

GvU

GEORGIA TECH

UNLOCKING

HUMAN POTENTIAL
THROUGH TECHNICAL
INNOVATION

ANNUAL REPORT 2010



 **Georgia Institute**
of Technology

“Our work reflects a high level of human value. We want GvU to make an impact on real-world problems. These are the things that are really worth doing in life. I want the GvU Center to lead the way.”

Beth Mynatt—GvU Director

DEDICATED TO UNLOCKING HUMAN POTENTIAL THROUGH TECHNICAL INNOVATION

The GvU Center at Georgia Tech is a university-wide interdisciplinary research center dedicated to developing innovative and interactive computing technologies that enable people to **unlock their potential**. This dedication demands deep insight into human behavior and motivation, technical savvy to invent cutting edge technologies, and vast creativity to imagine and design the future. After seventeen years of practicing interdisciplinary research, the GvU Center has gained international recognition in Animation, Augmented Reality, Collaborative Work, Digital Media, Educational Technologies, Gaming, Graphics, Health Informatics, Human-Computer Interaction, Information Visualization, Online Communities, Virtual Reality and Wearable Computing.



CONTENTS

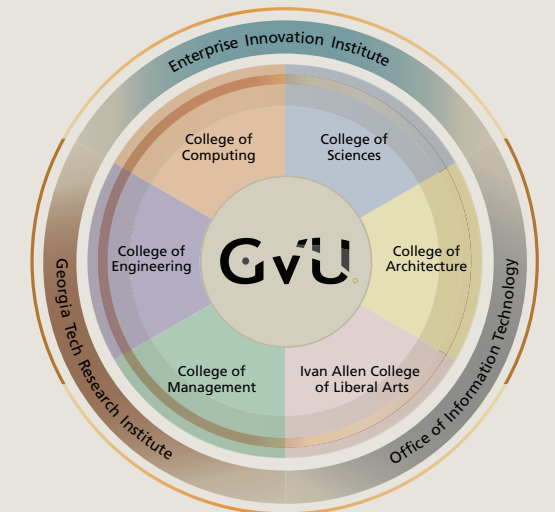
- 01 ABOUT GvU
- 03 GvU HIGHLIGHTS
- 05 FACULTY ACHIEVEMENTS
- 08 STUDENT SUCCESS
- 11 INDUSTRIAL PARTNERSHIPS
- 14 GvU STRATEGIC VISION
- 15 INNOVATION GRANTS
- 16 EXPENDITURES
- 17 FACULTY AND STAFF



Our visions of the future are grounded in the human experience of technology

MANY DISCIPLINES, ONE GOAL

At the GvU Center, the interdisciplinary environment is essential to what we do, and more importantly, how we do it. At GvU, faculty and students from every college at Georgia Tech come together to lend expertise, ranging from science and engineering to the humanities and design. The deep collaboration between these diverse domains enables the center to engage in synergistic research that would otherwise be difficult to achieve in traditional academic and industrial settings. GvU is a leading example of an academic community built on the belief that people working together in partnership with technology creates the ideal setting for discovery and innovation.



RESEARCH THEMES

GvU embraces seven basic themes that shape and guide our research. These human-centered themes reflect core societal values that are fundamental to people everywhere. We enhance these values by creating technologies that will become the tools to meet people’s needs and improve their lives.

The right technology applied in the right circumstances can enhance creativity, an often elusive yet desirable trait central to human potential in many fields. One of our ongoing efforts is to develop new kinds of applications that lead to novel ways of thinking.

CREATIVITY

Technology, especially in the form of digital media, evokes powerful human emotions—joy, excitement, passion, belonging, and engagement. Our goal is to engage the nuance and complexity of these characteristics to amplify human potential.

EMOTION

We explore a myriad of ways to augment human capabilities that enable self reliance and improve quality of life.

INDEPENDENCE

We want to invigorate the manner of engagement and reach of traditional education by creating tools that teach at all stages of life.

LEARNING

How do you establish sufficient common ground for people to trust technology information, and each other? Our goal is to understand this process and create solutions that build and enhance trust—from workgroups up to communities to nations.

TRUST

PERSUASION

Technology is not neutral—it has the power to communicate and persuade. Through novel interactive experiences, we create opportunities for exploring other points of view and fostering new paradigms for social interaction and expression.

WELLNESS

We are engaged in developing new technologies that enhance health-care in all settings and motivate people toward a healthy, rewarding life.

Being an active part of our community brings meaning and fresh energy to our work. We pride ourselves on the many things we do every year to connect with people. It gives us valuable opportunities to voice our efforts and receive valuable feedback.

GVU HIGHLIGHTS

July 2009

1st Place at Imagine Cup 2009

Undergraduates Kathy Pham and Marc Paré, mentored by Keith Edwards, placed first in the Microsoft Imagine Cup international competition for the MashUp category.

August 2009



GVU Ice Cream Social Kicks Off Brown Bag Lecture Series and Call for Foley Scholars
GVU hosted its traditional Ice Cream Social to welcome back students and faculty, kick off the GUV Brown Bag series, and call for submissions for the second annual Foley Scholars awards.

September 2009

Glitch Game Testers Launched

Glitch Game Testers, a joint program between the College of Computing and Morehouse College, is helping Atlanta high school students make the connection between the fun of video games and the field of computer science. GUV's Ph.D. student Betsy DiSalvo is the program lead.

Mynatt Presents at Intel Developer Forum
Beth Mynatt was invited by Justin Rattner, CTO of Intel, to take part in the final plenary presentation at the Intel Developer Forum. Mynatt talked about the future of social media and highlighted some of the exciting work coming out of the GUV Center.

GVU Alumnus Introduces Google Fast Flip

Krishna Bharat, Principal Scientist at Google and the founding patron of GUV's Foley Scholars Endowment introduced Google Fast Flip, a service designed to provide fast overview of headline pages of top newspapers.

October 2009

2010 Foley Scholars Announced

The 2009-10 Foley Scholars—Marshini Chetty and Erika Poole, together with the six finalists were honored at the Foley Scholars Reception, sponsored by Google, on Oct. 14 at the Ansley Golf Club.

GVU at FutureMedia Conference

GVU was heavily involved in the FutureMedia Conference held on Oct. 15. The unprecedented conference called on academics, venture capitalists, entrepreneurs, and industry leaders to explore what comes next in digital, social, and multimedia. GUV Director Beth Mynatt presented her views on the nascent state of digital media. The lunch keynote was delivered by GUV alumnus Krishna Bharat, Principal Scientist at Google and the creator of Google News. GUV's annual research showcase presented more than 100 research projects to conference visitors.

Strong GUV Showing at Creativity & Cognition '09

Papers from the GUV community constituted 20 percent of the overall program at the Creativity and Cognition conference, held Oct. 27-30 in Berkeley, CA.

Weinberg's ZOOZbeat Number 2 in Paid Music Applications

Gil Weinberg's ZOOZbeat application made #38 in paid apps overall in the iTunes App Store and #2 in paid music apps.

November 2009

SONIC GENERATOR Concert: The French-American Connection

Sonic Generator presented their opening concert of the season at the Georgia Tech Alumni House on Nov. 16th. The concert featured compositions by Philip Glass, Pierre Jodlowski, Steve Reich, François Sarhan, Edgard Varèse, and John Zorn.

Sonic Generator Named One of Atlanta's Best Art & Culture Offerings

Shortly after their opening concert, Atlanta Magazine named Sonic Generator as one of Atlanta's best "arts & culture" offerings of 2009.

GVU Sponsors the Art History of Games

The GUV Center sponsored The Art History of Games, a public symposium in which members of the fields of game studies, art history, and related areas of cultural studies gather to investigate games as an art form.

December 2009

CHI 2010 Planning Committee Meeting

From Dec. 2-5, the GUV hosted the CHI Planning Committee Meeting for 150 researchers and experts in the field of human-computer interaction. The meeting determined the technical program for the CHI 2010 conference.

Weinberg on NPR

NPR interviewed Gil Weinberg about his robotic marimba player, Shimon. Weinberg (in Japan) and Shimon (in Atlanta) performed live at SIGGRAPH 2009 at what was dubbed "the first intercontinental musical interaction between humans and robot."

Jul

Imagine Cup 2009



Aug

Brown Bag lectures



Sep

Glitch! testing



Oct

Foley Scholars



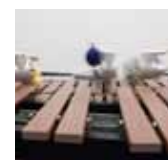
Nov

Sonic Generator



Dec

Shimon on NPR



Jan

Geek to Chic



Feb

Interactivity@GT



Mar

President's visit



Apr

Mynatt chairs CHI 2010



May

Turner VIP visit



Jun

Argon browser



January 2010

Bogost's Game Nominated for the Nuovo Award at IGF

Ian Bogost's art game *A Slow Year* was nominated for the Independent Games Festival Nuovo Award. The award is intended to "honor abstract, shortform, and unconventional game development, which advances the medium and the way we think about games."

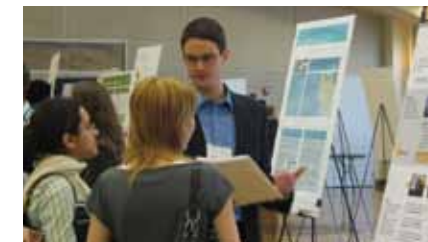
Starner and Bogost Turn Geek to Chic

Thad Starner and Ian Bogost made the pages of *The Atlantan* magazine for their research that turns technological "geekiness" into design "chic-iness." Starner is helping to design wearable computing sensors that could enable users to answer their cell phones or check their email with a wave of their hand. Bogost creates intriguing games that operate somewhere on the border of conceptual art and social commentary.

February 2010

SONIC GENERATOR Concert: Technology Meets Music

Sonic Generator presented concert featuring music of resident composer Michael Gordon at the Woodruff's Rich Theatre.



GVU and IC Host 9th INTERACTIVITY@GT

On Feb. 22, GUV and the School of Interactive Computing presented INTERACTIVITY@GT. The event showcased HCI and Digital Media M.S. students to industry visitors looking to fill spots for internships or post-graduation employment. Sponsored by Roundarch, more than 50 students and 29 companies participated in this "reverse career fair".

Computing at the Margins Workshop

GVU and the School of Interactive Computing hosted the Computing at the Margins workshop. Sponsored by the NSF and chaired by Beki Grinter, Mike Best and Keith Edwards, the workshop produced a report for the NSF that articulated three goals: developing "grand challenges" that guide multi-institution research for many years, identifying scientific hurdles that must be tackled to make progress toward those longer-term goals, and defining approaches and suggested testbeds.



President Bud Peterson and Senior Vice-Provost for Academic Affairs Andy Smith visit GUV

March 2010

President Peterson Visits GUV Center

Georgia Tech President G. P. "Bud" Peterson and members of Tech's senior administration visited the GUV Center on Mar. 16. Peterson and members of his cabinet saw the latest research developments in gaming, mixed reality, workspace collaboration, personal health informatics, and wearable and brain user interfaces.

Abowd Receives ACM Humanitarian Award

Gregory Abowd was awarded the prestigious ACM Eugene L. Lawler Award for Humanitarian Contributions within Computer Science and Informatics.

April 2010

GVU Heavily Involved in CHI 2010 Organization, April 10-15 in Atlanta

Beth Mynatt chaired ACM CHI 2010, the premier worldwide forum for exchanging information on all aspects of how people interact

with computers. The conference offered two days of workshops and four days of dynamic sessions exploring the future of computer-human interaction. CHI 2010 attracted more than 2,000 professionals from 40-plus countries. Keith Edwards served as technical program co-chair. Carl DiSalvo and Jason Freeman organized the CHI 2010 Media Showcase.

GVU Research Showcase Draws Record Crowd

The GUV Research Showcase, held Apr. 16, attracted a record number of visitors. GUV faculty and students presented their research to more than 300 people from industry and peer academic institutions. The showcase featured over 90 exhibits of GUV research projects.

Board of Regents Pays Visit to GUV

President Peterson hosted the Board of Regents visit to the GUV Center on Apr. 20. The visit included demonstrations from GUV researchers in the areas of augmented reality, education, health and wellness informatics, wearable computing, and brain computer interfaces.

May 2010

Turner Employees Visit GUV Center

The GUV Center hosted its fourth annual Turner VIP Visit on May 4, 2010. Over 150 executives across many Turner branches came to the GUV Center for a guided showcase. This showcase focused on gaming and entertainment, among other innovative areas of human-centered, technology driven research.

The Colbert Report's ThreatDown #2 – Gil Weinberg's Shimon

Georgia Tech's robotic marimba player Shimon was featured on the May 12 edition of the Colbert Report.

June 2010

Developer Preview of the Argon Mobile AR Browser at ARE2010

Argon, the first open source mobile augmented reality browser developed, was previewed at the Augmented Reality Event 2010.

Our talented and dedicated faculty is the reason for our success. It's that simple. Our faculty is a brilliant consortium of researchers from six different colleges within Georgia Tech—and we're proud to share in their individual and collaborative academic successes.

FACULTY ACHIEVEMENTS

Awards

Grinter Receives UC-Irvine Alumni Honor

Beki Grinter (CoC), a two-time alumnus of the University of California-Irvine, received a Distinguished Alumni award from the university's Donald Bren School of Information and Computer Sciences in a ceremony on May 13 in Irvine, CA.

Best Wins Class of 1934 Award for Interdisciplinary Research

Mike Best (IAC) received Georgia Tech's Class of 1934 Outstanding Interdisciplinary Activities Award, bestowed annually to "faculty who have made significant interdisciplinary contributions to teaching and research."

Karen Liu Awarded Sloan Fellowship

Karen Liu (CoC) was one of two Georgia Tech professors among sixteen computer scientists nationwide to receive a prestigious Sloan Fellowship for 2010. In her research, Liu develops computational models of human and animal motion and uses them to build tools that help scientists, engineers, and artists to model, simulate, and design natural motion.

Freeman Wins Second Prize at the Mauricio Kagel Composition Competition

Jason Freeman (CoA) won second prize for his Piano Etude "Reading a Poem" at the Mauricio Kagel Composition Competition held Feb. 15-19 in Vienna. Only three of 190 entrants received awards.

DiSalvo's Best Paper Award

Carl DiSalvo's (IAC) "Mapping the Landscape of Sustainable HCI" paper won a Best Paper award at CHI 2010.

Edwards, Grinter Named ACM Distinguished Scientists

Keith Edwards and Beki Grinter (both CoC) were named Distinguished Scientists by the Association for Computing Machinery (ACM).

Mullick Named Fulbright-Nehru Research Scholar

Abir Mullick (CoA) was named a Fulbright-Nehru Research Scholar. As a Fulbright-Nehru Scholar, Mullick is part of the inaugural cohort of the first Fulbright program supported jointly by the U.S. and Indian governments. Mullick is the first faculty member in three years from Georgia Tech to receive this coveted award.

Potts Paper Named Most Influential of 1999

A 1999 paper by Colin Potts (CoC) was named at the IEEE International Conference on Requirements Engineering 2009 as the most influential paper of 10 years ago. Potts' paper, "ScenIC: A Strategy for Inquiry-Driven

Requirements Determination," grew out of a larger project done in collaboration with fellow faculty members Gregory Abowd, Ashok Goel, Melody Moore Jackson, and Spencer Rugaber.

Human-Robot Interaction

Thomaz Named a Top Innovator Under 35

Andrea Thomaz (CoC) has been named one of 2009's Top Innovators Under 35 by MIT Technology Review. Thomaz's research focuses on social interactions between robots and humans; her robots give visual cues, such as gestures and facial expressions, to indicate whether they understand what a person is telling them. Thomaz also develops machine learning methods to help robots more quickly learn physical tasks, particularly from teachers who are not necessarily programmers.

Thomaz's Social Simon Made His Public Debut at CHI 2010

Social robot Simon, a product of Andrea Thomaz' team, was introduced to the media at CHI 2010, the premier computer-human interaction conference held in Atlanta in April. Source: SmartPlanet.com, PC World, Engadget, Network World



Top Innovator Andrea Thomaz with Simon's socially expressive head

Emerging Leadership in Health Information Technologies

Rehg Finalist for Best Paper Award at Pervasive Health Conference

James Rehg (CoC), along with M.S. student Priyal Mehta, coauthored the paper "AID-ME: Automatic Identification of Dressing Failures Through Monitoring of Patients and Activity Evaluation," selected as a finalist for Best Paper award at the fourth International ICST Conference on Pervasive Computing Technologies for Healthcare (Pervasive Health).

Other papers authored by GUV faculty included "Asthma Management Practices of Families and Pediatric Patients with Asthma" (Yun, Jeong, Lee, Arriaga, Abowd), "Training Social Problem Solving Skills in Adolescents with High-Functioning Autism" (Boujarwah, Hong, Isbell, Arriaga, Abowd), "Mobile Music Touch: Vibration Stimulus as a Possible Hand Rehabilitation Method" (Markow, Starner), and "Salud!: An Open Infrastructure for Developing and Deploying Health Self-Management Applications" (Medynskiy, Mynatt).

GUV Well Represented at IMFAR Conference

Gregory Abowd, Rosa Arriaga, Jim Rehg, and Ashok Goel represented the GUV in the International Meeting for Autism Research Conference (IMFAR). One of the goals of the conference was to foster interdisciplinary dialogue among autism scientists. Thanks in part to efforts of the Autism Speaks foundation's Innovative Technologies for Autism Board, of which Abowd is a member, the computer science community has a growing presence in the conference.

Mynatt at Discovery and Innovation in Health IT Workshop

Beth Mynatt helped organize the Discovery and Innovation in Health IT workshop, held in San Francisco, Oct. 29-30. This invitation-only workshop pulled together researchers from academia, government, and corporate labs to lay out the key health IT research challenges.

Abowd Receives ACM Humanitarian Award

The Association for Computing Machinery awarded Gregory Abowd (CoC) the Eugene L. Lawler Award for Humanitarian Contributions within Computer Science and Informatics.



ACM Humanitarian Award winner Gregory Abowd

Abowd serves as Director of the Health Systems Institute, a joint Georgia Tech/Emory University research institute investigating the impact of technologies on healthcare delivery. For the past decade, his research has focused on applying information technology to assist autistic children and their parents.

In its award announcement, ACM said Abowd was selected for the Lawler Award "for promoting a vision of health care and education that incorporates the use of advanced information technologies to address difficult challenges relating to the diagnosis and treatment of behavioral disorders, such as autism, as well as the assessment of behavioral change within complex social environments."



Beki Grinter, Michael Best, Karen Liu, Jason Freeman, Keith Edwards, Abir Mullick, Carl DiSalvo, and Colin Potts are among the many outstanding GUV faculty who were noted for their achievements this year

Our students represent the future of research and innovation across multiple disciplines, and we take our job of guiding their success seriously. The accomplishments of these bright young people reflect the overall quality and commitment of our students and make us proud to be part of their journey.



Melody Moore Jackson is developing direct brain interfaces that will allow people with "locked-in syndrome" to communicate

Talks

Edwards' Keynote at UW/Microsoft Research Summer Institute

Keith Edwards was a keynote speaker at the University of Washington/Microsoft Research Summer Institute at Semiahmoo Resort in Washington. Attended by leading computer science researchers, this event focused on tackling the issue of complexity in digital homes. Edwards also was an invited participant at the Computer Science and Telecommunications Board workshop on Usable Security and Privacy, at the National Academy of Science in Washington, D.C.

Moore Jackson at TEDxPeachtree

Melody Moore Jackson (CoC) was invited to speak at TEDxPeachtree about her research in direct brain interfaces. She spoke about using direct brain interfaces to allow ALS patients to enhance their communication and their wheel chair mobility, and about the recently discovered possibilities to "re-wire" the brain allowing people to regain control over their body movement.

Bruckman at TEDxNYED

Amy Bruckman (CoC) presented at TEDxNYE. During her talk, "Understanding of the Internet's Present, and Values-Based Design of its Future," Bruckman spoke about the existing online systems, understanding and identifying their values, and setting achievable goals for new designs.



Amy Bruckman presents at TEDxNYED

National Advisors

Isbell Joins CISE Advisory Board

Charles Isbell (CoC) has been named to the 25-member advisory committee of the NSF Directorate for Computer & Information Science & Engineering (CISE). CISE is the NSF arm responsible for computer science and its related fields. Isbell will serve a two-year term.

Arkin Elected to IEEE Society Boards

Ron Arkin (CoC) has been elected to three-year term on the Boards of Governors for the Institute of Electrical and Electronics Engineers Society on Social Implications of Technology (SSIT).

Mynatt Gets Kavli Symposium Invite

Beth Mynatt was invited to the National Academy of Science's 21st Kavli Frontiers of Science Symposium at the Beckman Center, CA, Nov. 12-14. The symposium brings together the best scientists under 45 years of age to discuss exciting advances and opportunities in their fields. Participants include leading researchers from academic, industrial and federal laboratories in such disciplines as astronomy, astrophysics, atmospheric science, biology, biomedicine, chemistry, computer science, earth sciences, genetics, material sciences, mathematical sciences, neurosciences, pharmacology, and physics.



Beth Mynatt describes human convergence at IDF 2009

Mynatt Presents at the Intel Developer Forum

Beth Mynatt was invited by Intel CTO Justin Rattner to talk about human convergence at the Intel Developer Forum 2009.

Nersessian In Demand to Talk Creativity and Science

Nancy Nersessian (CoC) gave the keynote address, "Creativity in the Wild: Conceptual Innovation on the Frontiers of Science," at ICCX X, the first International Conference on Computational Creativity.

Georgia Tech Awards

College Honors GUV Members at 19th Annual Awards Celebration

Interim Dean Jim Foley presided over the 19th Annual College of Computing Awards Celebration, held April 20 in the Klaus Atrium. Members of the GUV Center walked away with several awards:



Irfan Essa received the Raytheon Faculty Fellowship Award for 2010

Outstanding Junior Faculty Research 2010 – Karen Liu

Outstanding Supervisory Staff & Service Award 2010 – Randy Carpenter

The Freeman Award 2010 – Cedric Stallworth & Barbara Ericson

The Raytheon Faculty Fellowship 2010 – Irfan Essa

STUDENT SUCCESS

Awards



Kunda Wins Anita Borg Scholarship

CS Ph.D. student Maithilee Kunda (advisor Ashok Goel) has been awarded a 2010-11 Google Anita Borg Memorial Scholarship.

Image by Wojtan and Thuerey Chosen for the Cover of SIGGRAPH Proceedings

Wojtan and Thuerey's (ETH Zürich) image from their paper, "A Multiscale Approach to Mesh-Based Surface Tension Flows" (Thuerey, Wojtan, Gross, and Turk) was chosen for the front cover of the Proceedings for the SIGGRAPH 2010. This is the first SIGGRAPH front cover image from Tech.



Wojtan and Thuerey's digital image was chosen for the cover of SIGGRAPH 2010 Proceedings

Kar Wins Cardboard Chair Competition

M.S. student in Industrial Design, Gourab Kar (advisor Abir Mullick), took home the first prize in the cardboard chair competition, sponsored by the Atlanta American Institute of Architects (AIA). The prize was a designer chair from the AIA and \$1,000 from the School of Industrial Design.



Lana Yarosh presents her award-winning research that keeps families in touch over distance

Yarosh Gets IBM Graduate Research Fellowship

Lana Yarosh was awarded the IBM Graduate Research Fellowship for her research project, "Supporting Parent-Child Synchronous Communication over Distance."

Grimes – Two Times Fellow

Andrea Grimes won two fellowships this year—The Ford Foundation Dissertation and The Georgia Tech/IBM FOCUS Fellowship for her research project, "Using Community-Based Technologies to Address Diet-Related Health Disparities."

Brudvik Receives NSF Honorable Mention 2010

Jeremy Brudvik received an Honorable Mention 2010 from the NSF Graduate Research Fellowship Program.

Chetty Named Intel Ph.D. Fellow

Marshini Chetty was awarded the Intel Ph.D. Fellowship for the 2010/ 2011 academic year for her work, "Surfacing Invisible Aspects of

Domestic Networks to Affect Engagement with Infrastructure".

Summet Wins National Academies Fellowship

Recent graduate Valerie Summet has been awarded a Christine Mirzayan Science & Technology Policy Graduate Fellowship by the National Academies in Washington, D.C. Run out of the National Academies' Policy and Global Affairs Division, the program is designed to engage its fellows in the analytical process that informs U.S. science and technology policy.

Forte's Wikipedia Paper Earns Citation of Excellence

Emerald Management Reviews awarded a Citation of Excellence for a paper coauthored by Amy Bruckman and former advisee Andrea Forte. The paper, "Decentralization in Wikipedia Governance," examines how Wikipedia's policies for article editing have evolved with the growth and popularity of the online encyclopedia. The paper was published in the summer 2009 issue of the Journal of Management Information Systems.

Georgia Tech Awards

Coffin Wins CETL/BP Outstanding Graduate Student Instructor Award

Ph.D. candidate Jill Coffin won the CETL/BP Outstanding Graduate Student Instructor Award, awarded yearly to one Georgia Tech student instructor.

Anwer Receives HSI George Fellowship

M.S. student Nazneen Anwer was awarded the HSI George Fellowship. The fellowship is given to students who have demonstrated a commitment to the field of Health/Health Systems in their research.

Sigma Xi Best Undergraduate Research Award Goes to Courtney Coons

B.A. Psychology student Courtney Coons (advisor Richard Catrambone) won Tech's 2010 Sigma Xi Best Undergraduate Research Award.

Poole and Wojtan Win CoC Outstanding Graduate Assistants Awards

Erika Poole and Chris Wojtan received the College of Computing Outstanding Graduate Assistant Awards during the CoC Award Ceremony on Apr. 20, 2010.



Ashwin Ram discusses a student's research project at the 2010 UROC Symposium

2010 UROC Symposium

Four undergraduate students of GVVU faculty won awards at the 2010 Undergraduate Research Opportunities in Computing (UROC) Symposium, held Apr. 19, 2010. UROC is a venue sponsored by gifts from Yahoo! and Google where computing undergraduates show off their research. A panel of faculty judges chose winners. People's Choice Awards were selected by popular vote.

Judges' Awards:

2nd Place: Sanjeet Hajarnis "iQuest - Location Based Gaming" Advisor: Mark Riedl

3rd Place: Joshua Moore "Extensions of a System for Robot Affordance Prediction" Advisor: Jim Reh

People's Choice Awards:

1st Place : Sanjeet Hajarnis "iQuest - Location Based Gaming" Advisor: Mark Riedl

2nd Place: Mansi Sharma "Community Mosaic: Finding ways to eat more healthfully in a low-income African American community" Advisors: Beki Grinter & Andrea Grimes

gtRIC 2010 Winners

Several GVVU graduate students took home awards from the Georgia Tech Research & Innovation Conference (gtRIC) 2010. The conference showcased the richness of research being conducted by master's and doctoral students at Georgia Tech. Doctoral student Yevgeniy Medynskiy won one of gtRIC's top prizes, a two-year fellowship worth \$5,000 per year, for his poster presentation "Salud!: A Platform for the Deployment and Testing of Health Self-Management Applications." Also winning \$2,000 travel grants were three more GVVU Ph.D. students: Marshini Chetty, Matthew Flag, and Grant Schindler.

GVVU Sponsors Students Convergence Innovation Competition

The Convergence Innovation Competition (CIC) is an annual event produced by the GT-RNOC. The competition, open to all Georgia Tech students, focuses on innovation in the areas of Converged Services, Converged Media, Converged Networks, and Converged Client and Server platforms and environments. This year GVVU sponsored the Interactive Television category.



Glitch, led by Ph.D. student Betsy DiSalvo, introduces male African-American teens to video game testing

Students in the News

Sparking Interest in CS With Video Game Testing

Research shows that young African American males approach video games differently than do their white peers. Betsy DiSalvo, doctoral candidate in the School of Interactive Computing, has a hunch that she can use black teens' gaming habits to spur interest in computer science, and so far it's working. *Source: PhysOrg.com*

Who's Driving Twitter's Popularity? Not Teens

Twitter's unparalleled explosion in popularity bucks the old model of young people and teens as the earliest adopters of Web-related innovations. Part of this may be due to "tweets" being a "comparatively adult kind of interaction," says Interactive Computing Ph.D. graduate Andrea Forte, whose Georgia Tech dissertation examined how high school students use social media. *Source: The New York Times*

Cell Phone, PDA Et Cetera: A Thumb is Not Enough

Researchers, software developers, and hardware designers presented and discussed the latest research results and ideas for the use of small mobile devices. As one example, researchers from Georgia Tech (Nirmal Patel and James Clawson) presented a Two-Thumb-Chording approach where a character is produced by pressing several keys at once, like playing a chord. It takes some time and effort to master, but text input is clearly faster. *Source: Cellular News.com*

"Techstyle" on Discovery Channel Canada

Scott Gilliland (M.S. CS) and Nicholas Komor's (B.S. ID) garments and accessories with built-in technology were featured on the Mar. 3 edition of the Daily Planet on Discovery Channel Canada. *Source: Discovery Channel*

TechDrawl Interviews GVVU Spin-Out Usable Health

TechDrawl interviewed Jiten Chhabra (M.S. HCI) about his Atlanta-based health and disease intervention company, Usable Health, LLC. The company was founded in 2009 by a team of physicians, computer engineers, and health care business consultants. They have built an innovative product and service that aims to reduce avoidable health costs for individuals

and their employers through software that provides health care advice to users and tracks their compliance with an evidence-based medical protocol over time.

Source: TechDrawl

Chatroulette a Disturbing Craze, Says Mom

Sarita Yardi, a Ph.D. candidate at the Georgia Institute of Technology, says that the idea of showing your face to strangers violates almost all social norms of the offline world. "If someone walked up to you at a cocktail party, stared at you intensely, then simply walked away, you would feel confused and probably offended," she says. Yardi advises parents to think carefully about what material is socially appropriate for their child and to weigh up the risks and rewards. "It's like an online Lord Of The Flies," she says. *Source: IOL Technology, Tonight South Africa*

Source: IOL Technology, Tonight South Africa

Kids Experiment With 'Video Playdates'

Children playing "together" via webcam enjoy richer interaction than those watching television or playing video games with set rules, says Ph.D. candidate Lana Yarosh (HCC). Yarosh worked with Microsoft Research to come up with ways for 7- and 8-year-olds to play with each other more freely "across distance."

Source: CNN.com

SPOTLIGHT:

THE 2009/2010 FOLEY SCHOLARS

The GVVU Center presented Foley Scholar fellowships to Marshini Chetty and Erika Poole, both Human-Centered Computing Ph.D. candidates in the School of Interactive Computing.

The Foley Scholar Endowment is named for Dr. James D. Foley, professor and founder of the GVVU Center. The endowment was established in 2007 by Foley's colleagues and GVVU alumni to honor his significant contributions in the field of computing, his influence on the work of others, and his dedication to the development of new research directions. It awards two graduate fellowships of \$5,000 to exceptional students active in GVVU research.

Marshini and Erika were selected by GVVU's external board from an outstanding group of eight finalists: Betsy DiSalvo, Matt Flag, Andrea Grimes, Thomas Smyth, Erich Stuntebeck, and Sarita Yardi.



The 2009-2010 Foley Scholarship winners and finalists were honored at a reception and dinner co-hosted by GVVU's industrial partner Google on October 14, 2009



Marshini Chetty is a fifth year HCC Ph.D. candidate. She received her masters and bachelors degrees in Computer Science from the University of Cape Town, South Africa in 2002 and 2005. During her dissertation research, she has studied households in Atlanta, Seattle, and Cambridge (UK) to understand how they manage their networked technologies. Currently, she's implementing and evaluating Kermit, a visual home networking tool for

showing households how different people in the home are using network resources. Her aim is to understand the social consequences of introducing real-time resource monitoring tools into the home and to derive design implications for future domestic technologies. Marshini's other interests include creating technologies for environmental sustainability and the field of human computer interaction for international development.



Erika Poole is a sixth year HCC Ph.D. candidate. Her research focuses on how people cope with technological complexity at home. She studies the source of user experience problems with interconnected home technologies and how people share advice with one another to overcome these issues. Through this research she aims to create more effective and enjoyable ways for people to give and receive technical

advice to one another. Erika holds a bachelor degree in computer science from Purdue University and a master degree in computer science from Georgia Tech. In Spring 2010, Erika accepted a faculty position at Penn State University.

Partnership is where value is created and developed. That's the entire premise of GVU. We understand that real progress requires appreciating and leveraging the value of what each partner offers. We welcome and embrace our partnerships with the business community—we believe our mutual success depends on it.

INDUSTRIAL PARTNERS

This is an exciting time in our relationship with the business community. We have several dynamic industrial partnerships—both long-standing and new—and in each of these relationships we are pushing forward the possibilities of what can be done in a mixed business and academic environment. Partnership success can be variously measured by the advancement of research, the development of tangible real-world solutions, and the launch of commercial products. We can proudly say that we've had success on every one of these fronts this year.

We offer unparalleled opportunities for technology companies seeking to benefit from our leading research and practical experience in human-centered design. At the other end of the spectrum, we also offer applied computing solutions that can directly benefit the lives of people. Our partners value our understanding of high-level computing technology, how people interact with it, and how it works in the real world. We have many productive partnerships, including the following and also those featured in our spotlight on augmented reality.



A "mixed reality" workplace, combining the best of the physical and virtual worlds

Steelcase

Steelcase is a global company that designs and provides a comprehensive portfolio of workplace solutions, including interior architecture, furniture, and technology products. Within its research insight-led process focused on understanding the changing nature of work, workers, and workplaces, Steelcase collaborates with GVU to develop an understanding of how digital and physical technologies factor into knowledge work. Considering knowledge creation as a social activity, the partnership with GVU explores how emerging technical capabilities change expectations and enable worker capabilities and how they may be fulfilled within the physical work environment. The collaborative effort has influenced several Steelcase product offerings, recently expanded to consider mixed reality workplaces, combining the best of the physical and virtual worlds.

Motorola

GVU works with Motorola to better understand the role of interactive media in home and mobile environments. This project features unprecedented campus-wide involvement; our researchers as well as the student community at large explore the possibilities. GVU, through our partnership with Georgia Tech CTO Ron Hutchins, offers Motorola a unique living laboratory where the research doesn't just live in the lab, but also in the Georgia Tech community.

GVU is interested in human convergence across multiple genres and devices. Convergence is no longer focused on the "one-box" concept. Instead, it's constructing a new paradigm to understanding how different devices and media converge to create a coherent whole for consumers. Our partnership allows Motorola a unique glimpse into the future of human convergence. Motorola is supplying pre-commercial technology and business content, and GVU is exploring innovative ways to optimize the potential of these new technologies.

Humana

The GVU Center and Humana have worked together on health and wellness research applications since 2007. Our contribution is community-based research, which helps Humana understand the role and design of compelling user experience in healthcare applications.

Humana developed and deployed a health-promoting game to middle schools nationwide called, "American Horsepower Challenge." The game was designed to incentivize middle school students to walk more by giving them a pedometer to create awareness and measure results. Schools with the best results were awarded financial prizes. GVU acted as the impartial researcher of the study examining the design of wellness techniques, physical gaming, social media, and the behavioral outcomes of this country-wide gaming deployment.

Our other projects with Humana include *A Culturally Relevant Mobile Game to Encourage Healthy Dietary Habits* (Beki Grinter), *Dancing in the Streets* (Thad Starner and Ed Price), and *Mobile Health Gaming* (Mark Riedl).

Turner Broadcasting



Tangible Anchoring: Grasping Public Debate for Broadcast project is sponsored by Turner and Google

Turner Broadcasting, as a global news and entertainment leader, knows that consumer-media interaction continues to evolve alongside the technology itself. Turner's partnership with GVU enables it to stay abreast of the latest research in such areas as computational journalism and the use of video games as an engagement paradigm. The relationship with GVU gives Turner valuable insight into the future of media interaction.

BETTER THAN REALITY

This has been a big year for one of the GVU Center's laboratories—the Augmented Environments Lab (AEL). GVU's AEL team has made several notable innovations in augmented reality gaming and content research over the past several years that has set the stage for all that happened this year. Several industrial partners have come forward, eager to further explore the AEL team's work and ideas and support and leverage their future work.

AEL was founded by professor Blair MacIntyre who created a home for collaboration with researchers in computing, digital media, and interactive media with the Atlanta campus of the Savannah College of Art and Design.

The AEL team's developments have kept their research in the news this year, both in industry as well as mass-market media. It's been inspiring for us to see how AEL's projects are redefining the popular conception of computer scientists from geek to cool—riding the wave of new and exciting technology. It is our hope that media exposure like this continues to bring bright students to computing science, and to Georgia Tech in particular.

In October, Georgia Tech awarded the College of Computing Technology "The Fee Award" for MacIntyre to enhance a series of courses dealing with media, graphics, and games that teach students how development is done in these areas from start to finish.

Qualcomm partnership

Qualcomm leverages GVU's research in augmented reality gaming to explore the possibilities of Qualcomm's Snapdragon chipset and state-of-the-art augmented reality software. The AEL team is creating a Qualcomm-dedicated studio environment that will bring GVU researchers and

students in computer science and digital media together with students from the Savannah College of Design to work on this project.

The goal is to expand on the team's breakthrough AR gaming work to reinvent the social experience of traditional board and card games in a multi-player, collaborative computing environment using mobile phones and to create engaging and satisfying hybrid virtual-physical game spaces on Qualcomm's mobile technology platform.

Alcatel-Lucent partnership

Alcatel-Lucent's partnership with GVU is focused on leveraging the open standard-based KHARMA web architecture and the revolutionary Argon browser, developed by the AEL team, that allows easy creation and distribution of augmented reality content for mobile phones.

The goal is to allow complex augmented reality experiences to be created, deployed, and managed by anyone who can create websites for traditional web browsers, and eventually by any content owner using plug-ins to Drupal, Wordpress, and other common content management tools.

GVU's Argon browser will be available as a

Blair MacIntyre talks with two of his students, Yan Xu and Brian Davidson, about ARhrrr, an augmented reality shooter game for mobile camera-phones



free Apple iPhone app in Fall 2010. It is the first browser of its kind that promises to transform how augmented reality content is created and used in the real world.

nVidia partnership

MacIntyre pioneered a joint-classroom experiment with the Savannah College of Art and Design that was designed to bring together students from computer science, digital media, and design. The idea was to engage diversely skilled teams of students with different approaches to problem solving in project-based learning.

nVidia provided MacIntyre with a grant for the expansion and continuation of his novel approach of integrating a studio-style class into a cutting-edge research environment.

National Public Radio

MacIntyre was interviewed by Kathy Lohr on NPR's "All Things Considered" to discuss how he teaches his students augmented reality gaming and content. In the discussion, he also broadened listeners' perceptions of the possibilities that augmented reality and gaming technologies offer the world.

Bloomberg TV's "Innovators" episode

Featured as one of the world's pioneers of augmented reality, MacIntyre provided an overview of the current state of this field.

GVU PARTNERS

Building valuable industry collaborations has long been a cornerstone of the GUV Center. We have a number of options for industry partnership, from participating in our industry affiliates program, engaging in research collaboration with select faculty, to licensing technology and recruiting new college graduates and interns. These partnerships also enable strategic initiatives that would otherwise be difficult to attempt. The following are companies that are currently working on a variety of interdisciplinary projects with select faculty and students across the entire Georgia Tech campus.



PARTNERSHIP BENEFITS AND OPPORTUNITIES

GVU's Industrial Partners program is nationally recognized as one of the most creative and productive programs of its kind. We provide a streamlined, organized venue for collaboration with faculty, students, and researchers from one of the nation's top universities.

Partner involvement with GUV provides numerous benefits and opportunities, including access to the latest academic discoveries, continuous exposure to new ideas, recruiting opportunities, year-round internship programs, and interdisciplinary market reach. Participation in a vibrant academic community provides opportunities for industry experts to participate in GUV's lectures, student groups and classes.

INTERACTIVITY@GT

Each spring GUV and the School of Interactive Computing present INTERACTIVITY@GT, annual showcase of HCI and digital media M.S. students for industry visitors looking to fill spots for internships or post-graduation employment. This year, 29 companies participated in this event, talking to more than 50 students about future career opportunities.



M.S. students (l-r) Deepak Jagdish, Vasudhara Kantroo, Walled Manzoul, Amha Mogus, and Anna Mansour at INTERACTIVITY 2010

Our human-centered approach to computing research is what we do, but it's how we do it that's made us one of the most exciting academic communities in the country. We're delighted with what we can offer Georgia Tech as part of a new strategic direction.

GVU INDUSTRIAL ADVISORY BOARD

Laurie Baird
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Krishna Bharat
Google, Inc.

Kelly Braun
Braun Gordon Research, LLC

Mary Czerwinski
Microsoft Research

Miguel Encarnano
Humana, Inc.

Marc Goodman
Alcatel-Lucent

Mat Hans
DTS, Inc.

Jim Pitkow
Attributor, Inc.

Mike Pellon
Motorola, Inc

Alan Warren
Google, Inc.

Terrence West
Steelcase, Inc.

Jay Wright
Qualcomm

Wayne Wooten
Pixar Animation Studios



GVU AND THE GEORGIA TECH STRATEGIC VISION

Five years ago, the GUV community set several goals that are now coming to fruition. We have doubled the size and increased the diversity of faculty participation across campus. We have embarked on and nurtured many key strategic partnerships with industry. We have reached out to our alumni community. And we have catalyzed creative scholarship and outreach through our mission of unlocking human potential through technical innovation. In sum, we've reached an important milestone where our purpose and impact as an organization is coming into clearer focus within GUV, on Georgia Tech campus, and in the country.

Our human-centered approach to computing research is what we do, but it's how we do it that's made us one of the most exciting academic communities in the US. Our commitment to interdisciplinary research is what sets us apart—and our unrelenting goal is to create an organization aligned for the sole purpose of maximizing this collaborative synergy.

Georgia Tech's recently completed 25-year strategic plan has been uppermost in the minds of the Institute's leadership, and GUV is eager to play its role. The broad impact of this vision will not be fully felt for years, but President Peterson and the strategic planning team have outlined a number of institute-wide initiatives that will have immediate effect. These initiatives involve deeply interdisciplinary research addressing the cross-cutting

impacts of technology on business, policy, and society. It also calls for innovative approaches to education and the creation of "living laboratories;" embedding the research done at Georgia Tech pervasively in our communities, workplaces, and lives.

GVU's mission and actions resonate strongly with these initiatives. As faculty and staff from across campus join efforts with affiliated organizations to formulate the strategic plan, the value of interdisciplinary collaboration is placed even more prominently in the spotlight. GUV, as an Institute-spanning research center focused on the human and societal impacts of technology, is poised to help advance these initiatives. In fact, the Center has already been engaged in presenting its strategic initiatives to President Peterson's cabinet, the Board of Regents, and other internal and external stakeholders. As Georgia Tech sets out to accomplish its vision for the next 25 years, the GUV Center is strongly positioned as a leading research center for the Institute.



President Peterson listens intently to ideas about the future of Georgia Tech

Each year GVU invests in new innovative research initiatives. These investments create a path for external funding as our research prospers.

INNOVATION GRANTS

This year, GVU provided grants to three research teams committed to building on our success in interdisciplinary research and innovation in the human experience of computing. The grants were awarded to emergent areas of academic research where we have strength and seek increasingly visible leadership. In addition, the grants support Georgia Tech's goal of developing communities of interdisciplinary research. Each team, in their own way, embodies a differentiation from other interdisciplinary research enterprises, understanding of how creativity and computing science can work together to solve problems and create new experiences.



Brian Magerko (r) leads the CCC initiative

Creativity + Cognition + Computing

The Creativity + Cognition + Computation (CCC) initiative aims to better understand human creative processes and cognition in order to support the development of new tools to assist creative endeavors such as graphic design and filmmaking, and to build computational systems to generate new artistic creations or approaches to solving problems.

While there are several brilliant researchers independently investigating creativity, the future of this field of research lies in interdisciplinary study. The goal of this initiative is to build academic communities to leverage individual research projects into a recognized, unified, and pioneering whole.

The group has already been instrumental in bringing the ACM Creativity and Cognition Conference to Atlanta in 2012.

The ongoing goal will be to identify the various research being done at Georgia Tech to understand creative people and build creative tools and to develop synergies and collaborative opportunities. The walls between academic fields make it difficult for researchers to get to know each other, but Georgia Tech is leading the way in creating an integrated academic community and putting a face on it, both internally and externally.

Team: Brian Magerko (IAC, team lead), Carl DiSalvo (IAC), Ellen Do (CoA), Jason Freeman (COA), Ashok Goel (CoC), Nancy Nersessian (CoC), Mark Riedl (CoC)

Games@Georgia Tech

Games@Georgia Tech is an initiative to leverage, expand, and promote Georgia Tech's breadth and depth of faculty expertise in video games research and education by integrating all the gaming-related interdisciplinary research across the Georgia Tech campus.

Computer game development is an inherently multi-disciplinary activity. The challenge is aligning as a community to best accomplish it. By further developing our internal community and communications, the initiative hopes to identify natural linkages across departments and complementary work that can serve as the basis for new work and new funding opportunities.

The large number of faculty signed up for this initiative reinforces its need. GVU is participating in the "FutureMedia Fest" conference in October 2010. One of the initiative's major goals at the conference will be to explore new opportunities to build collaboration among the various research disciplines involved in gaming research.

Team: Mark Riedl (CoC, team lead), Ellen Do (COA), Blair MacIntyre (CoC), Celia Pearce (IAC), Aaron Lanterman (CoE), Brian Magerko (IAC), Ashwin Ram (CoC)

UrbanRemix

The Urban Remix project was created to explore community-inspired participatory art experiences using locative media captured by mobile phones. The goal is to develop new technology for making art with locative media and explore urban communities' experience in creating art with it.



People recording city sounds

The computing technology consists of a mobile phone application and a web interface developed by the UrbanRemix team. Using the phones, participants in the project become active collectors of location-coded sound and images in their urban environment, and use the web interface to browse, remix, and share these sounds on an intuitive map, create spatialized compositions of sound, and mix the sounds with music.

In June, DiSalvo, Freeman, and graduate student Stephen Garrett took UrbanRemix to the City Centered Festival in San Francisco, where they asked neighborhood residents and festival visitors to record sounds from the city's Tenderloin neighborhood. After uploading them to the project's website, Berkeley musician Ken Ueno mixed them into a performance piece.

Later that month, they took their project to Atlanta's Art on the Beltline exhibition, an ongoing event through October designed to entice people to experience this 22-mile loop of rail that aims to revitalize city life.

Finally, in July, Atlanta middle school students used UrbanRemix at the Woodruff Arts Center as part of a new initiative between Atlanta Public Schools, the Woodruff Arts Center and GVU.

Team: Carl DiSalvo (IAC, team lead), Michael Nitsche (IAC), Jason Freeman (CoA), Aaron Bobick (CoC), Jay Bolter (IAC)

FEATURED GRANTS

GVU researchers brought in more than \$9.4 million in new research funding this year. These contracts and grants spanned the breadth of GVU's expertise.

Creativity

Jason Freeman: \$762,372

Jason Freeman received a \$762,372 NSF CreativeIT grant for his project *Modeling Musical Improvisation to Support Creativity in Education and Performance*. Co-PI with Parag Chordia, Melody Moore Jackson, and Ge Wang (Stanford).

Ashok Goel: \$768,000

Ashok Goel received a \$768,000 NSF Creative IT grant for three years for his project *Computational Tools for Enhancing Creativity in Biologically Inspired Design*.

Amy Bruckman: \$460,548

Amy Bruckman received a \$460,548 from NSF for her project *Pilot: Supporting and Transforming Leadership in Online Creative Collaboration*.

Learning

Mark Guzdial: \$1,366,579

Mark Guzdial received \$1,366,579 from NSF for his project called *Extending Georgia Computes: A Statewide...* CO PI Amy Bruckman, Barbara Ericson.

Barbara Ericson: \$2,499,996

Barbara Ericson received \$2,499,996 from NSF for her project titled *Operation Reboot: Transforming Unemployed IT Workers into High School Computing Teachers*. CO PI Mark Guzdial.

Ashok Goel: \$1,724,000

Ashok Goel is a CO PI of \$1,724,000 grant received from the Department of Education for the project titled *From the Systems and Cycles: Using Structure-Behavior-Function Thinking as a Conceptual Tool for Understanding Complex Natural Systems in Middle School Science*.

Trust

Beki Grinter, \$395,239

Beki Grinter with CoPI Keith Edwards and Ken Calvert (University of Kentucky) received \$395,239 from the NSF for the NETSE project *Towards Human-Network Interaction*

Persuasion

Ashwin Ram and Mark Riedl: \$350,000

Ashwin Ram and Mark Riedl received a DARPA IPTO \$350,000 contract for *Intel- ligent Authoring Tools for Persuasive Media*.

Health

Elizabeth Mynatt: \$499,354

Elizabeth Mynatt received \$499,354 from NSF for her work in *Making Health Personal: The Emerging Role of Personal Technology*.

Independence

Thad Starner: \$1,500,000

Thad Starner received \$1,500,000 from the U.S. Dept. of Education for his project titled *Smartsign: Learning Sign Language via Mobile Phone*. CO PI Amy Bruckman.

Keith Edwards: \$499,249

Keith Edwards received \$499,249 from NSF for his project titled *Technology at the Margins: The Urban Homeless as a Lens...*

Melody Jackson, \$39,948

Melody Jackson received a pilot grant from the Veterans Administration Medical Center for the project titled *Brain Computer Interfaces for Inducing Brain Plasticity*

FY 2010 EXPENDITURES

In the fiscal year 2010, the GVU Center at Georgia Tech spent over \$6 million in support of GVU research, programs and initiatives. The largest research expense was \$4,809,057 from federal and industry contracts, comprising 80% of expenditures. Additional research expenditures included \$730,238 or 12% from industry partners and foundations, and \$245,847 or 4% from state funds. External relations were \$127,418 or 2% for hosting GVU events, industrial visits, fund raising activities and supporting external communications. Operating expenses were \$88,578, or 2%.

RESEARCH

Research Contracts \$4,809,057

Industry Partners and Foundations \$730,238

State Funds \$245,847

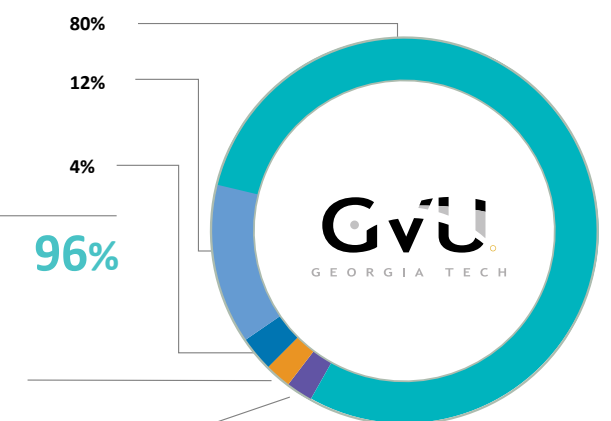
Total Research 96%

OPERATIONS

Operating Expenses 2% \$88,578

EXTERNAL

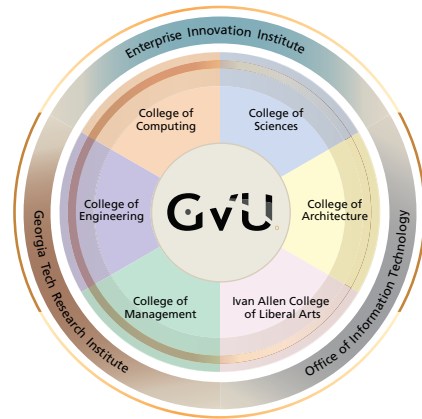
External Relations 2% \$127,418



FACULTY & STAFF

ORGANIZATIONAL CHART

Housed in the College of Computing, GVU is an institute-wide research center comprised of faculty from across the Georgia Tech campus. Faculty names are listed here with color coded blocks representing affiliation to the college in the organizational chart on the right.



GVU FACULTY

GREGORY ABOWD

Ubiquitous computing, mobile computing, human-computer interaction, software engineering

DAVID ANDERSON

Digital signal processing for speech and audio enhancement, signal processing for the hearing impaired, ultra-low power signal processing systems

RON ARKIN

Mobile robots and unmanned vehicles, multi-agent robotics, learning

ROSA ARRIAGA

Developmental psychology, human-computer interaction

AL BADRE

Human factors, usability evaluation, cultural context, HCI MS program

RAHUL BASOLE

Modeling, analysis, and visualization of extended enterprise networks

TUCKER BALCH

Robotics, multi-agent and multi-robot systems, collaborative robot behavior, social insect behavior

MICHAEL BEST

Information and communication technologies for social, economic and political development

AARON BOBICK

Machine perception of human activity, computer vision, cognitive science

IAN BOGOST

Video game criticism, video game rhetoric, computer platforms as media, experimental game design

JAY BOLTER

Augmented Reality design, media theory

MARK BRAUNSTEIN

Health Informatics, electronic management of patient records

AMY BRUCKMAN

Online communities and educational technology

RICHARD CATRAMBONE

Design of learning and training environments, problem solving

PARAG CHORDIA

Music information retrieval (MIR), music cognition, computational music theory, algorithmic and interactive composition, machine hearing

RUSS CLARK

Networking, systems and mobility

GREGORY CORSO

Adaptive automation and virtual reality

FRANK DELLAERT

Computer vision, mobile robotics, probabilistic perception

CARL DISALVO

"The public" and "participation" in contemporary design discourse and practice, theory and criticism, ethnography, participatory design, critical design and technology development

ELLEN YI-LUEN DO

Design computing and cognition, UbiCom, HCI, smart objects, architectural robotics, digital life technology, ambient intelligence

CHUCK EASTMAN

Design environments and databases, CAD, geometric modeling

KEITH EDWARDS

Ubiquitous computing, evolvable and adaptable systems, human-centered approaches to networking

MAGNUS EGERSTADT

Control theory, mobile robots, multi-agent systems

BARBARA ERICSON

Computing outreach for K-12 students and curriculum design for K-12

IRFAN ESSA

Computer vision and robotics, computer graphics and animation, computational photography and video, intelligent and aware environments, digital special effects

ARTHUR D. (DAN) FISK

Skills training, effects of aging on performance and learning

JAMES FOLEY

Computer graphics, human-computer interaction, information visualization, management of R&D, technology transfer

JASON FREEMAN

Algorithmic composition, networked music systems and audience-participative musical environments

MARIBETH GANDY

Wearable and ubiquitous computing, computer vision, HCI, graphics, virtual environments, DSP and computer audio

ERIC GILBERT

Social computing, social network visualization and analysis, social media

ASHOK GOEL

Artificial intelligence, cognitive science, design knowledge, agents

ALEXANDER GRAY

Computational data analysis, data mining

REBECCA GRINTER

Computer Supported Cooperative Work (CSCW); Human Computer Interaction (HCI), security, software engineering, ubiquitous computing

MARK GUZDIAL

Educational technology, project-based and collaborative learning

RAMSAY HALL

Networking and communication technologies, interactive media

CHARLES ISBELL

Artificial intelligence, numerical machine learning, autonomous agents, HCI

MELODY MOORE JACKSON

Direct brain interfaces, biometric interfaces, assistive technology

BRIAN JONES

Human-computer interaction, applications to support healthy aging, interactive media

CHARLIE KEMP

Healthcare robotics with an emphasis on autonomous robot manipulation and human-robot interaction

KENNETH KNOESPEL

Communication, long-distance learning, graphic databases

JANET KOLODNER

Learning sciences and technologies, promoting learning from experience, promoting learning through design, case-based reasoning, case-based decision aiding

TOLEK LESNIEWSKI

CAD, image processing, visual databases, director of IMAGINE group

KAREN LIU

Computer graphics and animation, including physics-based animation, character animation, numerical methods, robotics and computational biomechanics

NICHOLAS LURIE

Interaction between the information environment and decision processes, impact of information presentation on decision processes, and learning

BLAIR MACINTYRE

Augmented reality, distributed virtual environments, ubiquitous computing

BRIAN MAGERKO

Interactive narrative, serious game design development, cognitive architectures, intelligent agents, human-computer interaction

ALI MAZALEK

Tangible user interfaces, physical sensing technologies, collaborative media applications and spaces, tangible narratives, interactive narratives

JANET MURRAY

Interactive narrative and eTV, interactive gaming, encyclopedic media

ELIZABETH MYNATT

Human-centered computing, ubiquitous computing, health informatics

NANCY NERSESSIAN

Human creativity in science, conceptual innovation and change in physics and in physics education

MICHAEL NITSCHKE

Functionality and presentation of real-time 3D virtual environments

JESSICA PATER

Serious gaming, virtual world in education

CELIA PEARCE

Social dynamics and design of massively multiplayer online games, spatial media and virtual reality, game art and independent game development

COLIN POTTS

Design methods for interactive systems, long-term collaboration

W. EDWARD PRICE

Media asset management, high-bandwidth communications, educational media

ASHWIN RAM

Artificial intelligence and cognitive science, specifically: case-based reasoning, game ai, machine learning, natural language processing

JAMES REHG

Computer vision, vision based human sensing

MARK RIEDL

Artificial intelligence, storytelling, and entertainment computing

WENDY ROGERS

Skill acquisition, human factors, training and cognitive aging

JAREK ROSSIGNAC

Geometric representations and algorithms, compression of 3D shapes and animations, sculpting tools for shapes and animations

BILL ROUSE

Organizational transformation, decision making and problem solving, design of organizations and information systems

STEVE RUSHING

Health informatics, network management and engineering

MATT SANDERS

Active Networking

VALERIE SITTERLE

Bioengineering, healthcare informatics

THAD STARNER

Wearable computing, contextual awareness

JOHN STASKO

Software and information visualization, HCI, embodied agents

ANDREA THOMAZ

Artificial Intelligence, Human-Computer/Robot Interaction

GREG TURK

Computer graphics, scientific visualization, computer vision

BRUCE WALKER

Human factors, human-computer interaction, sonification and auditory displays

GIL WEINBERG

New instruments for musical expression, musical networks, machine and robotic musicianship, sonification, music education

DAVID WHITE

Human-computer interaction, human-centered computing

CLAUDIA WINEGARDEN

Industrial/product design, HCI, information visualization, learning environments

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