Studies show co-op students get jobs faster, earn more than peers

David Terraso
Institute Communications and Public Affairs

As Adam Dean’s classmates head back to school this fall, he’ll be heading back to work. As one of 3,500 students in Georgia Tech’s cooperative education program, the chemical engineering senior will spend the fall semester working 40 hours a week at Kerr-McGee in Savannah developing titanium dioxide, a pigment that colors everything from the cream filling in Oreos to paper for your computer printer. Dean hopes the five semesters he’ll spend working will help him conquer the toughest job market in a decade. He may be right. Two recent studies suggest that students who participate in cooperative education programs get their first job faster and at a higher starting salary than their peers. Once they get that job, they receive better performance reviews, move up the ranks faster and receive more pay increases than new employees who haven’t co-oped.

With the June national unemployment rate at its highest in nine years (6.4 percent), many students are worried that a college degree may not be enough to help them land that first job quickly.

"Nowadays my friends can’t get jobs. Companies want you to have experience, but I don’t know how you get experience without getting a job,” said Michael Sugar, a biomedical engineering and mechanical engineering junior at Tech. His co-op job — developing and testing artificial cartilage at Salumedica in Atlanta —

Co-op continued, page 3

Can summer be over already?

Assisted by her mom and a family friend, incoming freshman Kami Bosworth tackles her first challenge at Georgia Tech — getting the carpet into her dorm room. Kami is one of 2,225 new freshmen entering Tech this fall. According to Dan Morrison, associate director of Residence Life, “The two-day move-in process went incredibly smoothly. We had lots of activities planned for the students to get them acclimated to campus, and plenty to do getting them settled in their rooms. Everyone just seemed to roll with the punches.”

Latest rankings keep Tech among top 10 publics in U.S.

Bob Harty
Institute Communications and Public Affairs

For the fifth year in a row, Georgia Tech was ranked by U.S. News & World Report as one of the top 10 public universities in the nation. Tech was ranked ninth among the nation’s top public universities and 57th among all of the nation’s universities, one slot from last year.

“Year-to-year fluctuations in these rankings sell magazines, but it’s the consistency of performance over the years that measures academic quality,” said President Wayne Clough. “I’m pleased to see that with increasing enrollments and decreasing budgets we continue to be ranked among the elite in American higher education. It’s a credit to our students, our faculty, our staff, our alumni and friends.”

Georgia Tech’s peer assessment, the school’s perceived quality among other universities, was high enough to be ranked among the top 20 of all universities in the nation. Numerical scores in faculty resources, percentage of classes under 20, and graduation rates, however, pulled Tech down. Among the top 50 universities in the nation, Tech ranked 65th in faculty resources, and 69th in retention and graduation rates. Further, Tech had fewer than half the number of classes with fewer than 20 students.

“While we can’t place too much emphasis on these data, some patterns are readily discernible. Class size, faculty resources, and undergraduate support are clear areas of emphasis. Unfortunately, our current budget situation, combined with increasing demand for a Georgia Tech education, will make it difficult to make notable progress in those areas. One counter to that problem, however, is the generosity of our alumni,” said Clough. “Our alumni giving rate is first among all public universities and 18th overall. That is a very strong endorsement by our alumni as to the value of their education. We sincerely appreciate that investment from them.”

Tech’s nationally prominent College of Engineering moved into the top five nationally (Tech’s graduate engineering program is also ranked fifth), as did the programs within the College. Most prominent among those programs was the School of Industrial and Systems Engineering, again ranked number one; Aerospace again ranked number two, and Civil Engineering moved down one to fourth. The DuPree College of Management ranked 36th in the competitive business school rankings. Tech’s Co-Op Program, the largest volunteer co-op program in the country, was sited by U.S. News as a “program to look for.”

“It is another very solid showing,” said Clough. “You shouldn’t place too much emphasis on these or any other rankings. But I’m pleased by our national rankings and the consistency of our performance over the last five years. We’re consistently ranked among the nation’s elite public universities, and our College of Engineering and its programs continue their national prominence. For our School of Industrial and Systems Engineering to rank number one in the entire nation — year, after year, after year — is truly impressive.”

Rankings continued, page 2
New assistant dean assures academic integrity

David Terraso
Institute Communications and Public Affairs

W
ould-be cheaters, look out. Georgia Tech has a new detective on the beat.

Andrea Goldblum joined the Dean of Students’ Office in July as Tech’s first assistant dean of Academic Integrity. Changed with investigating allegations of academic misconduct, Goldblum is taking over the position held by Interim Dean Erin Chehnow last year.

Neither a prosecutor nor an advocate, Goldblum is the Institute’s primary fact-finder in cases where students are suspected of academic misconduct. She comes to Tech after spending a year at Roger Williams University, where she was responsible for the school’s non-academic judicial process and served as an administrator in the housing department.

Prior to that, she was the chief judicial officer at the University of Colorado at Boulder, where she administered the non-academic code of conduct.

“I’m very confident of her knowledge of the ethics of the judicial process and student development,” said Senior Associate Dean of Students Karen Boyd.

The position was developed before the cases of unauthorized collaboration in the College of Computing came to light in the spring of 2002, said Boyd. The addition of Goldblum, along with hiring of Ethics Education Specialist Etchika Smith last fall, represents the Institute’s strategy of combating academic misconduct with both ethics education and the judicial process.

“Cheating is a concern at every institution,” said Goldblum. Especially in an era where technologies such as the Internet, programmable calculators and cell phones with text messaging make getting away with it seem easier, she added.

“Before, if you wanted to plagiarize a paper, you actually had to go to a book and copy it down. Now you just go to the Internet and cut and paste. It requires less effort,” she said.

In addition to technological temptations, other factors such as the likelihood of getting caught and the seriousness of the punishment from the administration also influence a student’s decision to cheat, said Boyd. There’s also the environmental factor. “If they don’t feel like they’re in a fair learning environment, they will do something to even the system.”

Both the Technology Square and Centgy projects are being recognized as some of the city’s most pedestrian-friendly developments. Pedestrians Educating Drivers on Safety (PEDS) presented the honor Aug. 15 at its Golden Shoe Awards. Above, a Tech Trolley waits outside the DuPree College of Management.

“It’s a great place to walk around, and it really connects Georgia Tech with Midtown,” said Sally Flocks, president and chief executive officer of PEDS. Awards go to those that have contributed toward making Atlanta accessible for pedestrians.

Our Master Plan emphasizes pedestrian-friendly development and encourages pedestrian activities,” said Bob Thompson, senior vice president for Administration and Finance. “It’s vital that Technology Square be an inviting place for students, faculty, businesses and the local community to meet and interact.

And when they do, it’s Goldblum’s turn to investigate. Here’s how the process works. A student or a faculty member contacts Goldblum with an allegation of academic misconduct. She investigates and decides based on a preponderance of the evidence if the student cheated and what punishment is recommended. She then meets with the student to offer an administrative resolution. If the student doesn’t agree with Goldblum’s findings of fact or the punishment, he or she can have the case referred to the Student Honor Committee.

Possible actions include a warning, educational sanctions such as writing a paper, grade sanctions, suspension or expulsion.

Some of the more common types of academic misconduct are plagiarism, unauthorized access to materials, unauthorized collaboration, falsifying data and changing a grade.

There are things faculty can do to discourage cheating in their classrooms, explained Goldblum. Just being aware that cheating can happen is a big step. Performing spot checks and acting on suspicions of misconduct reduces the temptation to cheat. And being clear about your expectations, especially when it comes to defining what kind of collaboration is allowed for each assignment, is crucial, she said.

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Researchers take a virtual snapshot of cyberspace

What happens when millions of computers exchange information?

Elizabeth Campbell
Institute Communications
and Public Affairs

A team of Georgia Tech Computing and Computer Engineering researchers has created the fastest detailed computer simulations of computer networks ever constructed — simulating networks containing more than 5 million network elements.

This work will lead to improved speed, reliability and security of future networks such as the Internet, according to Professor Richard Fujimoto, lead principal investigator of the project.

These "packet-level simulations" model individual data packets as they travel through a computer network. Downloading a Web page to one’s home computer or sending an e-mail message typically involves transmitting several packets through the Internet. Packet-level simulations provide a detailed, accurate representation of network behavior (e.g., congestion), but are very time consuming to complete.

Engineers and scientists routinely use such simulations to design and analyze new networks and to understand phenomena such as Denial of Service attacks that have plagued the Internet in recent years. Because of the time required to complete the simulation computations, most studies today are limited to modeling a few hundred network components such as routers, servers and end-user computers.

"The end goal of research on network modeling and simulation is to create a more reliable and higher-performance Internet," said Fujimoto.

The researchers have demonstrated the ability to simulate network traffic from more than 1 million Web browsers in near real time. This feat means that the simulations could model a minute of such large-scale network operations in only a few minutes of clock time.

Using the high-performance computers at the Pittsburgh Supercomputing Center, the Georgia Tech simulators used as many as 1,534 processors to simultaneously work on the simulation computation, enabling them to model more than 106 million packet transmissions in one second of clock time — two to three orders of magnitude faster than simulators commonly used today.

The research team plans to present its findings at the IEEE International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS) in October.

Co-op, cont’d from page 1

allows him to get that elusive experience before he graduates in May.

Like its academic cousin, the internship, co-op programs give students a chance to gain professional experience while enrolled in college. But while internships are often part time, unpaid or last only for a semester, students in co-op assignments work full time, for pay, alternating semesters of work and school. This extended employment with one company gives students a chance to increase their level of responsibilities over time and use their education on the job.

Once they graduate, students who have co-op experience tend to get their first job out of college faster and at a higher starting salary than recent graduates who haven’t co-oped, according to a study by Georgia Tech’s Office of Assessment. The survey, conducted between December 2001 and May 2003, contains responses from more than 3,000 recent Georgia Tech graduates. It found that 45 percent of co-op students had found jobs by graduation compared with 37.9 percent of students who had no co-op experience. In addition, the average starting salary for co-op students who had job offers by graduation was $48,555, a 7 percent increase over those without co-op experience.

Another study conducted by the Center for Labor Market Studies at Northeastern University also found that students who co-op receive higher starting salaries than their non-co-op peers. On top of that, it suggested that once they are on the job, co-op students receive faster promotions and better pay increases than co-workers without co-op experience.

The study looked at 11,000 employees, most hired between 1995 and 2000. The average starting salary for employees with co-op experience was $59,700 compared to $57,600 for other employees hired straight out of college. That gap, they also noted, widens over time.

Co-op hites were twice as likely to receive better performance reviews and receive the highest performance rating than non-co-op hites. Two-thirds of the co-op hites received at least one promotion during their tenure compared to one-third of their non-co-op peers. And 14 percent of the co-op hites were promoted to managerial positions while only 7 percent of the non-co-op hites made it to those ranks.

"It’s a symbiotic relationship," said Tom Akins, executive director of Georgia Tech’s Division of Professional Practice. "That’s one of the major reasons it works so well. Students who have co-op experience, companies get employees with the latest knowledge and faculty get students who can give input from the corporate world.

Co-op programs have been around for nearly a century. Today, Tech’s is the largest totally optional co-op program in the country, with more than 3,500 students enrolled. Most recent- ly, U.S. News and World Report selected Tech’s co-op/internship program as an outstanding example of programs that lead to student success.

Timothy Langlies, a chemical engineering major at Tech, said the prospect of future employment and a salary is great, but so is the money he earns at his co-op job at Michelin. “I’m enjoying the money. I’m the oldest of three kids and the first to go to college. For me, being self-sufficient is definitely a strong point of the program," he said. For some students, the extra money can mean the difference between graduating with student loans and being free of debt.

"Classwork is a different kind of learning. If you just take classes, you’re only getting half the story," the degree builds you up, but co-op gives you a head start," said Dean.

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IN BRIEF:

Professor recognized among nanotech’s most cited authors

Materials Science and Engineering Professor Z.L. Wang has been named one of the world’s most-cited authors in nanotechnology research, according to Science Watch, a bulletin that reports on trends in basic research. The bulletin tracked the major players in nanoscale research based on the number of citations to papers published on "nano" topics from 1992-2002.

Wang is ranked 20th with nearly 2,350 citations to 121 nanotechnology papers published over the past decade. He is also the author of one of the most-cited nano papers last year in the area of chemistry. The paper, "Nanobelts of Semiconducting Oxides," reports a remarkable way of making ribbon-like metal oxide fibers, which the authors refer to as "nanobelts" because they have a rectangular cross-section.

In the edition, Science Watch, which is published by the Institute of Scientific Information, also ranks the top 25 universities according to the number of citations received to papers published on nano topics in the last decade. Georgia Tech ranks 12th with a total of 6,150 citations.

New Mars images to be sharpest ever

Sky watchers will get a treat this month as Earth and Mars make their closest approach to each other in thousands of years.

Throughout August 2003, the Red Planet has appeared bigger and brighter in the night sky as its orbit brings it closer to Earth. But at 5:51 a.m. Aug. 27, Mars will be closer to Earth than it has been at any time in the past 60,000 years, said Jim Sowell, a physicist and astronomer in the School of Physics.

"Normally it’s one of the brightest objects in the heavens, but Mars will double in brightness during this period," Sowell said. “It is almost already as big as it is going to appear, and it will stay this large through September.”

Through a telescope, Mars should appear as an orange disk with possibly a white ice cap, he said. But there are other ways for the public to catch a glimpse of the planet, too.

A spacecraft, managed by NASA’s Jet Propulsion Laboratory, has been orbiting Mars since 1997. The Mars Orbiter Camera onboard has taken more than 120,000 pictures in that time.

Many of the camera’s images have sharp enough resolution to show features as small as a school bus. An online gallery of pictures taken by the camera is available at www.msss.com/moc_gallery.

Give blood

The American Red Cross reports that the blood supply in the metro area is low. As one of the metro area’s biggest donors, Georgia Tech will hold its fall drive on Sept. 3-4 from 10 a.m. - 4 p.m. in the galleries of The Center for the Arts. The event is sponsored by Phi Gamma Delta and Mobilizing Opportunities for Volunteer Experience (MOVE). Walk-ins are welcome, but donors may also sign up for an appointment at 894-2002 or move@gatech.edu.

WWW.WHISTLE.GATECH.EDU

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