Putting ‘Tech’ in ‘Teaching’

A recent column in The New York Times, titled “How to Hold Colleges Accountable,” had several suggestions for making higher education more effective, but at the top of the list was “quality of teaching.” Thankfully, many Georgia Tech faculty members are on the cutting edge of best practices in the classroom and make it a point to sharpen their craft regularly.

A Tale of Two Teachers
MARGARET TATE
INSTITUTE COMMUNICATIONS

Every spring, the Center for the Enhancement of Teaching and Learning (CETL) honors Tech’s best teachers as part of the Faculty and Staff Honors Luncheon. This year, two STEM educators earned one of CETL’s biggest awards.

The Geoffrey G. Eichholz Faculty Teaching Award is presented annually to two faculty members who teach core undergraduate courses that serve all majors. The award comes with a $5,000 prize per recipient per year for three years.

This year’s winners, Chrissy Spencer and Raghu Pucha, teach in the School of Biology and the George W. Woodruff School of Mechanical Engineering, respectively.

Both happen to be avid proponents of, and participants in, CETL programs, and both Raghu Pucha (top) and Chrissy Spencer were recognized this year for their dedication to being outstanding educators.

Flipped and blended classrooms are gaining momentum at Georgia Tech. This method of instruction is exciting for many reasons — particularly because “flipping” provides instructors more time in class to work with students on coursework and concepts, leading to greater student mastery.

Yet, educators should be warned that a flipped class can easily turn into a “flopped class” if flipping isn’t approached carefully, and if significant time and preparation are not given to this method of instruction.

The Center for 21st Century Universities (C21U) recently assembled a team of “flipping veterans,” Bonnie Ferri from the School of Electrical and Computer Engineering, Don Webster from the School of Civil and Environmental Engineering, and Jung Choi from the College of Sciences, to share successes and failures they’ve experienced in learning to flip a class.

Why do educators value a flipped classroom?

The panelists agreed upon the fact that educators greatly value a flipped classroom because it allows for more hands-on or application-based project time, since students view lessons before class.

Tech Earns Defense Security Service Counterintelligence Award

Georgia Tech is one of only two recipients of this year’s award, and the only University-affiliated winner to date. The award honors the cleared contractor that best demonstrates an ability to stop the foreign theft of U.S. defense technology. Tech was one of more than 10,000 cleared defense contractors in 2014.

www.c.gatech.edu/ddsaward

Staff Town Hall Presentation Archived Online

Those unable to attend the President’s May 7 Town Hall can view a video of the presentation and subsequent Q&A session at president.gatech.edu

Institute Diversity Expands Staff

Effective June 1, 2015, the Culture, Diversity, and Inclusion team from the Office of Human Resources will join the Office of Institute Diversity to form the core of its new Staff Diversity, Inclusion, and Engagement team.

www.c.gatech.edu/oid-staff

THE MAKING OF A MAKER SPACE

Texas Instruments recently donated $3.2 million to support the construction of the Texas Instruments Plaza and Maker Space for the School of Electrical and Computer Engineering. The plaza and maker space will be located adjacent to and in the Van Leer Building, at the north end of Tech Green in the heart of campus. Learn more at www.c.gatech.edu/ti-plaza.
Archival Exhibit Explores the Architecture of Peachtree

KIRSTEN BAILEY
INSTITUTE COMMUNICATIONS

Whether viewed from a car on a daily commute, or seen once a year during a six-mile race, the Peachtree Street corridor is familiar to many Atlantans. The history of its architecture and how it came to take shape, though, may be less so.

The Georgia Tech Library and College of Architecture are presenting an archival history of the city’s main thoroughfare in a new exhibit, The Peachtree Way, hosted in the Stubbins Gallery in East Architecture through May 27.

The exhibit features architectural drawings, renderings, and modern photographs of some of Peachtree’s most iconic buildings, many of which were designed by Georgia Tech alumni.

“The School of Architecture has been here for more than 100 years, and Georgia Tech has had a significant impact on the Peachtree corridor,” said Cathy Carpenter, head of the College of Architecture Library. The exhibit’s contents were collected over the past year by Carpenter as well as Jody Thompson, head of the Georgia Tech Library Archives, and Robin Prater, program manager for the exhibit and a Ph.D. student in the College of Architecture.

Around 30 buildings are included in the exhibit, where attendees will learn about the different types and eras of development from south to north along the corridor. Buildings were selected not only based on their role in the Peachtree cityscape, but also based on the accessibility of related archival documents.

Elements of the exhibit date as far back as 1897 with the construction of the Flatiron Building. It culminates with a section dedicated to those buildings along the corridor that have withstood various eras of construction, destruction, and development.

“These buildings give us an idea of what Peachtree was like once upon a time,” said Kirk Henderson, records manager for the Library and an exhibit organizer.

One section includes the work of John Portman, Tech alumnus and namesake for the John Portman Dean’s Chair in the College of Architecture. Another section of the exhibit highlights the Fox Theatre area, just east of campus, and the 1974 campaign forged to save the “fabulous” movie palace from demolition.

“That was really a turning point for Atlanta in terms of preservation instead of destruction,” Henderson said.

The exhibit serves as a kickoff event for a new regional archive program for Atlanta. The collaborative effort includes Georgia Tech, the Architecture and Design Center, and the Atlanta and Georgia Chapters of the American Institute of Architects (AIA). The program hopes to compile and expand a collection of significant architectural and design documents to better record history in Atlanta and Georgia. The Georgia Tech Library Archives will collect, preserve, and make the collection accessible to researchers.

The exhibit also coincides with a national convention being held this week in Atlanta for the AIA. Jennifer Bonner, assistant professor in the College of Architecture, and Howard Wertheimer, director of Capital Planning and Space Management, will take attendees on tours that will include a stop at the Stubbins Gallery exhibit.

The Stubbins Gallery is open weekdays from 8:30 a.m. to 4 p.m. on the second floor of the East Architecture Building.
Buzzwords Occupy Business Communication

But What Would We Do Without Them?

VICTOR ROGERS
INSTITUTE COMMUNICATIONS

Meetings, emails, and presentations are often filled with a seemingly endless stream of jargon — such as ‘pick the low-hanging fruit’ or ‘think outside the box’ — that is supposed to serve as shorthand to help convey a message. Does it work? Does its overuse become a cliché? Why do people rely on jargon to communicate?

“Ever since Robin Lakoff and Mark Johnson’s landmark book 2003 study, Metaphors We Live By, there has been a broader recognition of metaphors — a figure of speech in which a word/phrase is linked to an object or action to which it is not literally connected: thinking does not ever happen in boxes,” said Richard Utz, chair of the School of Literature, Media, and Communication. “They try to help simplify and link more complex subject matter with commonly comprehensible objects, such as fruit and boxes, to enable easy communication.”

Joey Asher, adjunct lecturer in the Scheller College of Business, agrees — up to a point. “On the positive side, buzzwords create a shorthand among people who know each other well. It’s essential to have a shorthand when communicating,” he said. “The danger is making the assumption that people understand what you mean. There’s group pressure to be quiet and nod — even if you don’t understand.”

Another problem is that jargon is generational, Asher said. “Buzzwords change over time, so younger people may not be familiar with older phrases.”

“Thus, while a German metaphor or buzz phrases,” he said. “Just speak simply. Mark Twain said, ‘If you can catch an adverb, kill it.’ I think you can amend that to, ‘If you can catch a buzzword, kill it.’”

Utz noted, as well, that these expressions are sometimes regionally specific, sometimes class-, gender-, or race-specific, which can lead to misinterpretation by those unfamiliar with the buzzword or phrase.

“Another danger of misinterpretation has to do with the cultural specificity of many buzzwords and their inbuilt metaphors,” said Utz, whose background includes the study of rhetoric and linguistics. “Thus, while a German will probably get the idea of ‘thinking outside the box,’ the German will prefer using a different buzz phrase to express the same issue — über den Tellerrand schauen — which is translated as: ‘to look beyond the edge of one’s plate.’”

Clearer Communication

So, if buzzwords have the potential to be so confusing, why do people continue to use them? “I think people use buzzwords to make themselves sound smarter,” said Asher, who also is president of Speechworks, a personal coaching business. “My gut feeling — when listening to people who use buzzwords — is that they don’t know what they are talking about. There’s a backlash to the use of buzzwords. People trust you less. People are sensitized to it. Theirs b.s. detectors are pretty refined.”

So, what’s the alternative? “I do think people overuse buzzwords and jargon as a substitute for clear speech, and they should try to avoid it,” Asher said. “Just speak simply. Mark Twain said, ‘If you can catch an adverb, kill it.’ I think you can amend that to, ‘If you can catch a buzzword, kill it.’”

Utz disagrees. “There really is no way for human beings to do without metaphor or buzz phrases,” he said. “They render us human beings capable of connecting what we know about our physical and social experience with subjects or issues we could otherwise not comprehend.”

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For a more comprehensive listing of events, or to add one of your own, visit calendar.gatech.edu

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EVENTS

May 27
The Workplace Learning and Professional Development group hosts a free training session on conflict management from 9:30 a.m. to 5 p.m. in Room 149, Global Learning Center. Register at trains.gatech.edu

MISCELLANEOUS

May 11
Classes for early short and full summer sessions begin.

May 12
The Georgia Tech Employee Health and Fitness Month, GO T.E.C.H. hosts the President’s Campus Walk beginning at 6:30 p.m. at the Campus Recreation Center. Choose a one-mile, two-mile, or the Pi-mile route. gotech.gatech.edu

May 16
The Student Center hosts a free viewing of Big Hero 6 at Dodd After Dark, Georgia Tech’s outdoor summer movie series in Bobby Dodd Stadium. Gates open at 7 p.m. and the movie begins around 8 p.m. Additional movie showings and information at c.gatech.edu/doddafterdark

May 20
The Office of Human Resources hosts a free Be Well session on Tips for Healthy Eyes in Room 230, Student Center, from noon to 1 p.m. Register at c.gatech.edu/beewelleyes

May 21
The Georgia Tech Military Affinity Group hosts a Memorial Day ceremony on the Wardlaw Center steps at 11 a.m. gtmag.net

May 21
The Staff Council will host its first Town Hall event from noon to 1 p.m. in the Student Center Theater. staffcouncil.gatech.edu

May 21
Join a community conversation on Building the Foundation for Community Innovation. The symposium will conclude with a celebration of Ron Hutchins’ leadership as he departs from Georgia Tech. The event takes place from 1 to 6 p.m. in the Global Learning Center. RSVP at c.gatech.edu/hutchinsroast

May 25
Campus closes for observance of Memorial Day.

May 28
GO T.E.C.H. hosts a free meditation session as part of National Employee Health and Fitness Month, from 12:15 to 12:45 p.m. in Studio A, Campus Recreation Center. Learn basic techniques to relieve stress and achieve deep relaxation. gotech.gatech.edu

CADDELL BUILDING COMPLETE

(Left) Steven French, Dean and John Portman Chair in the College of Architecture, speaks at the dedication of the John and Joyce Caddell Building. The new home for the School of Building Construction was dedicated on April 28. (Right) An interior stairwell features industrial details.
describe effective teaching as an evolutionary process that requires continual assessment — of themselves as well as their students — and regular fine-tuning.

Raghun Pucha
Raghun Pucha, who came to Georgia Tech as a postdoctoral fellow in January 2000 and started teaching in 2005, said he did not give much thought to a “teaching philosophy” during these early days in the classroom. He remembers trying to motivate students with “pep talks.”

“I would say ‘Guys, come on, this is a great subject, learn it!’ But I soon realized that motivation is a byproduct. When you’re engaged, that’s what gives you the motivation to go further.”

So Pucha abandoned his top-down, lecture-centered approach in favor of an open-ended, problem-based approach.

For example, in his ME 401 Interactive Graphics and CAD course, students are given a product to develop using the visualization tools they are learning.

“We need to make them realize learning is their responsibility,” he said. “I’m here to give you the various fundamental concepts, but you must explore and learn beyond that.”

Pucha establishes a “minimum expectation platform” and uses ongoing assessment to determine individual needs and ensure that no student exits the course without meeting these expectations, though many exceed them.

“They understand that I’m more interested in their learning than in their grade. I don’t judge them,” he said.

“For them to be able to take the feedback, understand the mistake, and be able to fix it, that gives them confidence and the platform to go on to the next step.”

At the end of every semester, Pucha makes notes about what really worked and what might need improvement. “I also talk to many students when they come to my office,” he said. “I say, ‘Hey, I implemented this, what do you think about it?’”

One of Pucha’s office is filled with Thank-a-Teacher certificates and he consistently earns high scores and positive comments on the Course Instructor Opinion Survey (CIOS).

“They understand that I am more interested in their learning than in their grade. I don’t judge them.” — Raghun Pucha

One such student comment reads, in part: “Dr. Pucha, you are an incredible professor! A quote of yours … will stick with me forever: ‘Due dates are not important. What is important is that you have learned the material.’

I believe education should be more like this instead of forcing everyone to be on the same page at the same time.”

Chrisy Spencer
Chrisy Spencer said the first thing she needed to hear as a teacher was, “It’s OK to try things. The second thing she needed to hear was, “It’s OK to make mistakes.”

Her first teaching assignment was as a postdoctoral fellow at the University of Toronto, where she stuck to a traditional lecture format. She then moved to Lens-McRae, a small liberal arts college in North Carolina, for a two-year stint as a biology instructor. While there, she attended a faculty boot camp.

“I just came back with my head exploding with ideas,” she recalled. “It was exactly what I needed at that point to transform what I did in the classroom.”

It also made her more marketable when it came time to apply to Georgia Tech. “I had both the vocabulary and the practice to say that I would be an effective faculty member with the cutting-edge teaching practices we use here in our biology program.”

A few of the innovative teaching practices Spencer has implemented since coming to Georgia Tech in 2010 include flipped classes, team-based learning, and service-learning. For larger classes, she uses an online platform, Learning Catalytics, which is designed to make big classrooms work more like smaller ones.

Spencer keeps a running file on every course she teaches, and whenever she finishes a lecture, activity, or exam that didn’t go as well as planned, she makes a note of it. Her end goal is always for students to meet specific learning objectives.

“If I’m ever doing anything that’s not allowing students to meet one of the goals I have for them, I have to rethink that,” she said.

“Our students are so good … But sometimes it’s hard to figure out if I’m pushing them too far or not far enough.” — Chrisy Spencer

One thing Spencer has discovered is that “teaching in general” and “teaching at Georgia Tech” are two different challenges.

“Our students are so good, and I can push them pretty far,” she said. “But sometimes it’s hard to figure out if I’m pushing them too far or not far enough.”

It’s a nice problem to have, she admits, but she must be striking the right balance.

Like Pucha, Spencer consistently pulls in positive comments on the CIOS, like this one from her Bio102:1510 course: “I appreciate your efforts in lecture … Your passion for biology and a certain care for presenting the material come across during that hour, and the positive effects on my learning remain. You truly make a difference through teaching.”

Jeff Selingo Joins Tech and C21U as Visiting Scholar
Author and award-winning journalist Jeff Selingo’s books explore the value of college, online education, and the shifting dynamics of the American higher education system. Selingo is a professor of practice and special advisor at Arizona State University, where he leads ASU’s Academy for Innovative Higher Education Leadership in partnership with Georgetown University.


“Jeff is one of the most visible and effective advocates chasing the American higher education today,” said Richard DeMillo, director of C21U. “He will play a strategic role in the center and help us form networks with other centers of innovation.”

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“Recording the lecture video is less important,” says Choi. “It’s the in-class portion and what an instructor does with that time that really counts.”

What’s the best advice you would give to someone flipping a class for the first time?

Over and over, Ferri, Choi, and Webster asserted two important things to remember when flipping a class for the first time. Do not assume that a flipped class will be easier to manage or less work than a traditional class, and remember to ask for help.

“It’s tricky to successfully flip a class, and people can be discouraged easily without mentoring,” says Ferri. “A lot of times, a person teaching a newly flipped class will see their teacher ratings plummet because they just don’t know what they’re doing. So get a mentor.”

The panel of C21U faculty all concluded that if approached with planning, dedication, and mentorship, the experience of flipping a class can be an opportunity to challenge your student and instructor growth and success.

C21U provides resources and mentorship for those interested in flipped or blended classrooms. For resources and to find out more, explore C21U’s Guide to Flipping Your Classroom at www.c.gatech.edu/C21Uflipguide, or visit www.c21u.gatech.edu.

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FLIP, from page 1
“One of the core benefits of flipping a classroom,” says Ferri, “is that it delivers lessons beforehand and allows students time to apply what they learned afterward.”

Improved examination scores have been another across-the-board benefit of this new style of teaching for Ferri, Webster, and Choi.

“After I looked at the application questions in my exam data, I realized that the students in the flipped version of my class did better than those who were in the previous model,” says Choi.

What mistakes do educators make when making plans to flip a class?

One of the greatest benefits of flipping is providing recorded lessons for students to watch or engage with before class — but this can also become an educator’s greatest downfall when first learning how to flip a class.

All three faculty members have seen flipped courses fail because educators simply recorded their typical lecture materials and expected the format to translate to a flipped class.

“I realized that if I wasn’t going to record something that was better than a normal lecture, then what was the point?” says Webster.

Another major mistake made by faculty in a newly flipped course is to place too much time and emphasis on the out-of-class portion and not enough on the quality of the more flexible in-class interactions and projects.