



Issue 54 | November 2011 [View in a Web browser](#)

Picture of the Month



## Mundie: HCI to Become More Natural

It's no secret that Microsoft's Kinect has revolutionized gaming by taking the often-complicated controller out of the equation. What else does the future hold for the relationship between human and machine? In this year's John P. Imlay Jr. Lecture, Microsoft Chief Strategy Officer Craig Mundie, EE '71, MS ICS '72 spoke about "Converging Worlds: The New Era in Computing" in front of a crowded LeCraw Auditorium in the College of Management, Oct. 27. Mundie's presentation included demos of Microsoft's newest products, which are moving in the direction of a more "natural" user interface, he said. Above, he uses the Kinect to mold a virtual jar without the use of a controller, demonstrating the high-quality machine vision made possible by the product (*see item below under General News*).

## Research News

### Financial Dashboard for September 2011

2012 YTD New Awards

**\$14,564,989**

Proposed Contracts for September 2011

Total	\$ Amount	CS	CSE	CoC
7	\$5,260,265	97%	3%	<1%

### Newly Awarded Contracts for September 2011

Sponsor	Value	PI	Co-PIs	Title
Motorola	\$100,000	Blair	Maribeth	Argon Browser, Next Steps

## Event Spotlight

November 05  
[Elementary Student Weekend Workshop - ICE Programs](#)  
 CCB 345

November 07  
[ARC Colloquium: Vitaly Feldman, IBM Research - Almaden](#)  
 Klaus 1116W

November 14  
[UROC Job Fair](#)  
 Klaus 1116E

November 25-26  
[College of Computing Fall Overnight](#)  
 College of Computing

## Numbers & Stats

**2nd**

Overall CoC finish in Homecoming's Independent Division, after finishing first in 2009 and 2010

**4**

Homecoming events won by the CoC team

**500%**

Increase in interactions on CoC Facebook & Twitter accounts since summer 2011



		MacIntyre	Gandy Coleman	
NSF	\$990,211	Mark Guzdial	Barbara Ericson	Using Instructional Design Techniques to Create Distance CS Education to Support In-Service Teachers
Lawrence Livermore National Laboratory	\$24,949	Rich Vuduc	None	Compiler-Support for Reverse Computation
Lawrence Livermore National Laboratory	\$32,000	Richard Fujimoto	None	Reverse Computing Compiler Technology
U.S. Department of Energy	\$183,056	Annalisa Bracco	Constantine Dovrolis	Validation and Quantification of Uncertainty in Coupled Climate Models

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

- Airwatch**
- Cisco**
- ConocoPhillips**
- Facebook**
- Google**
- Liberty Mutual**
- Lockheed Martin**
- Microsoft**
- Northrop Grumman**
- Palantir Technologies**
- SAIC**
- Yahoo!**

**Grants/Gifts Received for September 2011**

Sponsor	Value	PI	Co-PIs	Title
Yahoo	\$10,000	Hongyuan Zha	None	Social Meets Mobile
The Center for Discovery, Inc.	\$25,000	Jim Rehg	None	Tech for Autism
Google	\$47,000	Nina Balcan	None	Robust Efficient Clustering Algorithms
Google	\$55,885	Constantine Dovrolis	None	Peering Disputes Between Internet Service, Network & Content Providers
Google	\$85,842	Irfan Essa	None	Video Etymology
Intel	\$25,000	Edmond Chow	None	Macromolecules Simulation
Zynga	\$15,000	Jarek Rossignac	None	Mesh Compression Research

## People@CoC

**Feamster Group a Strong Presence at NANOG 2011**

**Nick Feamster** (CS) and colleagues made important contributions at a meeting of the [North American Network Operator's Group](#) (NANOG), held Oct. 9-12 in Philadelphia. NANOG is where the Internet's operators meet to discuss pressing issues on the Internet, and Feamster's group fielded three talks. Two, "[Broadband Internet Performance: A View from the Gateway](#)" (delivered by graduate student **Srikanth Sundaresan**) and "[How Many Tiers? Pricing in the Internet Transit Market](#)" (delivered by graduate student **Vytautas Valancius**, along with co-authors Feamster, **Cristian Lumezanu**, **Ramesh Johari** and **Vijay Vazirani** (CS)), had previously been presented at SIGCOMM 2011. The third, "[Analyzing the Effectiveness of the CIDR Report](#)," was delivered by **Stephen Woodrow**, now a research scientist in Feamster's lab.

**Conte Voted First VP of IEEE Computer Society**

**Tom Conte** (CS) [has been elected by the IEEE Computer Society](#) as its 2012 First Vice President, effective Jan. 1, 2012. The First Vice President, as a member of the Executive Committee and the Board of Governors, sets the direction and determines the strategy for the

IEEE Computer Society, the largest of IEEE's 38 societies and one known globally for its computing standards activities. An IEEE Fellow, Conte is the chair of the IEEE Computer Society Awards Committee and is an associate editor for the IEEE Transactions on Computers and the IEEE Computer and IEEE Micro magazines. This past summer he accepted a joint appointment with the School of Electrical Engineering.

### Vazirani Goes Coast to Coast in Search for Digital Equilibrium

**Vijay Vazirani** (CS) delivered his talk, "Extending General Equilibrium Theory to the Digital Economy: Equilibrium Pricing of Semantically Substitutable Goods," at Stanford on Oct. 13 and at [Harvard](#) on Oct. 27. The talk discussed how a new pricing model needs to be developed for digital goods. General equilibrium theory, which Vazirani called the "undisputed crown jewel of mathematical economics" over the past century, does not apply to digital goods; once produced, a digital good can be reproduced at (essentially) zero cost, thus making its supply infinite. Vazirani's talk was based on a [joint paper](#) with Kamal Jain of Microsoft Research.

### Feamster a Featured Speaker at First Open Network Summit

In the world of computer networks, open-flow and software-defined networking (SDN) has emerged as one of the most promising and disruptive networking technologies of recent years, and this year's first [Open Network Summit](#) was organized to examine this approach. **Nick Feamster** (CS) was one of the featured speakers at the event, held Oct. 17-19 in Chicago. Feamster's talk, "Software-Defined Network Management," included a description of BISMart, his open-source tool for measuring home network performance. [Video of the talk](#) is available on YouTube.

### Bader Talks Research Opportunities Between Poland, U.S.

**David Bader** (CSE) was invited to participate in a panel examining business opportunities between Poland and the state of Georgia at an event held Oct. 24 on the Georgia Tech campus. The Trade & Investment Section of the Polish Embassy in Washington, in partnership with the Georgia Department of Economic Development, had organized a conference on cooperation between Poland and Georgia, with the conference's main subject being how Poland's presidency of the European Union this year could create opportunities for U.S. businesses. The event's honorary guest, newly appointed Deputy Chief of Mission Maciej Pisarski, spoke about his country's route to success in the European Union and its cooperation with the United States. Bader spoke about research opportunities and computational science and innovation.

### Ammar to Deliver Keynote at MSWIM 2011 in Miami

**Mostafa Ammar** (CS) will deliver a keynote address on at the [14th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems](#) (MSWIM), being held Oct. 31 through Nov. 4 in Miami. The talk is titled, "Living in the WAM Continuum: Unified Design and Operation of Wireless and Mobile Networks." Last month Ammar presented a paper at the [IEEE International Conference on Network Protocols](#) (ICNP), held Oct. 18-20 in Vancouver, British Columbia. The paper, titled "Analysis of Adaptive Streaming for Hybrid CDN/P2P Live Video Systems," was co-authored with Ph.D. student **Ahmed Mansy**. Ammar also participated as a panelist in a discussion of "Hot Topics 2010."

### CoC Well Represented at VisWeek 2011

The College had a strong presence at [IEEE VisWeek 2011](#), the premier forum for information visualization, held Oct. 23-28 in Providence, R.I. VizWeek co-locates three IEEE conferences focused on different aspects of visualization: [IEEE Visualization](#) (Vis), [IEEE Information Visualization](#) (InfoVis), and [IEEE Visual Analytics Science and Technology](#) (VAST). Faculty and students presented papers, participated in contests and served on organizing committees. For the VAST Conference, two papers were presented:

- "Characterizing the Intelligence Analysis Process: Informing Visual Analytics Design through a Longitudinal Field Study", by **Youn-ah Kang** and **John Stasko** (IC)
- "Network-based Visual Analysis of Tabular Data", by **Zhicheng Liu**, **Shamkant Navathe** (CS) and Stasko

The latter received an Honorable Mention for Best Paper at the conference. The conference's Mini Challenge 3 Award – Good Use of Analytic Process went to "Jigsaw to Save Vastopolis," by **Elizabeth Braunstein**, Carsten Görg, Liu and Stasko.

Other organizational participation in the conference included:

- Stasko: VisWeek Executive Committee, InfoVis Steering Committee, InfoVis Best Papers Committee Chair, VAST Program Committee
- **Haesun Park** (CSE): VAST Program Committee
- **David Bader** (CSE): Lдав (Large-Scale Data Analysis and Visualization) Program Committee

## Personnel Announcements

**Joshua Preston** has joined CoC as a Communications Officer I in Communications effective 10/3/11. His email address is [jpreston@cc](mailto:jpreston@cc), phone number is 5-3845 and is located in KACB 1120D. Welcome Joshua!

**Stephen Urban** has joined CoC as a Temporary Research Scientist I in IC effective 10/10/11. His email address is [stephen.urban@cc](mailto:stephen.urban@cc). Welcome Stephen!

**Stephanie Echols** has joined CoC as an Administrative Professional II in the Institute for Computing Education (ICE) effective 10/20/11. Her email address is [sechols6@cc](mailto:sechols6@cc), phone number is 4-6858 and is located in CCB 305. Welcome Stephanie!

**Cristian Lumezanu's** last day at CoC was 10/07/11.

# General News

## Microsoft's Mundie Talks Tech Future in Imlay Lecture

Before a packed auditorium in the middle of Georgia Tech's Homecoming week, Microsoft's Research Chief Strategy Officer—and two-time Tech alumnus—Craig Mundie, EE 1971, MS CS 1972, [laid out a technology-enhanced vision of the future](#). And that future, he said, is not so far away. "This is the beginning of an era of computing that we think will be substantially different," said Mundie, delivering the College of Computing's John P. Imlay Jr. Lecture in the College of Management's LeCraw Auditorium. The lecture capped off a full day for Mundie, who met with groups of faculty and students from around Georgia Tech, a strategy for university visits he formulated with Microsoft Chairman Bill Gates in the 1990s. "Bill wanted to stay grounded in the real world," Mundie said. "Meeting with universities is one way to do that. It's a way to encourage a dialogue."

## CoC Team Takes 2nd Place in GT Homecoming

In its third straight year of Georgia Tech Homecoming competition, held Oct. 20-29, the College finished second overall in the Independent division. The Computing team participated in nine Homecoming events and finished with 124 points, placing behind only the Ramblin Reck Club's 162 points. The College took first-place honors in four events: Powderpuff Cheerleading, Big Easy Talent Show, Display Contest and Photo Scavenger Hunt. For complete final standings across all divisions, [visit the Georgia Tech Homecoming website](#).

## GVU Foley Scholars Honored as top Ph.D. candidates

**Kurt Luther** and **Zhicheng Liu**, Ph.D. candidates in the Human-Centered Computing program, have been named the 2011 Foley Scholars for the impact of their research at the GVU Center. The two Foley Scholar recipients, along with six finalists, were honored Oct. 26 at the Foley Scholars Dinner at the Commerce Club. Luther's work focuses on enabling leadership in online collaborative communities and Liu's research targets making data visualization more accessible. [Feature stories on both Foley Scholars](#) and [more information on the finalists](#) are available on the GVU website. The scholarship, established in 2007 and named for GVU's founder **Jim Foley** (IC), is awarded annually to the top Ph.D. candidates in the GVU Center and includes a \$5,000 fellowship for each recipient.

## CAO Sponsors Talk by Startup Riot Founder Sanjay Parekh

The [Computing Alumni Organization](#) will host a talk by Georgia Tech graduate [Sanjay Parekh](#) (EE) on Nov. 2 at 6:30 p.m. in Klaus 1116. In his talk, "Embracing Failure as a Path for Innovation and Entrepreneurship," Parekh will discuss his ventures in the world of entrepreneurship and innovation. Parekh is founder of [Startup Riot](#), a day-long conference and career fair event held in multiple cities, and a co-founding partner of [Shotput Ventures](#), a seed stage investment firm. The event is free and open to the public. For more information or to RSVP, [click here](#).

## Jinx Cluster, Enhanced by NVIDIA Donations, Available to Users

Through the Georgia Tech CUDA Center of Excellence (CCOE) directed by Jeffrey Vetter (CSE), NVIDIA has donated 68 Tesla GPUs to the College in support of teaching and research over the past 18 months. The donations include:

- 24 M2090 Fermi GPUs for use in the CoC [Jinx Cluster](#), recently funded by the Georgia Tech Technology Fee.
- 16 C2070 Fermi GPUs for use in the OIT [FORCE Cluster](#).
- 32 C2070 Fermi GPUs that have been distributed to individual researchers for use in their labs and desktop systems.

The Jinx cluster is sufficiently stable for class work and approved research functions. The cluster consists of a total of 336 physical Intel processor cores, 576 GiB of CPU memory, 23,040 NVIDIA GPU cores, 144GB of GPU memory and 100TB of scratch storage. The cluster

merges new GPU-equipped nodes, acquired through a Technology Fee proposal spearheaded by **Jason Riedy** (CSE) and former research technologist Logan Moon, with the previous Hogwarts and Jazz Technology Fee clusters over a high-speed QDR Infiniband interconnect. For further details including how to request access to the Jinx cluster, [visit the TSO website](#). The CCOE is an ongoing effort promoting research into and education using the GPU's computing capabilities. Georgia Tech leads one of just 13 CCOEs worldwide. More information is [available on the College website](#).

## 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 October 2011 (most recent headlines at the top).

- [Microsoft's Mundie Predicts 'New Era of Computing'](#)
- [College of Computing Looks to Increase Enrollment of Female Computing Majors](#)
- [Student Loan Bubble Getting Ready to Pop](#)
- [Want to Control Your Broadband Destiny? It's Coming](#)
- [Georgia Tech Warns of IT Security Risk Due to Smartphones](#)
- [War's Remote-Control Future](#)
- [3 Interesting Services to Help Students Study Together](#)
- [Your Phone's Accelerometer Can Track Keystrokes On Your PC](#)
- [Phone Hack Logs Keystrokes From Nearby Computers](#)
- [New Directions for Network Management](#)
- [Researchers Can Keylog Your PC Using Your iPhone's Accelerometer](#)
- [Clever Vibrational Hack Turns iPhone into spiPhone](#)
- [Bad Vibrations: How Smart Phones Could Steal PC Passwords](#)
- [\\$6,000 Seal Becomes a Robotic Companion for Older Adults](#)
- [Researchers Discover Keyboard Keylogger Attack Via iPhone](#)
- [Hackers Can Use Your Mobile 'To Find Out What You Are Typing'](#)
- [Your iPhone Could Be Used to Spy on Your PC Keystrokes](#)
- [Dreaming Impossible Dream 'No Strategy for Squeezed Middle'](#)
- [Smartphone Accelerometers Could Be Used To Eavesdrop On Nearby Devices](#)
- [Malware Uses Smartphone Accelerometers to Steal Keystrokes](#)
- [Smartphone Malware Could Identify Words Typed on Nearby Keyboards](#)
- [Supporting Groundbreaking Research to Assist the Disabled](#)
- [Georgia Tech-Shepherd Team Win \\$4.75M DOE Grant](#)
- [Georgia Tech and Shepherd Center Awarded \\$4.75M Grant](#)
- [How iPhone Could Be Used as a Spy Phone](#)
- [iPhone Hacked Into spiPhone Could Eavesdrop on Your PC](#)
- [Cybersecurity Threats to Pick Up Steam in 2012](#)
- [Zegura 'Computes for Good' with Carter Center Mental Health Liberia Project](#)
- [Smart Phones Could Hear Your Password](#)
- [Tech Grant Takes Aim at Autism Diagnosis, Treatment](#)
- [iPhone Keylogger Can Snoop on Desktop Typing](#)
- [Georgia Tech Turns iPhone Into spiPhone](#)
- [Cybersecurity Threats to Increase in 2012](#)
- [Smartphones Present Growing Security Problem](#)
- [Apple Launches the iCloud](#)
- [Can Charging a Cell Phone Take Down an IT System?](#)
- [Cellphones a Way to Attack Protected Devices](#)
- [New Cyber Threats Expected in 2012](#)
- [What the Nerds Know that Nobody Else Knows -- Yet](#)
- [Georgia Tech Uses Social Media to Monitor Liberian Election](#)
- [Crowdsourcing Democracy Through Social Media](#)
- [Georgia Tech Releases Cyber Threats Forecast for 2012](#)
- [Therapeutic Robots](#)
- [Impact of Steve Jobs' Death](#)
- [Can Robots Replace Soldiers in the Theater of War?](#)
- [Georgia Tech Wins \\$2 Million in NSF Grants to Improve Computer Science Education](#)
- [Safety on Social Networks](#)
- [The Rise of Killer Drones That Can Think for Themselves](#)
- [Nobel Winner Ciechanover Talks Drug Development at GT](#)

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