Students share their Valentine’s Day stories

Roses are red, violets are blue...and when it comes to Tech romance, we couldn’t help but get a little mushy

By Jennifer Schur

"But we do fight when we do physics together. We fight pretty badly, actually."

Melissa

Third-year IE major

"We ended up kind of as friends in chemistry, which is really ironic because we were very attracted to one another and we wanted to date," Adams said. "I just didn’t throw off the shackles of my old boyfriend until late November."

"We went out the following week after broke up with [my high school boyfriend]. Our first date was the Georgia-Georgia Tech football game," Adams recalled. Hoffman and Adams went from seeing each other an hour a day in class to spending a total of about 14 hours together throughout the drive to and from Athens and during the game itself. "It was kind of instant chemistry. It was kind of instant dating."

"Low, six, four, bid," someone shouted, swaying the comfort these friends have amid the somewhat sensitive discussion at hand. Though relationships that evolve from friendships are nothing new (just ask Chandler and Monica for proof), neither are relationships that start suddenly, blossoming from a chance encounter or a late night foray. The next story provides an example of how first meetings can prove that like at first sight really does exist.

Melissa, a third-year Industrial Engineering major, met Sam early last semester, at a party held by mutual friends. "It was kind of instant chemistry. I don’t know how else to say it."

Melissa

Fourth-year ME major

"I don’t actually remember the first time we met, and I hear about that all the time," she admitted. "In the one class they had to together, the only competitiveness that was bred was good-natured. Melissa explained, "Taking the first test, we made a bet. I thought he was going to do better and she thought I was going to do better, so whoever did better on the test would lose the bet, and whoever won would get to choose where to eat dinner and the loser had to treat. And I beat him—so I had to treat him to dinner."

While classes and organizations can offer students the chance to meet their match, concurrent organizational memberships poses another challenge to dating. Hoffman time, ‘Jeff and Caroline time,’ is easy to bring up questions or being thinking about business. So not always fun." In addition, Adams said, "Tech does influence relationships in that maybe you’re a lot more willing to work harder at it; maybe you’re more selective."

So perhaps the obstacles to dating at Tech—the Ratio, competition, organizational involvement—aren’t really obstacles at all, depending on how you look at it.
Tech present at federal hearing on math, science education

By Kristin Noell
Contributing Writer

Though Tech professors are infamous for their ability to dry up the most interesting lecture material, Tech’s Center for Education Integrating Science, Mathematics and Computing (CEISMC) has been making a substantial impact on local schools since it was founded in 1990.

However, on Jan. 23, its director, Dr. Paul Ohme, may have made a farther-reaching impact. In a field hearing of the Science Committee of the U.S. House of Representatives on “Fueling the High Tech Workforce with Math and Science Education,” Ohme addressed a group about how elementary, secondary, and postsecondary mathematics and science education is critical to innovative scientific research and our high-tech economy.

Ohme initially found out about the hearing when Tech’s Washington office, which keeps the university up-to-date on national news, gave his name as a reference to the Science committee. Congressman Phil Gingrey’s office then contacted him and asked if he would be willing to speak. “The whole point of the hearing,” Ohme said, “was to look at the factors that might impact K-12 education and how that relates to our economic strength in the future as a country.”

Ohme had four main points in his testimony. He first spoke about the role the federal government should have in creating and supporting the expectation that all children can and will learn math and science at a high level.

His second point was that to achieve this, students need a “highly qualified, engaging, motivated teacher that is committed to the success of every student, regardless of their background,” he said. Also, he also emphasized that institutions of higher education are a key component in the development of science, technology, engineering and mathematics education, which he believes will lead to a “competent technological workforce.”

Ohme’s final point was that students must “be engaged in learning at proficient and advanced levels with a more suitable curriculum in order to “achieve at proficient and advanced levels.”

Ohme spoke extensively on the importance of cultivating math, science, and technological skills in order to produce a thriving workforce. He said that communities could thrive if students “are supported in acquiring the depth of content knowledge and skills of mathematics, science, and technology sufficient for them to make personal choices and decisions that impact their communities.”

He advocated the necessity of federal funding to support pilot endeavors involving scientists, mathematicians and engineers, their graduate students and undergraduates with the K-12 teaching practitioners and their students,” which is beneficial to all involved, according to Ohme.

CEISMC has programs for students and teachers, as well as partnerships with school districts and state agencies.

Programs for children include Saturday programs and summer Learning Camps, “extending their curriculum beyond their regular
Most of the students that are in the Van Leer building every day—electrical engineering majors studying for their next circuits test, or architecture majors shortcutting through on their way to studio—have probably never noticed the basement entrance to the University Center of Excellence for Photovoltaics Research and Education, home to Tech’s nationally-recognized solar energy program.

The program, which began in 1985, has grown from just one professor to a full-fledged research and fabrication center, mostly through the work of Electrical and Computer Engineering Professor Ajeet Rohatgi, who recently received the 2003 Paul Rappaport Renewable Energy and Energy Efficiency Award, a national award given by the U.S. Department of Energy (DOE).

“When I came, there was no activity in solar cells,” Rohatgi said. “So I started a little bit here and there to see how it would take off.”

The program began with Rohatgi working with just a few graduate students to research what kind of materials could be used for solar cells.

Since there was not much interest in solar energy at the time, “I just hired a couple of students, and we started doing some work on silicon solar cells and started characterizing the material,” he said.

At first, Rohatgi purchased much of the equipment himself, but soon, he said, “We got some funding from the Department of Energy and Sandia National Laboratories to do that.”

This funding allowed Rohatgi to improve upon the existing research being done by developing computerized modeling capabilities.

“It’s not so exciting just to characterize materials,” he said. “So I started developing capabilities [for] solar cell modeling, device modeling.”

Not long after, Rohatgi began adding capabilities to fabricate solar cells, though the task of setting up a fabrication line was not easy. It took Rohatgi and his colleagues almost three years to complete the facilities.

However, when the project was complete, “It became lots of fun,” Rohatgi said. “Things started getting interesting, and we started making some very good solar cells in the next year or two after that.”

In 1992, the DOE noticed Rohatgi’s work, and, impressed by the program’s growth as well as the completeness of the program, “We are probably one of the few universities in this country that can do research from materials to modeling to fabrication,” said Rohatgi.

The initial three-year funding was followed with two more five-year grants. “We’ve done well so far as far as research is concerned and the DOE is concerned,” Rohatgi said, adding, “Our funding level is something on the level of a couple million dollars a year.”

Currently, the program has been flourishing, developing solar energy initiatives around the Atlanta area both for academic and industrial purposes. One of the highlights of the Center’s accomplishments occurred during the 1996 Olympics in Atlanta, where they successfully installed a solar energy system on the roof of the aquatic center.

For this undertaking, Rohatgi was approached by DOE and Georgia Power. “They said we should showcase something that is green and related to renewable energy,” he said. “So that is how we ended up building the world’s largest rooftop grid-connected photovoltaic system on top of the aquatic center.”

The system is still fully functional today, and still produces enough energy to energize an entire subdivision of 70 homes.

In addition, there is also a solar thermal system which, though less often employed, can be used to heat the pool water when needed. “So it’s a double system, one is the active electricity generation [through photovoltaics], and the other is the passive heating of the pool water,” Rohatgi said.

Though the panels are still functioning well today, they only produce about 30 to 40 percent of the energy the aquatic center needs to run; therefore, there are no plans to use the energy for anything else besides the aquatic center. See Solar, page 16
ATDC, VentureLab help transform research into startups

By Joshua Cuneo
Senior Staff Writer

Technology Square has the bookstore, the College of Management and assorted restaurants—but then there are all those sleek new office buildings that you never hear about. Most students don’t know that behind those walls lie the resources to help them start up their own businesses to sell the fruits of their research, or improve the economic circumstances of Georgia’s communities.

These are among the primary objectives of Georgia Tech’s Office of Economic Development and Technology Ventures (EDTV), one of the Institute’s lesser-known non-academic departments that melds technology and business to provide “job opportunities through our operations here on campus...or in the field offices around the state,” according to Wayne Hodges, Vice Provost of EDTV.

EDTV carries out its overall economic development initiatives through three organizations: the Georgia Tech VentureLab, Advanced Technology Development Center (ATDC) and Economic Development Institute (EDI).

VentureLab
Graduate students and professors interested in turning their completed research into a commercially viable product can pay a visit to VentureLab, a relatively new arm of EDTV which began in 2001. VentureLab staff is dedicated to helping Tech researchers harness their entrepreneurial energies and develop their own startup companies to put their product on the market.

“We evaluate the technology to make sure it’s patentable,” said Steve Derezinski, Director of VentureLab, “[and that] the graduate students and the faculty are interested in creating a startup company in the market.” They then evaluate the various markets where the technology could be applied and choose the one whose specific needs best match the product.

To exemplify this process, Derezinski described OptiPhonics, a next-generation microphone recently developed by Assistant Mechanical Engineering Professor F. Levent Degertekin and Mechanical Engineering graduate Neal Hall. With a claimed 100 times increase in sensitivity than the best microphone presently on the market, Degertekin, Hall and VentureLab evaluated several potential markets for it—including military applications, sonar for oil drilling, and isolating malfunctions in industrial machinery—before settling on hearing aids.

Once the entrepreneurial seed is planted, VentureLab recruits corporate experts to assist the researchers with the business and marketing side of the developing company. “We pair professors with industry executives that have specific market knowledge, and that becomes the startup company,” Derezinski said. “We give them an opportunity to ‘date before they get married,’ as we like to say, and then we present that venture to...corporate investors.”

To help accomplish this, VentureLab hosts Technology Days throughout the country where the technologies of VentureLab-assisted startups are showcased for corporate managers. Many of these events have been held for executives with an estimated worth of up to billions of dollars.

VentureLab works mainly with faculty and graduate students, because “usually, there’s a very limited connection between your thesis work and the job that you’re looking for,” Derezinski said.

Nevertheless, VentureLab does interface with many students at the DuPree College of Management and, to a lesser extent, with mechanical engineering majors, in whose classes Derezinski occasionally gives guest lectures on patentability. But Derezinski said that VentureLab could be of interest to many Tech students, both undergraduate and graduate, especially those “who are going to continue on going to graduate school and have an entrepreneurial drive.”

Advanced Technology Development Center
Headquartered at Georgia Tech, ATDC is “a nationally recognized technology incubator that helps Georgia entrepreneurs launch and build successful companies,” according to their website’s official description.

ATDC provides newly-graduated companies with office space, strategic business advice, and the people and resources they need to succeed. ATDC also runs a Seed Capital Fund to help its new startups meet financial obligations. The Fund promises a minimum three-to-one match with private investors and provides $1.7 million leveraged at a 19-to-1 ratio with 22 investors. The Fund has proven to be a successful program, as all but one of companies who have received Seed Fund dollars are still in business.

The organization itself dates back to the 1980s as part of Georgia’s ongoing economic development effort, specifically by encouraging growth in Georgia’s technology business base. Over 100 companies have emerged from ATDC since then, including the former MindSpring Enterprises, now part of EarthLink.

The creation of these businesses benefits both Georgia Tech students and the general community by providing job opportunities. In 2002 alone, for instance, ATDC companies provided more than 4,900 high-tech jobs, and startup companies receiving Seed Fund investment has spawned 150 jobs so far.

Today, ATDC is widely considered one of the nation’s premier university-associated economic development centers. As ATDC is affiliated with Georgia Tech, the startups themselves become Georgia Tech affiliates and presently include members such as Synthis, CardioMEMS, Magnet Communications and Thrive Technologies.

Economic Development Institute
While VentureLab helps students and faculty form companies and ATDC helps them take off, EDI is dedicated to assisting those that already exist. Responsible for supporting the state’s economic development efforts, EDI helps enhance economic prosperity by helping struggling businesses survive and bringing business into many of Georgia’s rural communities.

For instance, EDI has helped many small and medium-sized busi-
school classroom and inspiring them to return to school with a renewed ability to learn science and mathematics,” Ohme said.

CEISM also provides professional development opportunities to teachers, such as the Georgia Industrial Fellowships for Teachers, where teachers come and work in a Georgia Tech laboratory, as well as in places of business and other campuses, including Emory.

“Any of these camps are beneficial because the teachers can see applications of the material that they teach and they are updated on current research. They are then able to transfer the information to their classrooms,” Ohme said.

Supported by mentors, the teachers are able to “translate their research experiences into classrooms for their students once they return to their classrooms,” Ohme said. Last summer, over 80 teachers, about half high school and half middle school, were placed in internships where they were able to have a research experience.

These programs reflect the mission of the Institute to be on the forefront of technology. “If you’ve been out of school for five years, you’re not on the cutting edge anymore; if you’ve been out 10 or 15 years, even more so,” Ohme said. “So I think it’s really essential that there be programs like this—in fact, that’s one of the things I embedded in the Congressional testimony.”

Tech students are also getting involved: through CEISM’s Mentoring Program, between 100 and 125 Tech students are serving as mentors and tutors in various school districts in the metro area.

“There’s nothing quite like teaching, and many students are working in demographic areas unlike the one they were raised in,” Ohme pointed out. “There’s a lot of cultural experiences as well, and it’s just fun to work with young people.”

Ohme’s testimony at the Congressional hearing, though informative, is not the only one that the Science Committee will hear. The committee continually gathers information from various sources before Congress comes up with policies and programs and appropriates money.

“Whether this testimony makes any difference or not, you never know...[But] you can’t pass up the opportunity.”

Paul Ohme
Director, CEISM

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Director, CEISM

Atkins gets crash course in campaign managing

By Jennifer Lee
Focus Editor

...Faces at Georgia-Tech...

While Dennis Kucinich was on campus this past Tuesday, Tim Atkins, a fourth-year public policy senior, was busy making sure things were going smoothly.

As the Georgia coordinator for the Kucinich campaign, Atkins was also responsible for Kucinich’s introduction—and, as all things go, not all bumps could be avoided.

“I lost my speech!” said Atkins ruefully.

While the audience was waiting for Kucinich’s arrival, “I was in the back freaking out,” he said. “I ended up winging it.”

The past week has been busy for Atkins, but with the Mar. 2 primaries nearing, there’s no sign of slowing down in sight.

“For the next two days we’ll have a little bit of a break,” he said. “And then get right back into the swing of things.”

Atkins’ involvement in the Kucinich campaign began when he attended a meet-up event last August in Atlanta.

Atkins was also responsible for Kucinich’s introduction—and, as Atkins ruefully.

As the Georgia coordinator, Atkins has learned how to do everything from managing volunteers to making impromptu speeches.

His position keeps him in frequent touch with the national campaign, whom he calls once or twice a day. “I have someone that I report to,” Atkins said, “just so I let them know what’s going on in Georgia.”

In addition to those calls, he said “I get about 100 emails a day and about 15 phone calls a day now.”

Amazingly, Atkins performs...
However, Rohatgi pointed out that “[the system] produces something like 400 megawatt-hours of electrical energy each year, which prevents the release of 400 tons of carbon dioxide into the air.”

As director of the Center, one of Rohatgi’s roles also is industry communications. “They contract us to look at their materials and products and provide them with the guidelines of how to improve their products, materials and devices,” he said. The center has programs with many of the major companies involved in solar energy research, such as Shell and BP Solar.

Rohatgi also teaches a graduate level ECE course on solar cells, as well as some other courses on fabrication of semiconductor devices and integrated circuits. Many of the Ph.D. students that he is currently advising have become involved through his classes.

Lastly, the center also serves as a base for education. Students often come to UCEP to learn about the process of making a solar cell.

“I try to promote photovoltaics, because I feel that is one thing that is very important for [us] to advance,” Rohatgi said. “People don’t fully understand how solar cells work…and the more we educate people at the younger level, the better it will be for photovoltaics to move faster.”

Currently, the cost of solar energy is about two to four times higher than fossil fuels. Much of the center’s research focuses around improving this statistic.

In addition to trying to produce low-cost, high efficiency cells, another way to integrate photovoltaics into buildings.

“The idea here is not to put the panels on top of an existing roof, but to make the roof out of panels, so you replace the building materials by solar panels,” he said, thus replacing the cost of materials and installation.

Rohatgi remains optimistic that solar energy will eventually be comparable to fossil fuels.

“Photovoltaics have been growing at a rate of 30 to 35 percent a year since 1996, and it is projected that it will continue to grow at least at 25 percent for the next two decades,” he said. “[So] by 2020 it is expected that the cost will become competitive with fossil fuels.”

“That’s what we are all working towards,” Rohatgi said.
Come to our weekly meeting Tuesday at 7:00 p.m. in room 137 of the Student Services building and eat free pizza.
his duties as coordinator while still being a full-time student. Though the School of Public Policy is allowing Atkins to receive 6 hours of internship credit for his involvement with the campaign, he is also taking five classes, one of which is his senior thesis.

He likens being coordinator to having a full-time job. “I can’t keep track of the hours,” he said, “I honestly can’t.”

His role as coordinator also involves weekly meetings with the 10 or so key volunteer staff that help him with the campaign.

Much of the administrative work takes place from his own apartment, since they don’t have enough funding to maintain an office. “We’re pretty much running out of my car and my apartment,” he said.

Atkins also has to work with the other 200 or so volunteers statewide. “We have a very diverse group of people,” he said. “Neo-hippies, to potheads, to people who are professionals who work for the EPA, to fickle volunteers. “I finally had to stop being diplomatic and just lay it down. It was tough.”

Despite Kucinich’s definite long-term support for the campaign, Atkins sometimes hit roadblocks. “The one thing [they] never warned me about was that you’re just going to have to be mean sometimes,” Atkins said, especially with fickle volunteers. “I finally had to stop being diplomatic and just lay it down. It was tough.”

But Atkins’ firm resolve may have also been the reason there was a rally at Tech this week in the first place.

One time, during a weekly conference call among state coordinators, Atkins said, “I had kind of been raising a stir because… the campaign wasn’t really paying attention to the south.”

And the people I’ve met have been unbelievable—the nicest people I’ve ever met, absolutely.

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One time, during a weekly conference call among state coordinators, Atkins said, “I had kind of been raising a stir because… the campaign wasn’t really paying attention to the south.” Atkins said, “So Kucinich came on [the phone] and made a promise that he was going to visit all the colleges—so much for that.”

Tim Atkins
Public Policy senior

“Of course you don’t know anything about political strategy and I do,” Atkins recalled.

Another aspect of politics that Atkins wasn’t prepared for was the social aspect.

A self-described introvert, he said, “You have to be willing to mingle with people—and I hate mingling. But you have to be willing to do the political schmoozing.”

On the other hand, there were times when Atkins also had to be not so nice. “The one thing [they] never warned me about was that you’re just going to have to be mean sometimes.”

Atkins said, “I originally wanted to be just in charge of the colleges—so much for that.”