Launching an Experiment in Higher Ed

Former Columbia University provost Jonathan Cole (above) highlighted the Sept. 27 public launch of the Center for 21st Century Universities (C21U). Directed by former College of Computing Dean Rich DeMillo, the center is intended to serve as a real-life laboratory for fundamental change in higher education. Joining Cole was a panel of higher-ed thought leaders for a discussion, moderated by Chronicle of Higher Education editor Jeffrey Selingo, about how "disruptive forces" like technology are shaping education—and what American universities can do to respond and adapt. Announced at the event was C21U's new "TechBurst" competition, in which Georgia Tech students can compete for $5,000 in cash and prizes by creating their own Khan Academy-style videos (see item below under General News).

Research News

Financial Dashboard for August 2011

<table>
<thead>
<tr>
<th>2012 YTD New Awards</th>
<th>Proposed Contracts for August 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>$8,274,099</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total $ Amount</td>
</tr>
<tr>
<td></td>
<td>4 $520,483</td>
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</tbody>
</table>

Newly Awarded Contracts for August 2011

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Value</th>
<th>PI</th>
<th>Co-PIs</th>
<th>Title</th>
</tr>
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<tbody>
<tr>
<td>NSF</td>
<td>$199,926</td>
<td>Calton Pu</td>
<td>Karsten</td>
<td>An Experimental</td>
</tr>
</tbody>
</table>

Numbers & Stats

$60K
Grants/Gifts Received for August 2011

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Value</th>
<th>PI</th>
<th>Co-PIs</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>NSF</td>
<td>$175,000</td>
<td>Ada Gavrilovska</td>
<td>None</td>
<td>Resource Containers: Addressing Resource Heterogeneity For...</td>
</tr>
<tr>
<td>NSF</td>
<td>$500,000</td>
<td>Ling Liu</td>
<td>None</td>
<td>Countering Location Spoofing Attacks: Multi-Model Architecture</td>
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<td>NSF</td>
<td>$496,025</td>
<td>Hongyuan Zha</td>
<td>None</td>
<td>Exploring Social and Behavioral Contexts for Information Retrieval</td>
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<tr>
<td>NSF</td>
<td>$224,996</td>
<td>Calton Pu</td>
<td>None</td>
<td>Multi-Bottlenecks: What they are and How to Find them</td>
</tr>
<tr>
<td>NSF</td>
<td>$499,958*</td>
<td>Alex Orso</td>
<td>None</td>
<td>Collaborative Research: Viewpoints: Discovering Client-Ands</td>
</tr>
<tr>
<td>Army</td>
<td>$210,082</td>
<td>Patrick Traynor</td>
<td>None</td>
<td>Mitigating Attacks on Mobile Devices and Critical Cellular Infrastructure</td>
</tr>
<tr>
<td>Binational Science Foundation</td>
<td>$120,000</td>
<td>Guy Lebanon</td>
<td>None</td>
<td>Machine Learning for Tied and Incomplete Preference Data</td>
</tr>
<tr>
<td>NSF</td>
<td>$165,546</td>
<td>Ashok Goel</td>
<td>None</td>
<td>Raven's Intelligence Test:</td>
</tr>
<tr>
<td>NSF</td>
<td>$25,000</td>
<td>Henrik Christensen</td>
<td>None</td>
<td>Characterization of Sensors for Identification and Measurement of SKUs</td>
</tr>
<tr>
<td>NSF</td>
<td>$70,001</td>
<td>Henrik Christensen</td>
<td>None</td>
<td>Robotics Virtual Organization (Robotics VO)</td>
</tr>
<tr>
<td>NSF</td>
<td>$490,496</td>
<td>Mary Jean Harrold</td>
<td>None</td>
<td>Locating and Explaining Faults in Concurrent Software</td>
</tr>
<tr>
<td>DARPA</td>
<td>$297,741</td>
<td>Mark Riedl</td>
<td>Rich Vuduc</td>
<td>Automated Narrative Reasoning for Training Adaptive Leaders and Warfighters</td>
</tr>
<tr>
<td>NSF</td>
<td>$399,881</td>
<td>Ellen Zegura</td>
<td>Mostafa Ammar</td>
<td>Recovery and Transformation of Human Mobility Traces for Mobile Wireless Experiment</td>
</tr>
</tbody>
</table>

**Medain reported starting salary offer for all Spring 2011 GT grads $66K**

**Median reported starting salary offer for GT Spring 2011 BS CS grads $111K**

**Highest reported starting salary offer for GT Spring 2011 BS CS grads 833**

Student attendees at Sept. 13-14 College of Computing Career Fair

Industry Outreach

This month various groups at CoC are pursuing partnerships with the following companies:

- ADP
- Airwatch
- Alcatel-Lucent
- Amazon
- Apple
- Applied Predictive Technologies
- Argo Systems
- Avanade
- Bazaarvoice
- Blackbaud
- BLiNQ Media
- Bomgar Corporation
- Booz Allen Hamilton
- Bosch
- BrightEdge
- Capital One
- CareerBuilder
- Cisco
- Citadel
- ConocoPhillips
- Consilience Software
- eBay, Inc.
Randall Takes Over for Harrold as College ADVANCE Professor

Dana Randall (CS) has been named the new ADVANCE Professor for the College of Computing, taking over for Mary Jean Harrold (CS), who held the position for 10 years since the formation of the ADVANCE team at Georgia Tech. Originally funded through a National Science Foundation program, GT ADVANCE was formally adopted by the Institute in 2007. It's intended "to take an integrated approach to institutional factors supporting the full participation and advancement of women faculty."

Ram Co-Edits New Book on Case-Based Reasoning

Ashwin Ram (IC) is co-editor, along with Nirmalie Wiratunga, of a new volume, Case Based Reasoning Research and Development. The book constitutes the refereed proceedings of the 19th International Conference on Case-Based Reasoning, held in London in September. The presentations and posters covered a wide range of CBR topics of interest both to practitioners and researchers, including CBR methodology covering case representation, similarity, retrieval, and adaptation; provenance and maintenance; recommender systems; multi-agent collaborative systems; data mining; time series analysis; Web applications; knowledge management; legal reasoning; healthcare systems and planning systems.

Number of ARC Papers at 2011 FOCS/STOC Anything But Random

Once upon a time, a computer scientist named Zvi Galil was regularly the most common paper author at the Foundations of Computer Science (FOCS) and Symposium on the Theory of Computing (STOC) conferences. Now the Algorithms & Randomness Center (ARC) is picking up the mantle for the center's dean. ARC authors landed a combined eight papers at the 2011 versions of the two conferences. The papers included:

- "Efficient Distributed Medium Access," by Devavrat Shah, Jinwoo Shin and Prasad Tetali (CS)
- "An FPTAS for Knapsack and Related Counting Problems," by Parikshit Gopalan, Adam Klivans, Raghu Meka, Daniel Stefankovic, Santosh Vempala (CS) and Eric Vigoda (CS)
- "Improved Mixing Condition on the Grid for Counting and Sampling Independent Sets," by Ricardo Restrepo, Shin, Tetali, Vigoda and Linji Yang
- "Enumerative Lattice Algorithms in any Norm via M-ellipsoid Coverings," by Daniel Dadush, Chris Peikert (CS) and Vempala
- "Rounding Semidefinite Programming Hierarchies via Global Correlation," by Boaz Barak, Prasad Raghavendra (CS) and David Steurer

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CSE Faculty Lead International Parallel Processing Conference

Two CSE faculty gave invited keynote talks at the 9th International Conference on Parallel Processing and Applied Mathematics (PPAM), held at Nicolaus Copernicus University, in Torun, Poland, Sept. 11-14. David Bader talked about opportunities and challenges in massive data-intensive computing, and Rich Vuduc spoke on balance principles for algorithm-architecture co-design. CSE research scientist Jason Riedy also presented a peer-reviewed contributed paper on parallel community detection for massive graphs, co-authored with CSE postdoc Henning Meyerhenke, Ph.D. student David Ediger and Bader. Bader also chaired the co-located workshop on parallel computational biology.

Feamster Participates in Prestigious NAE Frontiers Symposium

Nick Feamster (CS) was invited to participate in the National Academy of Engineering (NAE)
Frontiers of Engineering Symposium, held Sept. 19-21 at the Google headquarters in Mountain View, Calif. For more than 10 years, the NAE has identified the best engineers (ages 30-45) from large and small companies, research universities, and government laboratories and brought them together through the Frontiers of Engineering symposia to discuss their leading-edge research and innovation across widely disparate disciplines. Although the emphasis is on new technology, a great deal of experience in developing and deploying real technology is exchanged.

CISTP's Lukasik Pens Cover Article for Communications of ACM

Steve Lukasik, distinguished research fellow at Georgia Tech's Center for International Strategy, Technology and Policy, has landed his second featured cover article in one month, this time scoring the cover of September Communications of the ACM with the article, "Protecting Users of the Cyber Commons." This follow's Lukasik's cover story in the July-September IEEE Annals of the History of Computing, titled "Why the Arpanet Was Built."

Personnel Announcements

David Majerich has joined CoC as a Research Scientist II in IC effective 8/22/11. His email address is dmajeric@cc and is located in TSRB 218X. Welcome David!

Christine Alvarado has joined CoC as a Visiting Sr. Research Scientist in IC effective 8/22/11. Her email address is calvarad@cc and is located in TSRB. Welcome Christine!

Michaelanne Dye has joined CoC as a Communications Officer I in Communications effective 9/1/11. Her email address is mdye@cc, phone number is 5-4015 and is located in CCB 140. Welcome Michaelanne!

Stephen Woodrow has joined CoC as a Research Scientist I in CS effective 9/1/11. His email address is swoodrow@cc and is located in KACB 3333. Welcome Stephen!

Le Song has joined CoC as an Assistant Professor in CSE effective 9/5/11. His email address is lsong@cc, phone number is 5-0608 and is located in KACB 1340. Welcome Le!

Margaret Bankoff has joined CoC as a Development Assistant in Development effective 9/19/11. Her email address is mbankoff@cc and is located in CCB 162 for the time being. Welcome Margaret!

Felicia Brewster’s last day at CoC was 9/8/11.

G. Florin Constanti’s last day at CoC was 9/23/11.

General News

CoC to Host Nobel Laureate Aaron Ciechanover on Oct. 4

Nobel Prize-winning biologist Aaron Ciechanover will visit Georgia Tech for a lecture, "Drug Development in the 21st Century: Are We Going to Cure all Diseases?" to be held Tuesday, Oct. 4, at 6:30 p.m. in the College of Management's LeCraw Auditorium. Ciechanover is Distinguished Research Professor in the Ruth and Bruce Rappaport Faculty of Medicine at Technion, the Israel Institute of Technology. In 2004, he shared the Nobel Prize for Chemistry with professors Avram Hershko and Irwin Rose for the discovery of ubiquitin-mediated protein degradation, a mechanism by which the cells of most living organisms cull unwanted proteins. Ciechanover also shared the Albert Lasker Award for Basic Medical Research, the second-most prestigious prize in life sciences and medicine, and the Israel Prize, the highest recognition bestowed by the State of Israel. He is a member of the Israeli National Academy of Sciences and Humanities, the Pontifical Academy of Sciences of the Vatican and the American Philosophical Society.

2011 Georgia Tech Cyber Security Summit Set for Oct. 11

The 2011 Georgia Tech Cyber Security Summit is scheduled for Tuesday, Oct. 11, from 9 a.m. to 1 p.m. in the College of Management's LeCraw Auditorium. This year's summit, themed "Evolving Nature of Cyber Security Threats," will feature keynote speaker Admiral William J. Fallon, U.S. Navy (retired), as well as a panel moderated by Tony Spinelli, senior vice president and chief security officer for Equifax. The summit will also mark the release of the 2012 Cyber Threats Report (read 2011 report here). The event is free and open to the public; click here to register.

C21U's TechBurst Contest Seeks Student Teacher/Filmmakers

The Center for 21st Century Universities (C21U) has announced its first TechBurst Competition, open to all Georgia Tech students and featuring $5,000 in cash prizes and gifts. To compete, students must create 10- to 15-minute videos on specific academic topics. Each presentation should use compelling storytelling, innovative media and inspired mentoring to explain its chosen subject matter. Winning TechBursts will be selected on the basis of creativity and clarity, and all finalists will be uploaded to a TechBurst YouTube channel for the world to see. Winning videos, which will be announced at C21U's Presidential Forum next
spring, will be determined by combining crowdsourced reviews and expert panel ratings. TechBursts will become part of an online library intended eventually to explain all topics covered in undergraduate courses offered at Georgia Tech. For registration information or to watch a video explaining the TechBurst competition, visit the C21U website.

$1M Coke Robot Donation Will Help Start RIM Logistics Lab
The Robotics and Intelligent Machines (RIM) Center will use a gift of nearly $1 million of robotics equipment from Coca-Cola Bottling Co. Consolidated (CCBBC) to create a Manufacturing Robotics Logistics Laboratory on the Georgia Tech campus. The new 3,400-square-foot laboratory, which will allow RIM faculty and students to study the use of robotics in supply chain and fleet management, initially will be outfitted with $944,000 in hardware from a CCBCC prototype bottling plant. Built by KUKA, the equipment includes robots, automated guided vehicles (AGVs), conveyor technology, safety components and other system technology. KUKA will provide the resources and manpower for delivery and set-up of the robots. Specifically, said RIM Director Henrik Christensen (IC), Georgia Tech will use the laboratory for three purposes: creating optimization algorithms for logistics; testing sensing equipment such as automated cameras and laser sensors; and for supporting the annual Virtual Manufacturing and Automation Challenge.

Staff Advisory Committee Looks to Fill 3 Slots for Upcoming Year
The Staff Advisory Committee (STAC), established this year in January to serve as a formal mechanism by which classified staff and academic professionals can have an active voice, is wrapping up its inaugural year. The committee acts as an advisory body to the dean and also oversees subcommittees such as Team MUM. This semester STAC will seek three new representatives: an at-large member and representatives from the School of Computer Science and the College. Current members include Vivian Chandler, chair and at-large member; Jennifer Chisholm, project guide and CS rep; Marcus Johnson, College staff rep; Erica Edwards, secretary and at-large member; Wanda Purinton, IC rep; and Michael Terrell, CSE rep. HR Director Pamela Ruffin and Associate Dean Charles Isbell (IC) serve as ex-officio members. College staff will receive e-mails in late October regarding the election of STAC's three open slots. To contact STAC, send email to stac@cc.gatech.edu.

GVU to Host Fall Research Showcase on Oct. 26
The GVU Center will host its Fall Research Showcase on Wednesday, Oct. 26, from 1-5 p.m. All College faculty, staff, students and alumni are invited to see more than 100 cutting-edge demonstrations of the best of GVU research, from gaming to augmented reality, to GVU's many health-related projects and more. Visitors can also talk with GVU faculty and students to learn about the future of the human experience of computing. To RSVP, visit the GVU website.

ARC to Host 1st Theory Day, Visiting Speaker Avi Wigderson
The Algorithms & Randomness Center (ARC) will play host in November to mathematician and computer scientist Avi Wigderson and then to Georgia Tech's own Theory Day. Wigderson, professor in the School of Mathematics, Institute for Advanced Study, at Princeton University, will deliver two lectures on Thursday, Nov. 10. The first, a joint ARC and School of Mathematics colloquium, is titled "The Power and Weakness of Randomness (When You Are Short on Time)" and will be held at 11 a.m. in Skiles 006. The second (and more technical) talk, "Euclidean Geometry and Theoretical Computer Science," will be held in Klaus 1116W at 4:30 p.m. On the following day, Nov. 11, ARC will sponsor its inaugural Theory Day, an all-day event in Klaus 1116 featuring four visiting speakers: Thomas Dueholm Hansen (Aarhus University), Aleksander Madry (Microsoft Research New England), Mohit Singh (MSR New England) and Ryan Williams (Stanford). For more information, stay tuned to the ARC website.

Ready, Set ... Spain! Dates Set for Barcelona 2012
Dates for the Summer 2012 Barcelona Program have been confirmed for May 10 through July 28. Student participants will choose 12 credit hours from an interdisciplinary selection of courses that will take advantage of this Mediterranean city's unique learning setting. Courses to be offered include:

- ARCH 4128 – Barcelona: Architecture & Design (Humanities, International Plan)
- COA 4803 – Cities & Citizens: What Makes Great Cities Great (Social Science)
- CS 2050 – Intro to Discrete Math for CS
- CS 3750 – Human-Computer Interface Design and Evaluation
- CS 4001 – Computing, Society and Professionalism (Ethics)
- CS 4475 – Computational Photography
- LCC 3403 – Technical Communication
- SPAN – Spanish-language courses at different proficiency levels (Humanities)

The first information session for Barcelona 2012 will be held Wednesday, Oct. 5, at 6 p.m. in CCB room 53. Interested students are encouraged to apply early; the group flight deadline is
Dec. 1, and the Barcelona Program's application deadline is Jan. 15, 2012. For more information, visit the program's website or contact program coordinator Dawn Rutherford at barcelona@cc.gatech.edu.

CoC In the News

To help Compiler readers stay informed of the latest College of Computing media coverage, we share the month's headlines from the CoC website. Below are links to all headlines from September 2011 (most recent headlines at the top).

- If Engineers Were to Rethink Higher Ed's Future
- From Georgia Tech to Google
- MacArthur Award for Smart Home Innovator
- It's All About the Walk
- When Will Our Weaponized Robots Become Autonomous?
- Intel Labs Announces ISTC on Pervasive Computing
- Computing Alum Patel Awarded MacArthur 'Genius' Grant
- GT Opens Classroom Doors to the World
- Resource Offers 'Write' Stuff for Students, Professionals, Other Writers
- A Future for Drones: Automated Killing
- Teaching A Computer To Have A Conversation Just Got Easier
- New Program Turns Computers Into Conversational Chatterboxes
- Computing Innovations to Imitate, Not Replace, Human Brain
- Abelard to Apple
- Will the Internet Burst Into Tiers?
- Colleges That Help Grads Earn Top Salaries: SmartMoney List
- Accelerator Flashpoint Launches Class, Raises $1M Fund
- Ludacris Talks to Tech Students
- Homework Sites Home Grown
- Peer-to-Peer, Wireless Network Could Help in Disasters
- Dolphins, Aliens and the Search for Intelligent Life
- A Wireless System That Works When Disasters Hit
- 2011 Disaster Going Mainstream