly. The class, COA 8823, is designed as a research and design workshop that looks intensively at a particular environment — in this case, the hospital patient room — in order to propose and develop projects for the "Patient Room of the Future." It was the first of its kind at Tech, pairing students from the College of Architecture with their peers in health systems engineering and nursing students from Emory University.

Students are asked to resolve issues that face builders, health care facility managers and designers. Last fall, the class took field trips to various hospitals and medical facilities where they interviewed staff, patients and their families to understand the kinds of problems inherent to current conditions.

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Postdoc co-hosts new PBS science show

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It’s said that getting a degree from Georgia Tech can prepare you to do just about anything — and that includes starring in your own TV show. Georgia Tech scientist Bahareh Azizi made her debut on PBS last week, co-hosting “Science Investigators,” a program which young, energetic scientists lead viewers on an hourlong expedition into the realm of science and technology.

The program is one of three that PBS is broadcasting this month in its quest to find its next hit science show. The other two are "Wired Science," a program that translates Wired magazine’s journalism, and "22nd Century," a program that uses scientists and futurists to imagine what the world will look like 100 years from now.

PBS is asking viewers to weigh in on which show they'd like to see turned into a 10-episode series this fall. The network will use that information, combined with Nielsen ratings and other tools of the broadcast trade, to decide which series makes it and which doesn’t. Pilot episodes for all three shows, plus extra footage, are on the PBS Web site.

Parks replace parking as campus core gets greener

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To borrow a couplet from the '80s pop band Talking Heads, "once there were parking lots, now it’s a peaceful oasis."

Well, not yet. But when the weather warms up, the campus community will have a new spot to soak up some sun when a parking lot bounded by Atlantic Drive and Fourth Street gets a makeover.

During the winter break, crews began tearing up the asphalt parking lot, located between Van Leer Building and the College of Architecture, making way for a new green space. Permit holders for that lot (E-40) are being transferred to the nearby, underground parking deck in the Klaus Advanced Computing Building.

When it is completed, the space will consist of two large lawns bisected by a wide pedestrian walkway running between the two buildings. Additional landscaping — deciduous trees, shrubs and flowerbeds — will frame the area.

According to Frank Lamia, Facilities’ Construction Program Administrator, the next phase of the project will be awarded later this month. The entire project is expected to be completed by the end of May.

The project is part of a larger vision, as campus planners shift commuter parking out of surface lots and into parking decks. In the current version of the comprehensive campus master plan, streets and surface parking encompass a smaller percentage of land use, freeing up space for additional academic facilities and green space.

Ready for duty

Georgia Tech K-9 officers Tiger and Hooch sport new bullet proof vests during a Dec. 18 presentation in the Wardlaw Center. The vests were donated by Vests 'N P.D.P., a local non-profit organization that raises money to buy the protective vests for police dogs. With their training in explosives detection, Tech’s dogs were considered good candidates because they are also called to assist the Atlanta Police Department from time to time.
Passion prompts support of ovarian cancer research

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Every year more than 27,000 women are diagnosed with ovarian cancer. Approximately one-third of them will survive more than five years. Ovarian cancer is one of the deadliest cancers because there is no diagnostic test for it and no obvious symptoms until late in its development. As a result, about 75 percent of ovarian cancers are detected at Stages III and IV when it has spread throughout a woman’s abdomen. At those late stages, extensive surgery and chemotherapy are required, with no assurance of lasting success.

To help reverse this grim trend, alumna Deborah Nash Willingham has made a seven-figure commitment to support health and cancer research at Georgia Tech’s School of Biology, with first preference for ovarian cancer research. The School is a research partner with the Ovarian Cancer Institute, headed by John McDonald, professor and chair of the School of Biology, and Benedict Benigno, noted Atlanta gynecologic oncologist with the Southeastern Gynecologic Oncology Group.

“I have been so impressed with the people working in the Ovarian Cancer Institute,” said Willingham, who graduated from Tech with an industrial engineering degree in 1978. “Their optimism in potentially finding a definitive blood test for ovarian cancer is contagious. The death rate in ovarian cancer is higher than many other cancers because it is so often undiagnosed or misdiagnosed. The work they are doing could save many lives, and I want to help ensure they have the equipment, facilities and staff to work as fast as possible toward their goal.”

Willingham’s commitment is a reflection of her longtime interest not only in the specific area of women’s health, but also in a broad range of health concerns. “The important issue for me,” she explained, “is continuing to make progress with gene mapping and similar efforts so that research can be even more individually focused, not just on large classes like gender and race, but on specific genes that can mark them as needing preventative treatments.”

A retired senior vice president with the Microsoft Corporation, Willingham is a member of the Campaign Steering Committee and the Georgia Tech Foundation Board of Trustees, an emeritus member of the Industrial and Systems Engineering Advisory Board, and a former chair of the Georgia Tech Advisory Board. She delivered the fall Commencement address in 1999. A longtime resident of Seattle, Willingham is a passionate supporter of health care, the arts, and social services for the needy.

“When you have someone with the distinguished corporate and philanthropic background of Deborah Willingham make such a substantial investment in a research program, you know the work you’re doing has real value,” said McDonald. “While all of us in the School of Biology and the Ovarian Cancer Institute are eager to express our gratitude for her support, the real beneficiaries are the countless women whose lives will be saved as a result.”

Two ECE faculty members elected as IEEE fellows

Megan McRainey
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Two Georgia Tech professors, Abhijit Chatterjee and Joseph L.A. Hughes have been named fellows by the Institute of Electrical and Electronics Engineers (IEEE), the world’s leading professional association for the advancement of technology.

The IEEE grade of fellow is conferred by the board of directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest.

Chatterjee, a professor in the School of Electrical and Computer Engineering (ECE), was recognized for his contributions to testing analog and mixed signal circuits. Hughes, also an ECE professor, was recognized for his contributions to engineering education program development, assessment and accreditation activities.

Chatterjee’s research focuses on designing multi-gigahertz (GHz) radio frequency (RF) front-end systems that can adapt to process variations, environmental operating conditions and interference. The work is driven by prior studies that have shown that system-level self-tuning capability is a must for future broadband software defined radio systems to be successful. The project is developing built-in test, measurement and adaptation techniques for RF systems.

From 1996-1997, Chatterjee was a partner in NASA’s New Millennium project. He has published more than 250 papers in refereed journals, conferences and workshops, has written several book chapters and has seven patents. He co-founded Ardest Technologies, a mixed-signal test solutions company, serving as chairman and chief scientist from 2000-2002. He co-founded the Multi-GHz Test Workshop and received an IEEE Service Award for his contributions in 2005. He received his doctorate in electrical and computer engineering from the University of Illinois at Urbana-Champaign in 1990.

After earning his doctorate from Stanford University, Hughes joined Georgia Tech in 1986 as the computer engineering program just beginning. Early in his career, Hughes led the development of the undergraduate and graduate computer engineering curricula, student recruitment, and application for program accreditation, which was initially approved by the Accreditation Board for Engineering and Technology in 1990. Since 1994, he has held coordinator and associate chair positions in ECE related to academic program management and now serves as senior associate chair for academic operations.

Hughes was the computer engineering program coordinator at Georgia Tech Savannah from 1998-2002 as that program was being founded and established. A past division officer of the American Society for Engineering Education, he now serves as president of the IEEE Education Society.
questions that a Connecticut middle school teacher submitted on behalf of her class.

In her first segment, Azizi and co-host astrophysicist Kevin Hand examine why a certain species of frogs has disappeared from Long Island, NY, and how it may be an early warning for humans.

"That's a very serious issue because any changes in the environment, even small changes, they can detect," said Azizi. And if we have a die-off of certain types of species, that means there's something in our environment that's affecting us, but we may not be able to feel it yet.

During the segment, Azizi enlists the help of the amphibian conservation program at the Atlanta Botanical Garden to help uncover what may be responsible for the disappearing frog species on Long Island.

In Azizi's other segment she takes a spin in an electric race car that accelerates from zero to 60 mph in three seconds.

"We were going, I think, 120 mph, but when Kenny Shepherd, the NASCAR driver, got in there he actually took the car even faster," she said.

An unexpected turn

Azizi said she was looking for faculty jobs on a science career Web site, when she saw the posting looking for a host of the show.

"I thought, oh yeah, I'll apply, whatever," she said. Not really expecting much. "But then I got a callback to send in my picture and then to send in my tape."

After not hearing from the producers for a while, and just as she had given up hope, she got a call asking her to fly to Oregon to interview a professor for the frog segment.

All in all, filming the pilot took about six days. Azizi also noted that teaching an 8 a.m. class in New York and interviewed people at the Atlanta Botanical Garden.

"It’s been much fun. Those days went by so fast, it’s incredible," she said.

Using real scientists to host the show, instead of actors, gives the show an interesting dynamic, she said. "There were a lot of times where my experience as a scientist really came into play because we actually do experiments on the show," said Azizi. "At the very least, I’ll be an expert on anything, so when we were filming the DNA experiments, we used our expertise to use the brightest DNA marker we could find, so it would look good on camera."

Azizi said her experience in the Ph.D. program at Tech and teaching a freshman chemistry course helped her immensely in hosting the show.

"Tech prepares you so much for the real world. It taught me discipline and to work as hard as I can," she said. "The toughness of the program gives you endurance. You're filing 14 hours a day — if I didn't have experience putting in 14-hour days in the lab, I would have had a harder time at the shoots."

Azizi also noted that teaching an 8 a.m. class of freshman chemistry gave her the ability to communicate complicated topics in everyday language.

"I used a lot of analogies with real life for my students, because I think what captures their curiosity the most is how can they relate it back to their lives," said Azizi. "That's the cool thing about science. People actually take what they learn in the lab and apply it to life."

The collaborative class not only had an impact in the science lab, it also wanted to plan for what the future needs of patients are going to be. Most families will have both parents working. If they want to stay with their spouse in a patient room, the rooms need to be designed with this in mind.

"We studied family trends and how families exist in current patient rooms," said Seo. "The rooms didn’t always use space efficiently, and we also wanted to plan for what the future needs of families are going to be. Most families will have both parents working. If they want to stay with their spouse in a patient room, the rooms need to be designed with this in mind."

"It was interesting to see why all these different disciplines needed to be involved in this project to come up with a solution," said Wimsler. "One group alone can’t come up with the answer, but disciplines needed to be involved in this project or the project might not even be feasible."

"Sometimes in the real world you’re looking at several perspectives of the same problem to decide how we wanted to design the room."

"It taught me discipline and to work as hard as I can," said Azizi. "That's the cool thing about science. People actually take what they learn in the lab and apply it to life."

For more information, visit www.robocup-us.org.