Picture of the Month

A NANO-Step Toward Transparency

Nick Feamster, assistant professor in the School of Computer Science, presents a paper at the ACM SIGCOMM CoNext conference, held Dec. 9, 2009, in Rome. Feamster’s paper (see item below) described NANO, part of the larger M-Lab project, which seeks to create measurement tools for ensuring a more transparent Internet. The paper was co-written with Professor Mostafa Ammar and CS Ph.D. students Mukarram bin Tariq and Murtaza Motiwala.

Research News

This dashboard represents two months of activity (November & December 2009). Each month is listed separately.

YTD New Awards (November 2009)
$22,927,237

Proposed Contracts for November 2009

<table>
<thead>
<tr>
<th>Total</th>
<th>$ Amount</th>
<th>IC</th>
<th>CS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>$10,889,960</td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Newly Awarded Contracts for November 2009

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Value</th>
<th>PI</th>
<th>Co-PIs</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIH</td>
<td>$1,546,190*</td>
<td>David Bader</td>
<td>None</td>
<td>Dynamically Scalable Accessible Analysis for Next Generation Sequence Data</td>
</tr>
</tbody>
</table>
Grants/Gifts Received for November 2009

<table>
<thead>
<tr>
<th>Donor</th>
<th>Amount</th>
<th>PI</th>
<th>Co-PIs</th>
<th>Description of Gift/Donation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel</td>
<td>$305,000</td>
<td>Karsten Schwan</td>
<td>Gavrilovska, Wolf</td>
<td>CERCS-Open CIRRUS</td>
</tr>
<tr>
<td>GTF/CETL</td>
<td>$1,000</td>
<td>Kristin Marsicano</td>
<td>None</td>
<td>Class of 1969 Teaching Fellowship</td>
</tr>
</tbody>
</table>

Donor: Intel
Amount: $305,000
PI: Karsten Schwan
Co-PIs: Gavrilovska, Wolf
Description: CERCS-Open CIRRUS

Donor: GTF/CETL
Amount: $1,000
PI: Kristin Marsicano
Co-PIs: None
Description: Class of 1969 Teaching Fellowship

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</thead>
<tbody>
<tr>
<td>Lester Family</td>
<td>$25,000</td>
<td>Carla Bennett</td>
<td>None</td>
<td>Lester Award Endowment</td>
</tr>
</tbody>
</table>

Donor: Lester Family
Amount: $25,000
PI: Carla Bennett
Co-PIs: None
Description: Lester Award Endowment

*Multi-institutional award. Georgia Tech's share is $179,368; partners include Emory University.

Research funding proposals submitted by CoC faculty in December 2009

$23.7M
YTD external research awards for FY10, as of Dec. 31, 2009

$13.1M
YTD external research awards for FY09 on Dec. 31, 2008

This month various groups at CoC are pursuing partnerships with the following companies:
Aflac
Air-Watch
Cisco
ConocoPhillips
Eaton
Google
Harris
IMC
Intel
Lockheed Martin
Microsoft
Northrop Grumman
SAIC
Union Pacific Railroad
uSenso
Yahoo!

Feamster Presents on NANO Detection Tool at ACM CoNext in Rome

Assistant Professor Nick Feamster (CS) presented a paper, "Detecting Network Neutrality Violations with Causal Inference," at the ACM SIGCOMM CoNext conference, held Dec. 9, 2009, in Rome, Italy. The paper describes the NANO tool, which can detect differential treatment of specific classes of applications, users or destinations by an Internet service provider. NANO is part of the broader Google Broadband Transparency Initiative (otherwise known as Measurement Lab, or M-Lab) that seeks to design and deploy Internet measurement tools to move toward more transparent Internet service. In Rome, Feamster was joined by CS

http://www.cc.gatech.edu/compiler/
Ph.D. students Mukarram bin Tariq and Murtaza Motiwala; the paper they presented was co-written with Professor Mostafa Ammar (CS).

**Bruckman Joins Panel on Social Media at PARC**

Associate Professor Amy Bruckman (IC) participated in a panel discussion at the Workshop on Technology-Mediated Social Participation, hosted at the Palo Alto Research Center (PARC), Dec. 10-11, 2009. The NSF-sponsored panel, titled "The Future of Technology-Mediated Social Participation," brought together speakers from academia, industry and government to tackle issues in electronic social media such as abuse of these technologies by malicious actors, new participatory systems of such media, and transformations these media could drive in fields from public safety to environmental protection.

**Ram Talks at MIT on User-Generated AI**

Associate Professor Ashwin Ram (IC) spoke at a colloquium, "User-Generated AI for Interactive Digital Entertainment," held Jan. 25 at the MIT Media Lab. 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.

**DeMillo to Serve on ARCS Science Council**

Former dean and current Distinguished Professor Rich DeMillo (CS) has accepted an invitation to serve on the Science Advisory Council of the ARCS (Achievement Rewards for College Scientists) Foundation. Founded in 1958 in Los Angeles, ARCS grants financial awards to academically outstanding U.S. students completing their degrees in science, medicine and engineering. The organization has 16 chapters across the country; Atlanta’s chapter opened in 1992. DeMillo has been active with ARCS since he became the College’s dean in 2002; CoC faculty have spoken at local ARCS meetings, and the College took a group of students to the 2007 ARCS national meeting, held in Atlanta. As a member of the Science Advisory Council, DeMillo will help ARCS target national areas for scientific support, as well as determine strategic messaging and build the organization’s contact network.

**Vempala Speaks at Joint AMS-MAA Meeting**

Professor Santosh Vempala (CS) gave an invited talk at the session on "The Mathematics of Information and Knowledge" at the 2010 joint meeting of the American Mathematical Society and the Mathematical Association of America, held Jan. 13-16 in San Francisco. His talk was titled, "Affine-Invariant Principal Components."

**Doctoral Student Clause Takes 2nd in GT Student Paper Competition**

Ph.D. student James Clause was named runner-up in the SAIC Georgia Tech Student Paper Competition for his work, "Automated Sanitization of Field Data," co-written with Associate Professor Alessandro Orso (CS). The paper describes a new method for automatically sanitizing failure-inducing inputs to deployed applications. The pair implemented their approach in a prototype tool, "Camouflage," and applied it to a large set of failure-inducing inputs for several real applications. The results of the evaluation are promising, Clause said, showing that Camouflage is both practical and effective at generating sanitized inputs.

**IC Faculty Co-Organizing Workshop on ‘AI and Fun’**

Associate professors Charles Isbell and Ashwin Ram, along with Assistant Professor Mark Riedl (all IC), are co-organizing a workshop for the Association for the Advancement of Artificial Intelligence (AAAI) on "AI and Fun," scheduled for July. The workshop aims to bring together a wide spectrum of researchers working on and thinking about the role of AI in creating engaging, entertaining, "fun" experiences. Additionally, the workshop will provide for discussions between participants on significant challenges of the emerging field. The format will consist of presentations of position papers and technical research contributions, discussion sessions, and invited talks. A technology demonstration session will provide a venue to show off existing and emerging AI for fun systems. The organizers invite submissions of position papers (4-8 pages), technical research contributions (4-8 pages) and technology demonstrations (2 pages). Papers and more information are available online; submission deadline is March 29.

**CoC Well Represented at CompArch, Parallel Conferences**

The College had a strong showing at the annual co-located HPCA/PPoPP conferences, among the premier conferences for computer architecture and parallel software, held Jan. 9-14 in
Bangalore, India. HPCA is the IEEE International Symposium on High-Performance Computer Architecture, and PPoPP is the ACM Symposium on Principles and Practice of Parallel Programming. Computing faculty who attended were Hyesoon Kim (CS), Gabriel Loh (CS), Santosh Pande (CS), Milos Prvulovic (CS) and Richard Vuduc (CSE). Loh, Prvulovic and Vuduc also served on the program committees for the conferences.

There were at least six papers/posters presented by CoC students and faculty at the two conferences and its affiliated workshops:

- (HPCA) “HARE: Hardware Assisted Reverse Execution,” by Ioannis Doudalis and Prvulovic
- (HPCA) “An Optimized 3D-Stacked Memory Architecture by Exploiting Excessive, High-Density TSV Bandwidth,” by Dong Hyuk Woo, Nak Hee Seong, Dean L. Lewis and Hsien-Hsin Lee (ECE)
- (HPCA workshop on GPGPUs) “Effect of Instruction Fetch and Memory Scheduling on GPU Performance,” by Nagesh B. Lakshminarayana and Kim
- (PPoPP) “Model-driven Autotuning of Sparse Matrix-Vector Multiply on GPUs,” by Jee Choi, Amik Singh (IIT Roorkee & former GT CRUISE summer intern) and Vuduc
- (PPoPP) “Input-Driven Dynamic Execution Prediction of Streaming Applications,” by Farhana Aleen, Monirul Sharif and Pande
- (PPoPP poster) “Applying the Concurrent Collections Programming Model to Asynchronous Parallel Dense Linear Algebra,” by Aparna Chandramowlishwaran, Kathleen Knobe (Intel) and Vuduc

**Personnel Announcements**

- **David Dagon** has joined CoC as a Post-Doc in GTISC effective 11/9/09. His email address is dagon@cc. Welcome David!
- **Cristian Lumezanu** has joined CoC as a Post-Doc in CS effective 11/30/09. His email address is clumezan@cc and is located in KACB 3337. Welcome Cristian!
- **Lee Thomas Martie** has joined CoC as a Temporary Research Scientist I in IC effective 12/1/09. His email address is leemartie@gatech.edu and is located in the TSRB AI Lab. Welcome Lee!
- **Paul Royal** has joined CoC as a Temporary Research Scientist I in CS effective 12/7/09. His email address is paul.royal@cc. Welcome Paul!
- **Agata Rozga** has joined CoC as a Research Scientist II in IC effective 1/4/10. Her email address is arozga3@cc, phone number is 4-2304 and is located in HSI 206D. Welcome Agata!
- **Rachel Munnerlyn** has joined CoC as a Tech Temp working with Barbara Ericson effective 1/21/10. Her email address is rmunnerl@cc and is located in CCB 329. Welcome Rachel!
- **Steven Akins** has been hired permanently as a Web Developer in TSO effective 1/25/10. His email address is sakins@cc, phone number is 5-2680 and is located in CCB 234. Congratulations Steven!
- **Meka Wimberly** has joined CoC as a Tech Temp in International Programs effective 1/25/10. Her email address is mwimberl@cc, phone number is 4-9646 and is located in CCB 138. Welcome Meka!
- **Kristen Doorn**’s last day at CoC was 12/17/09. Best wishes Kristen!

**General News**

**Louise Russo Named CoC’s First Shining Star**

Louise Russo, web marketing manager in the Office of Communications, was named the first recipient of the College’s “Shining Star” award at the quarterly staff luncheon, Jan. 11. A CoC employee since June 2008, Russo has been leading the project to redesign the College website and design new sites for the academic units. In her nomination of Russo, Communications Director Stefany Wilson wrote: “Louise has been described as one of those rare and wonderful employees who can think independently, has the drive to take responsibility and the confidence to act. Louise’s consistency of being a tremendous help, timely responses, and pleasant disposition 100% of the time are just some of the reasons Louise is a Shining Star.” Shining Star is the College's recognition program for staff employees. Nominations are open for the next quarter’s winner; from now until March 31, faculty and students can nominate deserving staff for the award. To nominate, just visit the College intranet.

**NCWIT Ranks CoC High Among CS Top 15 for Female Faculty**

According to a study by the National Center for Women and Information Technology (NCWIT), the College of Computing has the highest percentage of female tenure-track faculty of any CS
program in the U.S. News & World Report's top 15. Twenty percent of the College's tenure-track faculty are female, and when counting all faculty positions, the College (at 18.4 percent females) ranks behind only Princeton (22.9 percent).

On Tuesday, Feb. 16, NCWIT CEO and co-founder Lucy Sanders will visit campus to deliver the Georgia Tech Center for the Study of Women, Science and Technology's 2010 Distinguished Lecture. Sanders serves as executive-in-residence for the ATLAS Institute at the University of Colorado at Boulder. The lecture will be held at 4 p.m. in the Success Center's Clary Theater.

**RI M Seminar Series Under Way for Spring**

The Robotics & Intelligent Machines (RIM) Center kicked off its seminar series for spring semester with Larry Matthies, senior research scientist at NASA's Jet Propulsion Laboratory, who spoke on Jan. 28 about a “Vision for Space Robotics.” Next up is Bo Wahlberg, professor of automatic control at KTH Royal Institute of Technology in Stockholm, Sweden, who will speak on “Robot Diagnostics.” Wahlberg's seminar is scheduled for Wednesday, Feb. 10, from noon to 1 p.m. in the Marcus Nanotechnology Building. For the RIM Seminar Series' full spring schedule, visit the RIM website.

**CoC Projects Benefit from GT Technology Fee**

Five projects proposed by TSO to support academic and research operations in the College received approval for funding through the Georgia Tech technology fee. In an allocation phase that distributed more than $2.6 million to projects across campus, the five proposals included:

- **Rovio Robot Platforms**, for use in undergraduate and graduate robotics courses. The Rovio platforms not only will be used in courses taught by several robotics faculty, but they will also be used to stage undergraduate research opportunities through UROC.
- **Videoconferencing Support for International Programs**, to support cross-locational participation in courses offered at Georgia Tech locations around the world, including the Atlanta campus, Korea and Georgia Tech-Lorraine.
- **Prototyping Computing Device** that will support the creation of printed circuit boards, which will be used in several courses involved in the undergraduate Devices Threads.
- **New Workstations for CS 1371 Lab**, which is used extensively in computing instruction for more than 2,200 non-computing undergraduates.
- **Backend Server Support** for instructional classroom labs and HPC resources maintained by TSO that provide multi-platform, distributed services such as user account home directories, remote login access and file sharing.

**CoC Offering First CS GT1000 Course**

This semester the College is offering its first version of GT1000 course specifically in CS and also the first such course offered in the spring. Co-taught by Assistant Dean Cedric Stallworth and Program Coordinator Beth Collums, both in the Office of Outreach, Enrollment and Community, the course is being presented in conjunction with the Intentional Advising Program, also kicking off this semester. The program involves members of the class (15 freshmen) meeting in one-on-one sessions; honing specific skills, such as identifying personal and academic strengths and styles; and charting an action plan to get them started in their CS degrees. It's also meant to help them in their Threads selections.

"The purpose of both GT1000 and the Intentional Advising Program," Stallworth said, "is to help our students find themselves amongst the myriad of options and opportunities that are available to them."

**CoC Awards Deadline Extended to Feb. 15**

The deadline for nominations for the College's 19th annual Awards Celebration has been extended to Monday, Feb. 15. To read the full list of awards for faculty, students and staff, visit the 2010 awards page. Each award listing details eligibility requirements (for both nominator and nominee), as well as the criteria for winning. The awards committee asks that all nominations be made via the online forms available on the awards page. For more information, email awards@cc.gatech.edu.

**TSO Creates Password Reset Form for CoC Users**

TSO has created an online form for users to reset their CoC account passwords, both Unix and Windows, even if they've forgotten them or their password has expired. Anyone with a CoC account can use the form; they'll need to know their GT account and password, and they'll also need to access the form on campus or through VPN. Also, this form is only one method to reset CoC account passwords; other methods are explained here. For more information, contact the TSO Help Desk (CCB 148) at 404.894.7065 or helpdesk@cc.gatech.edu.

**Endowment Establishes Lester Award for Internet Research**

http://www.cc.gatech.edu/compiler/
A $25,000 endowment has been established by James D. Lester III, MS IS 1970, and his wife, Faye R. Lester, in honor of James D. Lester Jnr., who graduated from GT in 1928. Proceeds from the endowment will fund the Lester Award, which will be made annually at the College's Awards Ceremony to the faculty member whose research in “internet phenomena” shall be deemed (by the awards committee) most noteworthy.