



Issue 28 | November 2008 [View in a Web browser](#)

Picture of the Month

## Women Jump for Computing



The Women@CC organization sent 25 students and two staff members to the Grace Hopper Celebration of Women in Computing conference, held Oct. 1-4 in Keystone, Colo. Shown jumping in the photo are: top row (left to right) Bhavna Mahadevan, Meredith Baxter, Amanda Ladd, Dawn Finney, Katie Collins, Angela Mingione and Karmelia Elliott; bottom row (left to right) Megan Crawford, Sweta Vajjhala, Candis Pham, Vinutha Prabhakar, Kathy Pham, Younah Kang, Hyungsun Kim and Steph Yang.



November 1  
**RIM@GT Fall Seminar:**  
**Chad Jenkins of Brown University**

November 3  
**HPC DLS Speaker: Dr. George Karniadakis**  
 KACB 1116E  
[vcal](#) [ical](#)

November 4  
**UROC Info Session**  
 KACB 1116E  
[vcal](#) [ical](#)

November 6  
**HPC DLS Speaker: Dr. Burton Smith**  
 KACB 1443  
[vcal](#) [ical](#)

November 6  
**GVU Brown Bag: Sandra A. Slaughter**  
 TSRB 132  
[vcal](#) [ical](#)

November 7  
**Entertainment Software Producers: Brawl Tourney**  
[vcal](#) [ical](#)

November 8  
**ACM GT Gamefest**  
 TBA  
[vcal](#) [ical](#)

November 12  
**RIM@GT Fall Seminar: Nick Roy of MIT**  
 TSRB Banquet Hall

November 14  
**Web Science Lecture: Lada Adamic**  
 MIRC 102  
[vcal](#) [ical](#)

November 16  
**Cross Registration Application Deadline**  
 CoC  
[vcal](#) [ical](#)

## Research News

### Financial Dashboard for September 2008

#### 2009 YTD New Awards

**\$10,667,349**

#### Proposed Contracts for the Month

Total	\$ Amount	CS	IC	CSE	GTISC	CERCS
12	\$5,087,116	54%	30%	7%	6%	4%

#### Newly Awarded Contracts

Sponsor	Value	PI	Co-PIs	Title
NSF	\$200,000	Alexander Gray	Jeffrey Skolnick, David Sherrill	III-SGER: Algorithms for the Next-Generation Protein Modeling
ETRI	\$140,000	Thad Starner	none	Microinteractions: Touchwatch Input and Electrictouch Feedback

U.S. DoD	\$146,121	Mustaque Ahamad	Patrick Traynor, Michael Hunter, Russ Clark	Security of IMS-Enabled Converged Applications
Pacific Northwest National Lab	\$180,000	David Bader	none	High Performance Computing for Massive Graph Analysis

November 18  
**Ucouncil Big Town Hall**  
 Klaus 1116W  
[vcal ical](#)

November 19  
**SAB/FAB Game Night**  
 TBA  
[vcal ical](#)

November 27  
**Campus Closed**  
 Georgia Tech Campus  
[vcal ical](#)

**Grants/Gifts Received**

Donor	Amount	PI	Co-PIs	Description of Gift/Donation
Microsoft	\$25,000	Beki Grinter	none	IC-General Research
Microsoft	\$25,000	Keith Edwards	none	IC-General Research



**44,846**  
 Credit hours generated by CoC in FY2008

**10.5%**  
 Increase in credit hours compared to FY2007

**18.5%**  
 Increase in credit hours generated between FY2006 and FY2008, the highest rate of growth of any college at Georgia Tech during that period

## People@CoC

### GTISC Security Summit Bigger and Better Than Ever

More than 300 people attended the 2008 GTISC Security Summit on Emerging Cyber Security Threats, the sixth security summit hosted at Georgia Tech since 2004. The annual summit has evolved into one of the most forward-looking cyber security events with a focus on emerging threats and brings together thought leaders in the information technology and security fields to explore key cyber security threats and ways for countering them. The Oct. 15 summit also marked the second issuance of the annual [GTISC Emerging Cyber Threats Report](#) for the year ahead. The summit proceedings can be viewed online [here](#).

### MAGIC Lab Working on Modeling Aquatic Propulsion

**Jarek Rossignac** is hosting two international visitors in the MAGIC lab this semester who will be contributing to the National Science Foundation Aquatic Propulsion Lab (APL) project.

- **Hyunpung Park**, senior research engineer from Samsung Electronics in Korea, arrived Oct. 16 for a sabbatical year or perhaps longer. Park is interested in meshing and has authored papers on model acquisition, animation and control.
- **Alvar Vinacua** is visiting from the Universitat Politècnica de Catalunya in Barcelona, Spain. Vinacua has a deep math background and interests in a broad variety of modeling and rendering topics.

The Aquatic Propulsion Lab is an NSF-funded collaboration led by Rossignac between Georgia Tech and the University of Southern California. The objective of APL is to model the variety of aquatic propulsion techniques (i.e., swimming styles of marine creatures) found in nature, to compare their efficiency in different environments (fluid models) and to devise control strategies that optimize them. APL researchers hope to develop interactive design paradigms for the creation of autonomous swimmers capable of using a combination of propulsion techniques and of adapting to their environment. In addition to the international participants, Assistant Professor Thorsten Stoesser of the School of Civil Engineering has joined the APL effort. Stoesser offered help in using his fluid solver and validating the GPU-accelerated particle-based fluid simulator. Finally, [George Biros](#) (CSE) has provided consulting on the fluid simulation and has offered his fluid solver to APL for testing the lab's swimmers.

### Bader Gives Plenary Talk at Los Alamos Symposium

**David Bader** (CSE) gave an invited plenary talk titled "Accelerators, Cell Broadband Engine, Graphics Processors and FPGAs" at a symposium Oct. 14-15 sponsored by Los Alamos National Laboratory, which earlier this year broke the world record by achieving one petaflop of computational performance on the Roadrunner supercomputer. The conference was organized to cover internationally recognized computer science and computational science research and development efforts relevant to the goals of Los Alamos National Laboratory and of the HPC community in general. This year the Los Alamos Computer Science Symposium (LACSS) focused on hybrid and heterogeneous systems, including architecture and programming environments. Other plenary speakers included Dan Reed (Microsoft), Josep Torellas (Illinois) and Steve Wallach (Convey).

### CoC Women Celebrate Themselves and Peers at Grace Hopper

The Women@CC organization sent 25 students and two staff members (see photo above) to the Grace Hopper Celebration of Women in Computing conference, held Oct. 1-4 in Keystone, Colo. The conference, whose theme was "We Build a Better World," drew participants from all over the globe and allowed them to network and exchange ideas about women working in



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

- Attendi, Inc.**
- Boeing Company**
- Google**
- IBM**
- Intel**
- LogicBlox**
- MediaPower**
- Microsoft**
- Motorola**
- OSI Software, Inc.**
- PayPal**
- Qualcomm, Inc.**
- Telcordia**
- Texas Instruments**

Travelport  
Yahoo!

technology. The programs focused on celebrating the ways that women in technology improve the world through groundbreaking research and by becoming industry pioneers and leaders in academia. In a post-conference survey, 88 percent of CoC attendees said they believe participating in the event increased their commitment to a career in computing and made them feel more connected to the computing community at Georgia Tech.

### First Foley Scholars Named

The [Foley Scholars Endowment](#) has named **Kelly Caine**, a Ph.D. student in the School of Psychology, and **Christopher Le Dantec**, a Ph.D. student specializing in human-centered computing from the School of Interactive Computing, the 2008-2009 Foley Scholars. The Foley Scholars Endowment, established a year ago during the 15th anniversary of the Gvu Center, provides each year direct financial gifts of \$5,000 to two outstanding graduate students active in research at Gvu. The award was established by colleagues of **Jim Foley** and Gvu alumni to honor Foley's significant contributions in the field of computing, his influence on the work of others and his dedication to the development of new research directions. This year's Foley Scholars were selected by an advisory board comprised of Gvu alumni, current faculty and industry partners. Caine and LeDantec were selected from a group of eight finalists: **Ben Davison**, **Nick Diakopoulos**, **Marshini Chetty**, **Matt Flagg**, **Erika Poole** and **Thomas Smyth**, all Ph.D. students in computing. All finalists were honored at a dinner co-hosted by long-time Gvu industrial partner Motorola on Oct. 22.

### Gvu Researchers Show Their Stuff

More than 200 visitors from industry, media and other Georgia Tech colleges came to see this year's Gvu Research Demo Showcase on Oct. 23. Gvu faculty and students put together a record 97 research projects in the center's traditionally strong areas of expertise: animation and graphics; augmented reality; brain computer interfaces and assistive technology; collaborative work; domestic computing; digital media; gaming; health and wellness; human-computer interaction; human-robot interaction; learning; music technology; social computing; tangible media; and wearable computing. The full list of Gvu research demos and their descriptions can be found [here](#).

### Reaching Out to Bring More Girls Into Computing

The Institute for Computing Education (ICE), which is offering four workshops in November, has been working with the Girl Scouts since 2005 to offer computing workshops that challenge negative stereotypes about computer science. **Barb Ericson**, director of computer science outreach for the College, says the number of young women majoring in computer science nationwide is at an all-time low. In two of the upcoming workshops, the girls will learn to program robots to navigate a simple course or do a simple dance. In the other two workshops, participants will create 2D or 3D animations with Scratch or Alice. Participation in these workshops has gone from 190 girls in 2005-06 to 1,595 in 2007-08, and Ericson says surveys before and after each four-hour workshop show statistically significant changes in attitudes among the girls. In addition to its work with Girl Scouts, ICE also works with the YWCA Teen Girls in Technology program, Cool Girls and the Boys and Girls Clubs.

### New Industry Partnership Announced

Motorola and Georgia Tech announced a campus-wide initiative for research and educational activities including student competitions in "End-to-End User Experience of Home Media Mobility." Gvu Director **Beth Mynatt** is the lead PI for the partnership with Motorola that also includes OIT, CERCS and the Georgia Tech Broadcast Institute. The partnership received an initial \$300,000 gift from Motorola.

### Foley Formally Inducted into National Academy of Engineers

**Jim Foley** was in Washington the weekend of Oct. 4-5 to be inducted into the National Academy of Engineering (NAE) in recognition of his contributions to the fields of computer graphics and human-computer interaction. Election to the NAE is among the highest professional distinctions accorded to an engineer. Academy membership honors those who have made outstanding contributions to "engineering research, practice or education, including, where appropriate, significant contributions to the engineering literature," and to the "pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing and/or implementing innovative approaches to engineering education."

### CoC Team Wins Intramural Championship

The College of Computing's Ultimate Frisbee team won the school intramural championship Oct. 14. Team CoC & Co.—made up of faculty, undergraduates and graduate students from both the College of Computing and the Department of Biomedical Engineering—finished the season undefeated with a perfect record of 9-0. Take a look at our winning team [here](#).

### Nersessian Releases New Book with MIT Press

MIT Press has released a new book by **Nancy Nersessian** (IC) titled *Creating Scientific Concepts*, in which Nersessian seeks to answer a central but virtually unasked question in the problem of conceptual change: How do novel scientific concepts arise? Nersessian argues that the popular image of novel concepts and profound insight bursting forth in a blinding flash of inspiration is mistaken. Instead, novel concepts are shown to arise out of the interplay of three factors: an attempt to solve specific problems; the use of conceptual, analytical and material resources provided by the cognitive-social-cultural context of the problem; and dynamic processes of reasoning that extend ordinary cognition.

### Ahamad and Traynor Participate in Embedded Systems Week Workshop

**Mustaque Ahamad** (GTISC) served as keynote speaker and **Patrick Traynor** (CS) organized one of the panels at an Oct. 23 [workshop](#) in Atlanta as part of Embedded Systems Week. The workshop addressed the range of problems related to embedded system security, particularly security topics that are unique to embedded systems. Ahamad's talk was titled "Embedded Systems Security: From Threats to Mitigation Strategies." The panel organized and moderated by Traynor focused on embedded systems and their increasing impact on infrastructure security and featured **Jon Giffin** (CS) and Tom Cross and Gunter Ollman of IBM-ISS.

### GTISC Faculty and Students Present on Web Information Credibility

**Mustaque Ahamad**, **Mike Hunter** (both of GTISC) and doctoral students **Jeff King** (CS) and **Jennifer Stoll** (IC) presented a paper, "ALPACA: A Lightweight Platform for Analyzing Claim Acceptability," at the Second Workshop on Information Credibility on the Web (WICOW 2008), Oct. 26-30 in Napa Valley, Calif. The purpose of the conference was to identify challenging problems facing the development of future knowledge and information systems, as well as to shape future research directions through the publication of high-quality, applied and theoretical research findings. The paper is available online [here](#).

### Webinar Highlights the Integration of Multicore in CS Curriculum

**Matt Wolf** and **Ada Gavrilovski** (CERCS) conducted a webinar Oct. 30 for Intel about work they have been doing on multi-core education, especially Gavrilovski's work in coordinating curriculum innovation on a [single web portal](#). Gavrilovski's work was based on a trend-setting approach for curriculum led by **Karsten Schwan** (CERCS), which was funded by and has been held up by Intel as an example of their "multicore university" program. The webinar, titled "Parallelism in the Classroom: The View from Georgia Tech," focused on strategies the College has developed to break students out of the traditional view of problem solving—to break a problem down into pieces and find a logical progression to solve each individual piece sequentially—and move them toward newer methods of concurrent execution.

### Riedl to Present Papers in Three Countries This Month

**Mark Riedl** (IC) presented a paper on story generation at the 5th International Joint Workshop on Computational Creativity, Sept. 17-19, in Madrid, Spain. The workshop brought together researchers from artificial intelligence, cognitive science and related areas such as psychology, philosophy and the arts. Together they addressed issues like how to assess creativity in computers, how computers can model creative thought, how computers can be used to enhance human creativity and how to implement creative software systems. The paper, titled "Vignette-Based Story Planning: Creativity Through Exploration and Retrieval," will be published in the Proceedings of the 5th International Joint Workshop on Computational Creativity. Riedl also has the following events coming up in November:

- Giving an invited talk at the 3rd International Colloquium on Creativity, Cognition and Computers, Nov. 6-7 in Mexico City.
- Giving an invited talk at the IT University of Copenhagen on Nov. 24 in Copenhagen.
- Presenting with CS graduate student **Neha Sugandh** their paper, "Story Planning with Vignettes: Toward Overcoming the Content Production Bottleneck," at the [1st Joint International Conference on Interactive Digital Storytelling](#) to be held in Erfurt, Germany, Nov. 26-29.

### Bader Talks About Computational Science and Evolution

**David Bader** (CSE) was a featured speaker at the Oct. 23 Symposium on Biomedical High Performance Computing sponsored by the CDC Biotechnology Core Facility. Together with Joel Saltz, MD, Ph.D. and Tahin Kurc, Ph.D.—both of Emory University—Bader spoke about the grand challenge to reconstruct the tree of life using computational science. The abstract reads: "Phylogenies derived from gene order data may prove crucial in answering some fundamental questions in biomolecular evolution. Yet very few techniques are available for phylogenetic reconstruction based upon gene order and content, and these are (for the most part) computationally expensive. High-performance algorithm engineering offers a battery of tools

that can reduce, sometimes spectacularly, the running time of existing approaches.”

### **Ram, Ontanon, Jain and Mehta Present at Storytelling Conference**

A paper by **Ashwin Ram** (IC) and graduate students **Santiago Ontanon**, **Abhishek Jain** and **Manish Mehta** has been accepted at the [1st Joint International Conference on Interactive Digital Storytelling](#) to be held in Erfurt, Germany, Nov. 26-29. The paper, titled “A Drama Management Architecture for Interactive Fiction Games,” discusses the drama management components in interactive, story-based games that gently guide the story toward a narrative arc that improves the player’s experience. The authors present their drama management (DM) architecture for real-time interactive story games that have been connected to a real graphical interactive story based on the game “Anchorhead.” They also report on the natural-language-understanding system that has been incorporated into the system and into a user study with an implementation of their DM architecture.

### **Personnel Announcements**

**Alex Hill** has joined CoC as a Post-Doc in IC effective Oct. 13. His email address is [alexhill@cc](mailto:alexhill@cc), and he is located in TSRB 333. Welcome Alex!

**Ashwin Lall** has re-joined CoC as a Tech Temp in CS working with Jim Xu effective Oct. 6. Welcome back Ashwin!

**Matthew “Harper” Langston** has joined CoC as a Research Scientist I in CSE working with George Biros effective Nov. 8. His email address is [hlangsto@cc](mailto:hlangsto@cc), and he is located in KACB 1343. Welcome Harper!

**Xiapu “Daniel” Luo** has joined CoC as a Post-Doc in CS working with Wenke Lee effective Aug. 15. Welcome Daniel!

**Derek Reilly** has joined CoC as a Temporary Research Scientist I in IC effective Oct. 8. His email address is [reilly@cc](mailto:reilly@cc), and he is located in TSRB 346. Welcome Derek!

**James Fedd**’s last day at CoC was 10/1/08.

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