Building the New Internet

Ellen Zegura and Nick Feamster (both CS) represented the College of Computing at a Sept. 28 panel discussion, “The New Internet,” sponsored by the National Science Foundation and Discover magazine. The event sought to address the current trajectory of network infrastructure and its role in shaping the future needs of society. Zegura and Feamster were joined by fellow panelists Paul Connolly (background, left) from Cisco’s CTO office and William Lehr, economist in the Computer Science & Artificial Intelligence Lab at MIT.

Research News

Financial Dashboard for August 2010

| 2011 YTD New Awards | $3,331,925 |

| Proposed Contracts for August 2010 |
|-----------------|--------------|
| Total | $ Amount | IC | CS | CSE | GVU | RIM |
| 15 | $11,743,350 | 4.5% | 25% | 7% | 0.5% | 63% |

Newly Awarded Contracts for August 2010

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<th>Sponsor</th>
<th>Value</th>
<th>PI</th>
<th>Co-PIs</th>
<th>Title</th>
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<tbody>
<tr>
<td>NSF</td>
<td>$230,000</td>
<td>Constantine Dovrolis</td>
<td>None</td>
<td>Collaborative Research: The Economics of Transit and Peering</td>
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<th>Event Spotlight</th>
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<td>ETRI</td>
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<td>Reservoir Labs</td>
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<td>US Dept of Commerce</td>
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<td>NSF</td>
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<td>US Dept of Defense</td>
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<td>Kitware Inc</td>
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<td>Morehouse School of Medicine</td>
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<td>NSF</td>
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<td>NVIDIA (under DARPA UHPC)</td>
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<td>US Dept of Energy</td>
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<td>DARPA UHPC</td>
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Grants/Gifts Received for August 2010

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<th>Sponsor</th>
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<tr>
<td>Cisco</td>
<td>$99,192</td>
<td>Constantine</td>
<td>None</td>
<td>Robust Video Streaming</td>
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**People@CoC**

**ARC Announces Post-Doc Additions for New Year**

The Algorithms & Randomness Center (ARC) and ThinkTank has added three new postdoctoral researchers for 2010-11. They include:

- **Jinwoo Shin** (Ph.D. MIT, advisor Devavrat Shah), with interests in dynamics of networks and stochastic processes. Shin intends to work with many ARC faculty and will be hosted by Ton Dieker and *Prasad Tetali* (Math).

- **Elena Grigorescu** (Ph.D. MIT, advisor Madhu Sudan), whose research topics so far include property testing and algebraic coding theory, will be hosted by *Chris Peikert* (CS) and *Santosh Vempala* (CS). Grigorescu is a Computing Innovations ARC fellow.

- **Lev Reyzin** (Ph.D. Yale, advisor Dana Angluin), who's working on fundamental aspects of learning theory as well as new models, will be hosted by *Nina Balcan* (CS) and Vempala. Reyzin is a Simons ARC postdoc.

**OpenStudy Launches Pilot Program with MIT OpenCourseware**

OpenStudy, a joint Georgia Tech-Emory spinoff company launched in the College by *Ashwin Ram* (IC), has signed an agreement with MIT OpenCourseware to provide student collaboration services for the world's largest provider of free online educational content.

OpenStudy groups support real-time interaction between students and independent learners from around the world. Members can answer one another's questions, work collaboratively on problem sets and connect with learners who share interests. In the pilot partnership's first month, the OpenStudy group for an intro computer science course has attracted more than 1,600 members; two other groups have attracted more than 1,800 members combined.

**Guzdial in Demand as Speaker on Learning & CS Education**

Mark Guzdial (IC) was an invited speaker at the International Conference of the Learning Sciences (ICLS 2009), held June 29 to July 2 in Chicago, on a special panel on learning in the computing disciplines. Guzdial also spoke at an ACM Education Board summit at Qatar University in Doha in May on research in computer science education. He's delivered three keynotes this year, at the first Educational Advances in AI (EAAI 2010) conference (July 13-14, Atlanta); at the 11th Annual Conference of Higher Education Academy Centre for Information and Computer Science at Durham University (Aug. 24-26, Durham, United Kingdom); and at the Consortium for Computing Sciences in College: Midwest Region (Sept. 24-25, Franklin, Ind.). Guzdial also will give the keynote address at the November Chinese Computer Science Education conference in Jinan, China.

**Wolf Chairs Panel on Bringing CS Education into Parallel at Intel Forum**

In collaboration with the Educational Alliance for a Parallel Future (EAPS), Matthew Wolf (CS) chaired a panel discussion and lunch roundtable at the *Intel Developer Forum* on incorporating parallel computing into the undergraduate curriculum, Sept. 13 in San Francisco. The panel kicked off the Developer Forum's track on academic engagement. Wolf also co-authored the ACM Tech Pack on Parallelism that the EAPS and ACM are jointly publishing sometime before *Supercomputing 2010* in November. He said EAPS will be doing a number of events at SC10 (and at SIGCSE in March 2011), including co-sponsoring a live streaming video feed to be run by Intel Software Network TV, and fielding a booth presence in the SC Communities area.

**Ram Talks Game AI and Case-Based Reasoning at Southern Cal**

Ashwin Ram (IC) was an invited speaker the University of Southern California's Viterbi School of Engineering, Sept. 16. In his talk, Ram addressed the ubiquity of user-generated content on...
the Internet and how users are increasingly called upon to help design their own experiences (such as gamers designing their own avatars for immersive virtual worlds). AI, Ram said, is the one aspect of computer games that typically is not at least partially created by users, and he considers it the next “big frontier” in gaming. He discussed a few techniques, including those related to character-level and game-level AI, that can enhance the player experience.

Edwards Keynotes ACM Workshop on Home Networks
Keith Edwards (IC) delivered the keynote address at the ACM SIGCOMM Workshop on Home Networks (HomeNets), held alongside the SIGCOMM conference in New Delhi, India, Sept. 4. Edwards’ talk was titled “Human-Network Interaction: Building Bridges Between HCI and Networking Research.” College faculty fielded three papers at this workshop:
- “A Study on Network Management Tools of Householders,” by J. Yang, Keith Edwards (IC)
- “Outsourcing Home Network Security” by Nick Feamster (CS)

Vazirani Makes His C&O Stand at Waterloo U.
Vijay Vazirani (CS) made a visit to the University of Waterloo in September to teach a short course and deliver the school’s Tutte Seminar on Combinatorics and Optimization. The latter, named for the celebrated mathematician W.T. Tutte, who founded Waterloo’s Department of Combinatorics and Optimization, was titled, “The Invisible Hand of the Market: Algorithmic Ratification and the Digital Economy.” The Tutte Seminar was held Sept. 24. Vazirani’s short course, “Primal-Dual Algorithms for Rational Convex Programs,” was taught Sept. 22-23.

Lee Wins Google Research Award to Root Out Malicious Domains
Wenke Lee (CS) received a $75,000 Google Research Award for his proposal “Dynamic Reputation for DNS.” He and his students and colleagues Manos Antonakakis and David Dagon will develop new algorithms to proactively identify domains involved in malicious and fraudulent activities. Google Research Awards are meant to facilitate interaction between Google and academia and also nurture stronger relations and partnerships with universities. The intent of the awards program is to support academic research aimed at improving information access, defined broadly.

Personnel Announcements
Constantinos Mannouris has joined CoC as a Post-Doc in IC effective 8/23/10. Email address is cmannour@cc and is located in TSRB 218X. Welcome Constantinos!
Hua Ai has joined CoC as a Research Scientist II in IC effective 8/23/10. Email address is hua.ai@cc and is located in TSRB 218X. Welcome Hua!
Elena Grigorescu has joined CoC as a Post-Doc in CS effective 9/1/10. Email address is elena@cc, phone number is 5-1307 and is located in KACB 2113. Welcome Elena!
Jinwoo Shin has joined CoC as a Post-Doc in CS effective 9/1/10. Email address is jshin72@cc, phone number is 5-1307 and is located in KACB 2113. Welcome Jinwoo!
Lev Reyzin has joined CoC as a Post-Doc in CS effective 9/7/10. Email address is levreyzin@cc, phone number is 5-4610 and is located in KACB 2111. Welcome Lev!
Grant Schindler has joined CoC as a Research Scientist I in IC effective 9/21/10. Email address is schindler@gatech.edu and is located in CCB 318. Welcome Grant!
Sean Brennan has joined CoC as a Research Technologist I in IC (GVU/TSO) effective 9/21/10. Email address is sean@cc, phone number is 5-7610 and is located in TSRB 215. Welcome Sean!
Brian Poole’s last day at CoC was 9/1/10.
Rachel Munnely’s last day at CoC was 9/2/10.
Daniel Ross’ last day at CoC was 9/7/10.
Della Phinisee’s last day in CS was 9/23/10.
Eddie Vail’s last day in CS was 9/23/10.
Meredith Goodman’s last day at CoC is 10/1/10.
Mike Luttrell’s last day at CoC is 10/1/10.

General News
Day Passes, Volunteer Opportunities for FutureMedia Fest 2010
With just a few days left before the start of FutureMedia Fest 2010, individuals interested in attending now have the option of registering for a one-day event pass or opting for the multi-day package. The four-day event, scheduled for Oct. 4-7 at the Georgia Tech Hotel and Conference Center, centers on the role of media and technology and will bring together those who work, invest and perform research in those fields to discuss the transformational impact.
of next-generation digital, social and mobile media across industries, societies and daily life. The goal is to foster the connections that ultimately create an open innovation environment, driving the growth of a new media ecosystem. Organizers are also looking for volunteers from Georgia Tech, offering free day passes in exchange for a minimum two-hour commitment. There will be a mandatory volunteer meeting prior to the fest that everyone will be asked to attend to familiarize themselves with the event and venues.

**OEC Gears Up for Homecoming 2010**

This year, for the second time, the CoC community is being brought together to participate in Georgia Tech’s Homecoming week, Oct. 3-10, as the only academic unit on campus to compete. Last year the College participated for the first time, placing third in the independent division. This year CoC will go for the gold by participating in even more events. The Office of Outreach, Enrollment and Community (OEC), along with our student Homecoming chairs, promise that Homecoming week will be a fun and challenging experience, uniting the students, faculty, staff and alumni.

Join OEC and CoC undergraduates to participate in events, pomping and the opportunity to build community within the College. There will be food and music throughout the week. On Thursday, Oct. 7, the Computing Alumni Organization will stop by to provide food, assist with events and mingle with the students and faculty. For more information on Homecoming week activities, contact Jennifer Whitlow.

**Undergrad Enrollments Up; Networks is Most Popular Thread**

As reported in the September Compiler, overall CS enrollment in the College grew by 11.5 percent in 2010 over 2009, and total computing majors (CS and CM) are up 11.8 percent from a year ago. The surge is occurring at the upperclassman level due to transfers and changes of major; the total number of CS seniors in fall 2010 is 292 (up 15.3 percent from 2009) and the total number of CS juniors is 260 (up 21.5 percent). CM majors are up 12.7 percent to 302 overall majors.

Four years after the introduction of the Threads curriculum, the Information Internetworks thread has emerged as the top pick, with almost half of CS majors selecting it as one of their two choices. Since 2006, the most popular thread combinations have been Internetworks & Platforms and Media & People, each selected by 15 percent of Threads graduates. These data come from an analysis of the 203 BSCS graduates under Threads through Summer 2010.

The selection rates for each of the eight threads are:

- Information Internetworks: 49.3 percent
- People: 36.0 percent
- Media: 33.5 percent
- Platforms: 25.1 percent
- Intelligence: 22.7 percent
- Theory: 13.8 percent
- Devices: 10.3 percent
- Modeling & Simulation: 9.4 percent

(Numbers total 200 percent since each student must pick two threads.)

**Dates & Courses Announced for Barcelona 2011**

The dates and courses for the Summer 2011 Barcelona Program have been confirmed. The 2011 program dates will be May 11 through July 26. Student participants will be able to choose 12 credit hours from an interdisciplinary selection of courses that take advantage of Barcelona’s unique learning setting. The courses will include:

- ARCH 4128 – Barcelona: Architecture & Design (Humanities, International Plan)
- COA 4803 – Cities & Citizens: What Makes Great Cities Great (Social Science)
- CS 3750 – Human-Computer Interface Design and Evaluation
- CS 4001 – Computing, Society and Professionalism (Ethics)
- CS 4460 – Information Visualization
- CS 4475 – Computational Photography
- SPAN – Spanish-language courses at different proficiency levels (Humanities)

The first Barcelona 2011 information session will be held Thursday, Oct. 7, at 11 a.m. in CCB room 53. Interested students are encouraged to apply early; the Barcelona application deadline is Jan. 15, 2011. For more information, visit the program's website or contact Program Coordinator Dawn Rutherford at barcelona@cc.gatech.edu.

**Women@CC to Get Paint Brushes Out for TeamBuzz**

Women@CC kicked off the year with a visit to the Fox Theatre to see The Sound of Music. “It was a great bonding experience for the incoming freshmen and the Women @ CC members,
and to top it all, the musical was amazing," said sophomore Madhuri Tondepu. Members will get their Homecoming activities started by participating in TeamBuzz, a service organization dedicated to making Atlanta a better place. Women@CC will be painting at Wadsworth Magnet School for High Achievers. Wadsworth is a DeKalb County elementary school offering 4th to 6th grade students an enriched curriculum. Women@CC volunteers will help paint a mural and the school's gymnasium. Students interested in joining TeamBuzz should contact Candis Pham at cpham3@gatech.edu.

**TSO to Host Oct. 18 Brownbag on Windows 7 & Office 2010**

On Monday, Oct. 18, from noon to 12:45 p.m., TSO will host a brownbag session on the Windows 7 operating system and Office 2010. All CoC employees and students are invited to attend the brownbag, which will cover the major changes and new features of Windows 7 over Windows XP, the major changes in Office 2010 over Office 2007, and details about profile migrations in a Windows XP to Windows 7 upgrade. The event will be held in Klaus 1116; for more information, contact the TSO Help Desk at 404-894-7065 or helpdesk@cc.gatech.edu.

**Corrections**

The Dashboard in the email version of the September 2010 Compiler contained the following errors:

- A $900,000 grant to Alex Orso (CS), "MEDITA: Multi-layer Enterprise-wide Dynamic Information-flow Tracking & Assurance," failed to list his co-PIs: Nick Feamster and Milos Prvulovic (both CS).
- A $375,000 Intel grant to David Bader (CSE) and a $30,000 SAIC grant to Mark Riedl (IC) were listed under incorrect names. The correct names are "STING: Spatio-Temporal Interaction Networks and Graphs: An Open-Source Dynamic Graph Package for Intel Platforms" and "Scenario Adaptation," respectively.

The Compiler editors regret these errors.

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**CoC In the News**

To help Compiler readers stay informed of the latest media coverage of the College of Computing, we will share the month's headlines from the CoC website. Below are links to all headlines from Sept. 1 to Sept. 30, 2010 (most recent headlines at the top).

- [THE BIG I: Augmented Reality](http://www.cc.gatech.edu/com/)
- [OpenStudy Harnesses the Power of Social Media](http://www.cc.gatech.edu/com/
- [Only a Quarter of Parents to Deaf Kids Know Sign Language](http://www.cc.gatech.edu/com/
- [Cloud Computing Test Bed Open Cirrus Announces Expansion](http://www.cc.gatech.edu/com/
- [More Join HP, Intel and Yahoo on Open Cirrus Cloud Test Bed](http://www.cc.gatech.edu/com/
- [Signing Made Easy](http://www.cc.gatech.edu/com/
- [Lying Robots](http://www.cc.gatech.edu/com/
- [Where's That Plane Going? This App Knows](http://www.cc.gatech.edu/com/
- [Deceptive Robots Hint at Machine Self-Awareness](http://www.cc.gatech.edu/com/
- [Bringing It Off The Screen: Inside Georgia Tech's Augmented Environments Lab](http://www.cc.gatech.edu/com/
- [Changing the Way You Look at Menus](http://www.cc.gatech.edu/com/
- [Feamster Designs a Better Spam Trap](http://www.cc.gatech.edu/com/
- [The Gloved One: Tech Researchers Hone Fingertip Musicianship](http://www.cc.gatech.edu/com/
- [Lebanon Says Google Search Manipulation Not Surprising](http://www.cc.gatech.edu/com/
- [Google, Georgia Tech Develop Video Screen 'Retargeting'](http://www.cc.gatech.edu/com/
- [Researchers Turn Home Electrical Wiring Into Antenna for Sensor](http://www.cc.gatech.edu/com/
- [To Text or Not to Text During Emergencies](http://www.cc.gatech.edu/com/
- [Fooled You! Robots Learn How to Deceive](http://www.cc.gatech.edu/com/
- [Glove Helps You Play Piano Like a Pro](http://www.cc.gatech.edu/com/
- [Robots Taught How to Deceive](http://www.cc.gatech.edu/com/
- [6 Game Design Schools to Watch](http://www.cc.gatech.edu/com/
- [Researchers Report Teaching Robots to Lie](http://www.cc.gatech.edu/com/
- [How to Train Your Robot (to Lie)](http://www.cc.gatech.edu/com/
- [Qualcomm Demos Augmented Reality Apps](http://www.cc.gatech.edu/com/
- [Military Research Teaches Robots how to Deceive Each Other](http://www.cc.gatech.edu/com/
- [Robots Programmed to Deceive](http://www.cc.gatech.edu/com/
- [Competition Seeks the 'Hungriest Hacker at Georgia Tech'](http://www.cc.gatech.edu/com/
- [Start-Up Aspires to Make the World 'One Big Study Group'](http://www.cc.gatech.edu/com/)
● Researchers Give Robots the Capability for Deceptive Behavior
● Boston on the Labor Market
● New York Times: Dunham-Jones Weighs In On Future of Housing
● Ph.D. Students Win Best Student Paper at Machine Vision Conference
● Bogost on Newsgames
● Inflated Performance?
● Newsgames on PBS' Idea Lab
● OpenStudy's Yellow Jacket Nest
● Ellis Johnson: Deep Roots at Georgia Tech
● New Georgia Tech-Panama Logistics Innovation & Research Center Launched
● Georgia Tech Imagine Lab to Build Interactive Visualizations of New Georgia Veterans Memorial
● Georgia Tech and KAIST Partner to Offer Dual Degrees
● Instrument Reveals Quartet of Graphene Electron States
● College of Architecture at Georgia Institute of Technology Seeks Chair of School of Building Construction
● Georgia Tech Public Service Announcement Hits Right Note
● New Research Applies Computing to Detecting Autism
● Georgia Tech Launches Student-Designed iPhone App
● Researchers Create New Logic Device Based on Piezoelectric Effect
● Kirkman Publishes Ethics of Metropolitan Growth Book
● Georgia Tech's New Humanitarian Design Studio Tackles Water, Energy, Public Health
● McKenna to Head Office of Legal Affairs and Risk Management
● Fert Center for the Arts Offers Discounts on Performances for Staff and Faculty
● September is National Preparedness Month

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