UF UNIVERSITY of FLORIDA

The Graduate School
Office of the Associate Vice President and Dean

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April 20, 2015

MEMORANDUM

TO: Juan Gilbert
Andrew Banks Family Preeminence Endowed Chair
Associate Chair of Research
Department of Computer & Information Science & Engineering

FROM: Henry T. Frierson
Associate Vice President and Dean
Graduate School

RE: #9694 new Ph.D. degree in Human-Centered Computing

The proposal from the College of Engineering for a new Ph.D. degree in Human-Centered Computing was approved at the April 16, 2015, Graduate Council meeting effective Fall 2016, pending further approvals.

The following individuals and offices will be notified by a copy of this letter so that they can complete their processes to implement the degree:

Gann Enholm, Rimjhim Banerjee-Batist, Stacy Wallace, Graduate School
Diana Hull, University Curriculum Committee and Office of the University Registrar
Marie Zeglen, Office of Institutional Planning and Research
Sue Alvers, Administrative Assistant to Faculty Senate Chair
Wesley Bolch, Associate Dean, College of Engineering

HF/ld

Board of Governors, State University System of Florida

Request to Offer a New Degree Program

(Please do not revise this proposal format without prior approval from Board staff)

University of Florida	**Fall 2016**
University Submitting Proposal	**Proposed Implementation Term**
College of Engineering	**CISE**
Name of College(s) or School(s)	**Name of Department(s)/ Division(s)**
Human-Centered Computing	**Doctor of Philosophy**
Academic Specialty or Field	**Complete Name of Degree**
11.0104	
Proposed CIP Code	

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

Date Approved by the University Board of Trustees		**President**	**Date**
Signature of Chair, Board of Trustees	**Date**	**Vice President for Academic Affairs**	**Date**

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1 in Appendix A. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2 in Appendix A. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

Implementation Timeframe	Projected Enrollment (From Table 1)		Projected Program Costs (From Table 2)				
	HC	FTE	E&G Cost per FTE	E&G Funds	Contract & Grants Funds	Auxiliary Funds	Total Cost
Year 1	12	8.4	55,740	468,215	0	0	468,215
Year 2	20	14					
Year 3	30	21					
Year 4	40	28					
Year 5	50	35	15,057	526,981	0	0	526,981

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal to ensure that all sections have been satisfactorily addressed. Tables 1 through 4 are to be included as Appendix A and not reproduced within the body of the proposals because this often causes errors in the automatic calculations.

INTRODUCTION

I. Program Description and Relationship to System-Level Goals

A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

(a) The proposed degree program is a Doctor of Philosophy

(b) The major will be Human-Centered Computing (HCC). Initially, there will be no tracks, concentrations or specializations within the degree. It is possible that tracks, concentrations or specializations may be added in the future if any emerge as important or useful as the field develops.

(c) The total number of credits for the degree will be 90.

(d) The degree is focused on the design, construction, and evaluation of computational technologies as they relate to the human condition and impacts on society in general. There are currently 3 HCC PhD programs in the United States (University of Maryland Baltimore County, The Georgia Institute of Technology, and Clemson University) Once approved, the University of Florida will be the 4th HCC PhD program in existence. The purpose of the HCC PhD degree is to train a new generation of computing researchers/developers that design, implement, and evaluate computing systems and technologies in real world, or applied, contexts.

HCC PhD degrees exist because the expertise required for this degree does not fit in traditional Computer Science (CS) or Computer Engineering (CE) PhD programs. CS & CE PhD programs have requirements for computer systems and theory. These courses are not required for HCC research.

HCC researchers design user interfaces and implement them using software languages and tools and then evaluate them in context with human subjects. Essentially, HCC is an extremely broad area that encompasses design, implementation and evaluation.

CS & CE do not have any requirements related to the human condition, human subjects research, etc. Some PhD degrees emphasize design, i.e. Industrial Design, Industrial Engineering (Human Factors), etc. There are PhD degrees that emphasize implementation or evaluation of software and/or hardware, i.e. CS & CE. There are also PhD degrees that emphasize evaluation, i.e. Psychology, Social Science, etc.

HCC in an interdisciplinary degree that combines all of these disciplines into a single degree that meets the demands of industry, the academy and government.

Employment opportunities include user experience designer, application developer, usability engineering, to name a few. A search on EmployFlorida.com for "web Designer or graphic designer or usability" yields over 500 jobs in the State of Florida. IT related jobs are in high demand across all business sectors in the State and user experience, web designers/developers, etc. are skills in demand in many of these jobs. Companies are hiring PhDs in many of these jobs because the task of designing, implementing and then evaluating those technologies can't be done by students with a BS degree or, in most cases, a MS degree. These skills requiring training across multiple disciplines and the proposed PhD in HCC gives these students the necessary skills to be competitive for these user experience/web designer/developer positions.

The following are some sample job applications:

UX Designer at Amazon
US, WA, Seattle • Job ID 299890 • Amazon Corporate LLC

Job Description
The Amazon Web Services (AWS) team at Amazon.com is seeking a talented and passionate senior user experience designer to join our growing User Experience Design team. This UX designer will have a significant impact on our business as they lead the design direction for AWS services. The designer will work collaboratively with engineers, product managers, executives, and other designers, leading design throughout the strategy, design, and development lifecycle.

Basic Qualifications

- At least eight years of experience as a user experience designer, interaction designer, information architect, or similar UX-related role.
- An online portfolio or samples of work demonstrating relevant experience
- Fluency in best practices for information architecture and interaction design, user-centered design process, as well as strong knowledge of user experience principles and techniques.
- At least four years of experience creating prototypes or highly detailed wireframes for complex web applications.
- Familiarity with user interface patterns for web.
- Minimum two years of experience using wireframing and prototyping tools for presenting your ideas.
- At least one year of experience working in a collaborative team and directly with developers for implementation of designs.

Preferred Qualifications

- Strong time management skills and the ability to be self-directed when needed.
- Solid written and verbal communication skills with the ability to present a strong rationale for design decisions.
- Familiarity with user interface patterns for native mobile (iOS/Android) and mobile web is a big plus.
- A bachelor's degree in interaction design, human-computer interaction (HCI), or related UX degree is ideal.
- Demonstrated history of acquiring user data (e.g., conducting usability studies, performing user research) is a big plus.
- Ability to prototype in HTML, JavaScript, & CSS is a plus.

UI/UX Designer With Frontend Dev Skills

About Kaggle

Kaggle is the home of data science: the place where data scientists go to learn, do analysis, collaborate, show off their work and establish their credentials. We have the world's largest community of data scientists. Over 250,000 of the world's best data scientists come to Kaggle to compete in competitions to solve complex data problems posted by companies and researchers. The next phase of Kaggle's growth is focused on tools that help our community collaborate and show off their work.

Job Description

As the designer/frontend developer at Kaggle, you will work closely with our data scientists and developers to establish Kaggle as the home of data science. You will be responsible for improving Kaggle's web app and developing tools that allow data scientists to do their analysis, collaborate and show off their work. Success in those role will have a dramatic impact on the way data scientists work.

Primary Responsibilities

- Creating new UI/UX concepts for the Kaggle website and Kaggle collaboration tools
- Communicating and revising these concepts with material such as wireframes and mockups and scoping delivery of components
- Writing markup in HTML and Razor C#, create the corresponding CSS (LESS) and Javascript, and work with the engineering team to launch new concepts to the site
- Maintaining and evolving the Kaggle visual identity

A good candidate should have:

- Experience in UI/UX design on a web-based platform — conceptualizing and designing interfaces, information architecture and user flow
- Experience with HTML, CSS (Less) and Javascript
- Up-to-date knowledge of best practices for web and graphic design
- Favorite tools for producing and sharing mockups and wireframes

The best candidates will also have one or more of the following:

- Experience in data-informed design, utilizing techniques such as A/B and user testing, analytics, etc
- An interest in data and data science
- Skills in/knowledge of the aesthetics of data visualization (e.g., ggplot or d3.js)

Wearables UX Designer/Prototyper
Intel - San Francisco, CA, US

Job Description:
We are looking for an experienced UX Designer with strong interaction design abilities and physical prototyping skills to join our team.

We are looking for individuals who can work both at the conceptual as well as the implementation level, and who are able to work with a small and multi-disciplinary team. The qualified candidate will have the opportunity to contribute to the research phase, prototyping and final production design.

We are a team that believes we achieve our best results when we work together, so candidates must be willing to relocate to Portland, San Francisco or Santa Clara for this position.

Responsibilities Will Include

Developing HW and SW prototypes to quickly explore UX concepts and interactions.
Working with a multidisciplinary team to develop and test concepts
Working with development teams to bring concepts through to the market

Business Group

The New Devices Group is charged with developing products and technologies that will enhance and extend Intel's product portfolio into new areas of computing, including wearable technology. The organization is responsible for rapidly turning brilliant technical and business model innovations into products that shape and lead markets.

Posting Statement

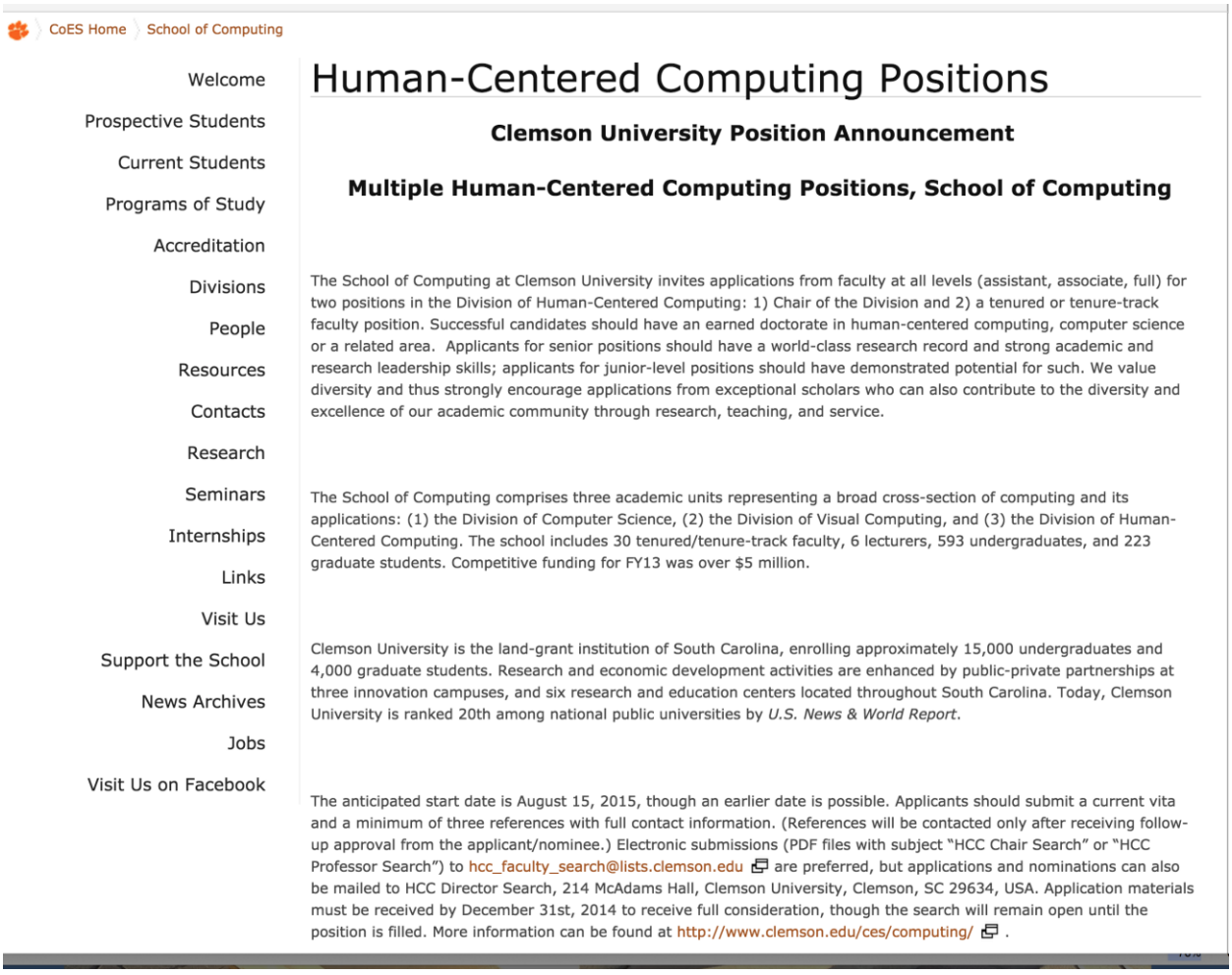
Intel prohibits discrimination based on race, color, religion, gender, national origin, age, disability, veteran status, marital status, pregnancy, gender expression or identity, sexual orientation or any other legally protected status.

Qualifications

Minimum
BA in design discipline
3+ years of hands-on interaction design experience across a number of platforms
Portfolio demonstrating experience in physical prototyping, interaction design and a thorough understanding of good design process
Experience working in multi-disciplinary teams
Experience with rapid prototyping fabrication methods such as 3D printing
Experience working with single board computers (Arduino or similar)
Proficient in Adobe CS and other relevant software packages.

Desired/preferred
Graduate degree
Experience with hardware/software interaction for wearable devices
Good presentation & influence skills
Familiarity with software development in an agile environment.

Clemson University Ad



CoES Home › School of Computing

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Human-Centered Computing Positions

Clemson University Position Announcement

Multiple Human-Centered Computing Positions, School of Computing

The School of Computing at Clemson University invites applications from faculty at all levels (assistant, associate, full) for two positions in the Division of Human-Centered Computing: 1) Chair of the Division and 2) a tenured or tenure-track faculty position. Successful candidates should have an earned doctorate in human-centered computing, computer science or a related area. Applicants for senior positions should have a world-class research record and strong academic and research leadership skills; applicants for junior-level positions should have demonstrated potential for such. We value diversity and thus strongly encourage applications from exceptional scholars who can also contribute to the diversity and excellence of our academic community through research, teaching, and service.

The School of Computing comprises three academic units representing a broad cross-section of computing and its applications: (1) the Division of Computer Science, (2) the Division of Visual Computing, and (3) the Division of Human-Centered Computing. The school includes 30 tenured/tenure-track faculty, 6 lecturers, 593 undergraduates, and 223 graduate students. Competitive funding for FY13 was over $5 million.

Clemson University is the land-grant institution of South Carolina, enrolling approximately 15,000 undergraduates and 4,000 graduate students. Research and economic development activities are enhanced by public-private partnerships at three innovation campuses, and six research and education centers located throughout South Carolina. Today, Clemson University is ranked 20th among national public universities by *U.S. News & World Report*.

The anticipated start date is August 15, 2015, though an earlier date is possible. Applicants should submit a current vita and a minimum of three references with full contact information. (References will be contacted only after receiving follow-up approval from the applicant/nominee.) Electronic submissions (PDF files with subject "HCC Chair Search" or "HCC Professor Search") to hcc_faculty_search@lists.clemson.edu are preferred, but applications and nominations can also be mailed to HCC Director Search, 214 McAdams Hall, Clemson University, Clemson, SC 29634, USA. Application materials must be received by December 31st, 2014 to receive full consideration, though the search will remain open until the position is filled. More information can be found at http://www.clemson.edu/ces/computing/ .

UMBC Ad

Accepting Applications: Tenure-Track Assistant Professor Faculty Position: Human-Centered Computing (HCC)

The Information Systems Department at UMBC invites applications for a tenure-track faculty position at the Assistant Professor level in the area of human-centered computing starting August 2015. Candidates must have earned a PhD in a related field no later than August 2015. Outstanding candidates in all areas of human-centered computing research are encouraged to apply. Ideal candidates will be engaged in research that spans several areas with preference given to those who can collaborate with the current faculty. Candidates should have a strong potential for excellence in research, the ability to develop and sustain an externally funded research program, and the capacity to contribute to our graduate and undergraduate teaching mission.

The Department offers undergraduate degrees in Information Systems and Business Technology Administration. Graduate degree programs, both MS and PhD, are offered in Information Systems and Human-Centered Computing, including an innovative online MS in IS program. Consistent with the UMBC vision, the Department has excellent teaching facilities, state-of-the-art laboratories, and outstanding technical support. UMBC's Technology Center, Research Park, and Center for Entrepreneurship are major indicators of active research and outreach. Further details on our research, academic programs, and faculty can be found at http://www.is.umbc.edu/. Members of under-represented groups including women and minorities are especially encouraged to apply.

Electronic submission of application is required at http://apply.interfolio.com/25742 . All applications must be submitted as PDF Files, which include a cover letter, CV, a one-page statement of teaching interests, a one-page statement of research interests and names and contact information for at least three references. For inquiries, please contact Barbara Morris at (410) 455-3795 or bmorris@umbc.edu. Review of applications will begin immediately and will continue until the position is filled. This position is subject to the availability of funds.

UMBC is an Affirmative Action/Equal Opportunity Employer and welcomes

applications from minorities, women, veterans and individuals with disabilities.

Senior User Experience Designer - Experience Design (XD)
Microsoft - San Francisco, CA, US

Who are we?
We are moving towards a world in which nearly everything around us has been digitized, and in which computing power will be almost limitless. Billions of sensors, screens and devices, in offices and conference rooms, living rooms, cities and cars, on phones, tablets and personal computers, already form a vast network through which endless streams of data flow. Data that can be harvested from the digital interactions between people - and between individuals and their ubiquitously-on devices - to generate extraordinary, actionable insights.
The Experience Design (XD) team within Microsoft's Digital Life & Work group is the face of the new Microsoft: more open-minded than before; more willing to challenge conventional wisdom; more focused on innovation as an imperative, and intent upon delivering genuine value to our customers.
Our charter is to focus on the new scarce commodity, human attention. Our goal is to deliver coherent, intelligent experiences that delight users across devices and platforms, adapting to their individuality and anticipating their needs.

Position Summary
XD seeks a Senior User Experience Designer to join our design-led innovation studio in San Francisco. You will be working alongside some of the best UX and engineering talents in the industry to deliver compelling, lean-forward experiences that fundamentally enrich users' lives, empowering them to do more, know more and be more.

Who are you?
You are first and foremost a designer, with a passion for world-class design, and for creating and driving the creation of solutions that are as distinctively beautiful as they are effective in delivering value to the user. You have an outstanding portfolio of work that speaks to your skill in designing innovative applications that connect users across devices and platforms. You may consider yourself to be primarily a visual designer, an interaction designer or an experience architect, but you have extensive experience in all three. You are highly motivated, curious and tenacious. Above all, you are committed to user-centered design principles and believe the deepest insights come from talking directly to people and by observing their behavior.
You have a keen eye for typography, a strong sense of color, composition and motion, and will be fluent in their effective use on screens of all sizes. You are able to deliver the highest quality concepts, design artifacts and presentation documents quickly under pressure, and can adapt quickly to shifting priorities.
You are a strong team player, and used to working very closely with engineering teams following Agile Development methodology.
You love the challenge of solving problems in new ways, and have an innate ability to think logically but to apply that thinking creatively. You will be a stickler for detail, possess a desire always to deliver the best imaginable experience, and be an advocate of the principle that "good enough" isn't good enough.

Responsibilities
• Produce and direct the production of personas, experience maps, concept storyboards, functional wireframes, visual design comps and other artifacts required to develop and evolve user experience designs
• Plan, lead and facilitate rapid ideation workshops
• Articulate the vision behind a proposed user experience to the project team and stakeholders
• Mentor and direct other members of the design team
• Offer active thought leadership in User Experience issues and trends

Requirements
• Qualified candidates should have around 10 years of experience in consultancy or product design, including information architecture, visual design and interaction design.
• An extensive portfolio of work that demonstrates breadth, visual creativity and proven experience in telling stories, building visual systems, and generating iterative designs that lead to the delivery of truly compelling experiences.
• An exceptional understanding of fundamental design principles, and the ability to apply them consistently and successfully
• Expertise creating a variety of design assets, including user scenarios, user ecosystem diagrams, competitor analyses, wireframes, storyboards and design specifications and guidelines
• Expertise in planning, directing and facilitating user interviews and group ideation workshops
• Experience managing, mentoring and leading multi-discipline design teams
• Demonstrable ability to work confidently and effectively with a design-led engineering team
• Excellent written and verbal communication, presentation and organizational skills

• Power user of Adobe Creative Suite applications, and a confident user of related business and design tools
• Self-motivated, directed, and independent
• A BA/BS or higher degree in Graphic Design, Interaction Design, Industrial Design, Communication Arts, Architecture or related subject.
• Possess deep knowledge and application of user-centered philosophies and interaction design best practices
• Experience with Lean UX models and agile workflows strongly preferred
• Whilst not essential, it would be nice if you had an understanding of HTML5 and CSS.

The following is an older position application from Purdue University

Purdue University School of ECE
Computer Engineering Faculty Position in Human-Centered Computing
The School of Electrical and Computer Engineering at Purdue University invites applications for a faculty position at any level in human-centered computing, including but not limited to visualization, visual analytics, human computer interaction (HCI), and graphics. The Computer Engineering Area of the school (http://engineering.purdue.edu/ECE/Research/Areas/CompEng) has nineteen faculty members who have active research programs in areas including AI, architecture, compilers, computer vision, distributed systems, embedded systems, graphics, haptics, HCI, machine learning, multimedia systems, networking, networking applications, NLP, OS, robotics, software engineering, and visualization. Eligible candidates are required to have a PhD in computer science/engineering or a related field and a significant demonstrated research record commensurate with the level of the position applied for. Academic duties of the position include teaching, advising students, and maintaining a strong research program. Applications should consist of a cover letter, a CV, a research statement, names and contact information for at least three references, and URLs for three to five online papers. Applications should be submitted to https://engineering.purdue.edu/Engr/AboutUs/Employment/Applications. Review of applications will begin on 1 December 2010. Inquiries may be sent to ece-hcc-search@ecn.purdue.edu. Applications will be considered as they are received, but for full consideration should arrive by 1 January 2011. Purdue University is an equal opportunity, equal access, affirmative action employer fully committed to achieving a diverse workforce.

B. Please provide the date when the pre-proposal was presented to CAVP (Council of Academic Vice Presidents) Academic Program Coordination review group. Identify any concerns that the CAVP review group raised with the pre-proposed program and provide a brief narrative explaining how each of these concerns has been or is being addressed.

The pre-proposal was presented to the CAVP Workgroup in February 2015 and there were no formal concerns.

C. If this is a doctoral level program please include the external consultant's report at the end of the proposal as Appendix D. Please provide a few highlights from the report and describe ways in which the report affected the approval process at the university.

An external evaluation of the proposal was requested from Dr. Rebecca Grinter, a Full Professor in the School of Interactive Computing in the College of Computing at Georgia Tech. Dr. Grinter's research is in the fields of human-computer interaction, ubiquitous computing, and computer supported cooperative work. She has published over 80 scholarly articles, served as Papers Chair (2006) & Best Papers Chair (2010) for the Association for Computing Machinery (ACM) Conference on Human Factors in Computing Systems (CHI), the premier conference for human-computer interaction. In 2013 she was elected to the prestigious CHI Academy. In 2010 she was recognized as a Distinguished Alumna of the University of

California, Irvine. At Georgia Tech, Dr. Grinter has served as the Program Coordinator (lead administrator) for Georgia Tech's Human-Centered Computing (HCC) Ph.D. and also as Associate Dean for Graduate Affairs for the College of Computing the academic unit in which the HCC PhD is housed. She has also served as an external reviewer on other HCC PhD programs in the country, specifically, the HCC PhD at Clemson University.

Dr. Grinter expertise in this area, and positive review of this proposal provided guidance to the faculty member, administration and staff through the approval process. She is an expert in this area and qualified to serve as an external reviewer for the proposed HCC PhD for the University of Florida.

In Dr. Grinter's review of the HCC PhD program, she acknowledges the fact that the proposed HCC PhD is consistent with existing HCC PhD programs at Georgia Tech, Clemson, University of Maryland Baltimore County (UMBC) and others.

Some specific highlights of her report are as follows:

1. She says, "the curriculum structure of the University of Florida proposal matches those that I have seen at Georgia Tech, Clemson, UMBC, and so forth."
2. "First, I want to commend the proposal for making an important distinction between Human-Computer Interaction and Human-Centered Computing. While Human-Computer Interaction has a long established history within Computer Science, it is just one discipline that is contained within the broader view of Human-Centered Computing. I particularly like and encourage the focus on policy, which has not been a central part of Human-Computer Interaction. Training graduates who can inform local, State, and National policy is not something that Computing fields have done."

In summary, Dr. Grinter supports the proposal and applauds our efforts to keep the proposed HCC PhD consistent with others. No explicit changes to the proposal were prompted by this external review.

D. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which specific goals the program will directly support and which goals the program will indirectly support (see link to the SUS Strategic Plan on the resource page for new program proposal).

The proposed HCC PhD program will have a sustaining impact on workforce and economic development needs in Florida, across the nation, and across the globe that are consistent with SUS strategic planning goals of excellence, productivity, and strategic priorities for a knowledge economy. The proposed HCC PhD is a STEM discipline. The SUS strategic planning goals speak consistently to increasing the number of STEM graduates and this PhD will contribute to that goal.

As technology continues to be integrated more and more into the daily lives of all people in Florida, our nation, and the planet, there is an increasing need for expertise in HCC. The concept of designing, building and evaluating computing technologies as they relate to people is at the core of the proposed PhD in HCC and this is a necessity in the modern workforce.

Job postings include user experience designer, application developer, usability engineering, to name a few. A search on EmployFlorida.com for "web Designer or graphic designer or usability" yields over 500 jobs in the State of Florida. IT related jobs are in high demand across all business sectors in the State and user experience, web designers/developers, etc. are skills in demand in many of these jobs. Companies are hiring PhDs in many of these jobs because the task of designing, implementing and then evaluating those technologies can't be done by students with a BS degree or, in most cases, a MS degree. These skills requiring training across multiple disciplines and the proposed PhD in HCC gives these students the necessary skills to be competitive for these user experience/web designer/developer positions.

The proposed PhD in HCC will have a significant impact on research funding at the University of Florida. UF recently hired 4 new experts in HCC (see http://news.ufl.edu/2014/05/08/human-centered-

computer-science/). These hires brought with them more than $5 million dollars in external grants. The HCC faculty expect to fund 15 HCC PhD students on grants in year 1 and 20-25 in year 5. HCC researchers work across disciplines and this enables them to expand their funding sources. The NSF, NSA, CIA, FBI, NIH, U.S. Department of Education, corporations and many other agencies have funded HCC research. This program will boost funding within the Department of Computer & Information Science & Engineering (CISE) at UF and across campus through interdisciplinary collaborations.

The HCC PhD program attracts traditionally underrepresented groups to the discipline. Hager and Elton (1971) surveyed college freshmen and Sewell and Martin (1976) surveyed high school juniors. In these two studies, it was found that African-American men expressed a greater interest in social service fields versus White men, who prefer STEM disciplines. Hall and Post-Kammer (1987) reported that African-Americans choose these disciplines (helping professions) because they have a cultural orientation and expectation to help others. STEM disciplines are generally not seen as disciplines that can be used to help others. However, HCC works directly with people and connects with the notion of helping.

Currently, the proposed HCC PhD program would have an estimated enrollment that is majority female and 40-50% underrepresented minorities. The diversity that the proposed PhD brings to UF supports the goals of the SUS strategic plan.

Lastly, the proposed PhD will be the 4th of its kind in the nation. This will provide UF with an opportunity to compete nationally and globally for talent in this new STEM/IT area. It is an area the University of Florida has identified as part of its Preeminence Initiative, and therefore has committed resources to develop.

Hager, P.C. & Elton, C.F. (1971). The vocational interests of Black Males. Journal of Vocational Behavior, 1, 153-158.

Hall, E. R., & Post-Kammer, P. (1987). Black mathematics and science majors: Why so few? Career Development Quarterly, 35, 206-219.

Sewell, T.E. & Martin, R.P. (1976). Racial differences in patterns of occupational choice in adolescents. Pschology in the Schools, 13, 326-333.

E. If the program is to be included in a category within the Programs of Strategic Emphasis as described in the SUS Strategic Plan, please indicate the category and the justification for inclusion.

The Programs of Strategic Emphasis Categories:

1. Critical Workforce:
   - Education
   - Health
   - Gap Analysis
2. Economic Development:
   - Global Competitiveness
3. Science, Technology, Engineering, and Math (STEM)

The proposed HCC PhD has a CIP Code of 11.0104, which fall under the STEM Programs of Strategic Emphasis.

Please see the Programs of Strategic Emphasis (PSE) methodology for additional explanations on program inclusion criteria at the resource page for new program proposal.

F. Identify any established or planned educational sites at which the program is expected to be offered and indicate whether it will be offered only at sites other than the main campus.

The proposed PhD program in HCC will only be offered on the main campus of the University of Florida.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II. Need and Demand

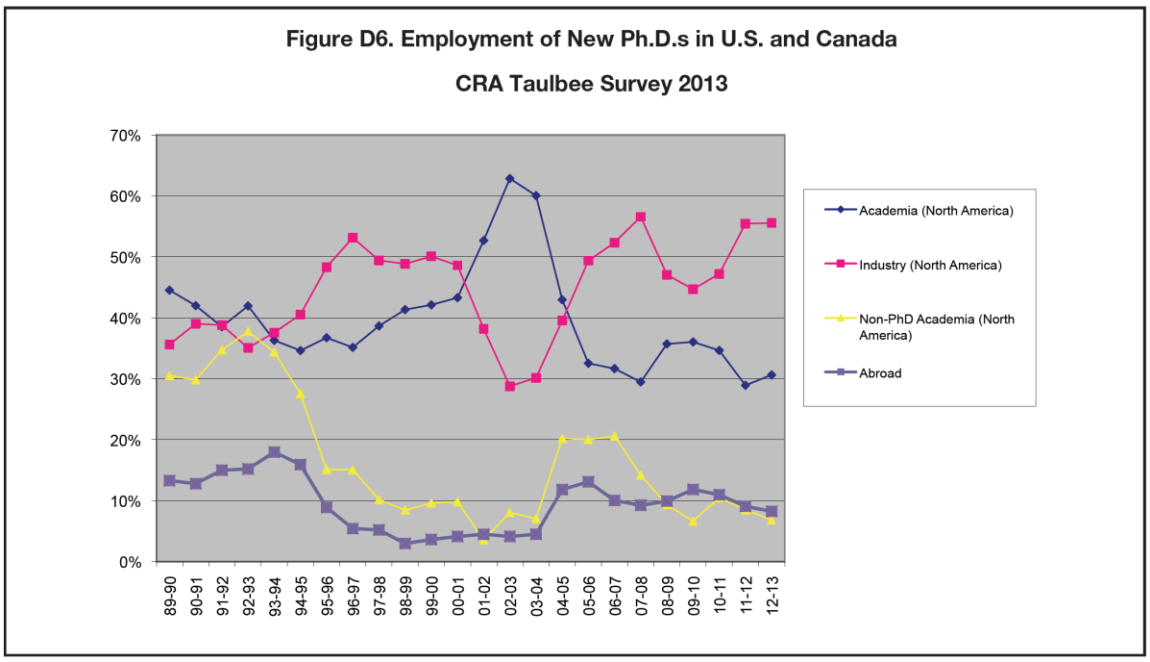
A. Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.

The HCC PhD graduates will pursue careers as academics, as industrial leaders, and as entrepreneurs. Within the academy, the graduates will take positions as professors and research scientists. Some of the industry jobs they will pursue have titles such as *user experience designer*, *application developer*, and *usability engineering*.

National Need: The Computing Research Association (CRA), http://www.cra.org, is an association of more than 200 North American academic departments of computer science, computer engineering, and related fields; laboratories and centers in industry, government, and academia engaging in basic computing research; and affiliated professional societies. CRA's mission is to enhance innovation by joining with industry, government and academia to strengthen research and advanced education in computing. CRA executes this mission by leading the computing research community, informing policymakers and the public, and facilitating the development of strong, diverse talent in the field. Every year the CRA releases the Taulbee Survey.

Taulbee Survey is the principal source of information on the enrollment, production, and employment of Ph.D.s in computer science and computer engineering (CS & CE) and in providing salary and demographic data for faculty in CS & CE in North America. Statistics given include gender and ethnicity breakdowns, http://cra.org/resources/taulbee/

According to the latest Taulbee Survey, there were 61 new PhDs in Human-Computer Interaction, which is where the HCC PhDs will be reported, placed in positions last year. The placement rate was 98% (only 1 was not placed at the time of the survey). 57% (35) of them were placed in industry, government or self-employed. This is consistent with all of the computing/IT PhDs produced. *Figure D6. Employment of New Ph.D.s in U.S. and Canada* below is from the CRA Taulbee Survey showing the majority of the graduates (nearly 60%) are not going to academia; therefore, industry and government entities are hiring our students as interns and coops to then later hire them as full time employees upon completion of their PhD.



State Need: A search on EmployFlorida.com for "web Designer or graphic designer or usability" yields over 500 jobs in the State of Florida. IT related jobs are in high demand across all business sectors in the State and user experience, web designers/developers, etc. are skills in demand in many of these jobs. For example, in 2014, Harris Corporation, located in Melbourne, FL, setup a new User Experience (UX) Division. According to the Harris Corporation website, http://www.harris.com/about/, "Harris is an international communications and information technology company serving government and commercial markets in more than 125 countries. Headquartered in Melbourne, Florida, the company has approximately $5 billion of annual revenue and about 13,000 employees — including 6,000 engineers and scientists. Harris is dedicated to developing best-in-class assured communications® products, systems and services." Harris is moving into User Experience and having the HCC PhD here in Florida will be a valuable resource for Harris to recruit full time employees, interns, and consultants. The HCC PhD program has already met with the UX staff at Harris and they are very supportive of this new degree program.

Local Need:
A newly formed company called the Gainesville Dev Academy aims to provide training to local tech companies with a focus on technologies not taught in the computer science and computer engineering curriculum at UF and other universities. Gainesville Dev Academy conducted a survey of more than 20 local tech employers. The results of the survey are listed below. One major discovery was that 95% of the companies said they are currently seeking or would consider hiring individuals with UI/UX Design skills. These skills are at the core of the proposed HCC PhD program. This demonstrates local demand in the Gainesville area for the HCC skills, but these companies are not unique. There are many companies in need of these skills as they are not commonly taught at other universities.

Gainesville Dev Academy

ABOUT THE GAINESVILLE DEV ACADEMY 2015 EMPLOYER SURVEY

Between March 12th and March 30th, we collected survey results from 20+ of Gainesville's key tech employers. The survey's goal was to help us understand the technical recruiting and candidate sourcing needs at these companies.

WHO WAS PROFILED

We targeted companies that have programmers working in software development positions, or who are going to be actively hiring software devs over the coming months. Collectively, these companies represent 100+ planned technical hires over the next few months alone.

THE RESULTS: WHAT CAN WE DO FOR EMPLOYERS?

- ✓ 70%+ of companies need help training new employees as they are hired
- ✓ 65%+ of companies need help sourcing qualified candidates for technical positions
- ✓ 60%+ of companies are interested in teaching their non-dev staff additional technical skills

THE RESULTS: WHAT SKILLS ARE EMPLOYERS LOOKING FOR?

- ✓ Most companies deem general skill areas as much more important than specific languages or technologies.
- ✓ Web development training is the biggest overall need, ranging from JavaScript to HTML/CSS on the frontend to backend web technologies such as PHP, MySQL, and MongoDB.
- ✓ Companies are very interested in candidates who understand UI/UX design principles.
- ✓ Employers are largely looking for self-driven applicants who manage themselves effectively in a high-pressure environment.
- ✓ Not all employers are equal, and some areas—such as iOS and Android app development—are in high demand amongst some of the largest-growing Gainesville tech companies.

GainesvilleDevAcademy.com
hello@gainesvilledevacademy.com

Gainesville Dev Academy

The Data

% OF COMPANIES WHO WOULD CONSIDER OR ARE CURRENTLY SEEKING CANDIDATES WITH SPECIFIC SKILLS

UI/UX Design	95%	Full Stack Web Dev	85%
Backend Web Dev	85%	Frontend Web Dev	81%
QA Engineering	81%	Systems Engineering	76%
Android App Dev	71%	iOS App Dev	66%
Database Administration	62%	Project Management	62%

% OF COMPANIES WHO PLAN TO HIRE 6+ DEVELOPERS SOON AND WOULD CONSIDER OR ARE CURRENTLY SEEKING CANDIDATES WITH SPECIFIC SKILLS

UI/UX Design	100%	Full Stack Web Dev	86%
Backend Web Dev	86%	Frontend Web Dev	86%
QA Engineering	100%	Systems Engineering	71%
Android App Dev	100%	iOS App Dev	86%
Database Administration	40%	Project Management	71%

% OF COMPANIES WHO DEEM SPECIFIC KNOWLEDGE SOMEWHAT IMPORTANT OR VERY IMPORTANT IN APPLICANTS

HTML/CSS	86%	JavaScript	86%
AngularJS + JS frameworks	81%	MySQL	67%
PHP	57%	MongoDB	57%
Java for Android	52%	.NET	52%
Objective-C	48%	Java	48%
Python	46%	Swift	43%
Ruby	43%	C++	43%
C	38%	ASP	28%

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% OF COMPANIES WHO DEEM SPECIFIC TRAITS VERY IMPORTANT IN APPLICANTS

Self-Discipline	81%
Self-Efficacy	67%
Comfortable with ambiguous tasks	67%
Works well under pressure	67%
Interpersonal Communication	67%
Kindness	62%
Time Management	62%
Creativity	52%
Sense of Humor	38%
Comfortable working to a detailed spec	33%
Small Team Experience	19%
Leadership Experience	14%
Big Team Experience	5%

ADDITIONAL AND COMPANY-SPECIFIC DATA

Dozens of additional data points were collected in this detailed survey, the results of which are too voluminous to be included here. We surveyed about the traits that "make or break" employees, the reasons why staff stay happy and productive, and more.

Out of respect to employers' individual desires for privacy, only aggregate data covering core hiring and training needs are included here. *We also request that you please keep this data analysis private.*

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Gainesville Dev Academy

Conclusions

WEB AND MOBILE DEVELOPERS ARE NEEDED
Many Gainesville tech employers are seeking web and mobile developers, with mobile devs being in more demand from the larger employers, and web devs being more in demand amongst smaller companies.

COMPANIES DESIRE CANDIDATES WHO UNDERSTAND UI/UX PRINCIPLES
Alongside a pressing need for developers are desires for candidates who understand UI/UX design principles, as well as QA engineering.

Therefore, Gainesville Dev Academy plans to incorporate components of these areas into its educational mix in order to produce well-rounded talent that meets employers' needs. Our developers should know enough about UI design to converse effectively with designers, and should be solid enough to fill QA roles in addition to developer roles.

EMPLOYERS DESIRE CANDIDATES WHO CAN THRIVE IN MODERN FAST-PACED WORK ENVIRONMENTS
Perhaps the biggest surprise of this survey was the relative disinterest that employers placed in candidates with team-size experience, comfort working to a detailed spec, and even leadership experience, compared to other factors. Instead of wanting candidates who understand how to fit into a team, employers are seeking developers who can stand up on their own two feet, and who are more comfortable with ambiguity than structure.

WRAPPING THINGS UP...
Gainesville Dev Academy is committed to its mission of empowering the region's technical workforce with the skills necessary to compete on a global scale. We now have a better understanding of which skills are in high demand for our first year of classes, and this data will drive the decision of which courses we teach.

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B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

Currently, there are 12 students that have moved to the University of Florida and are interested in pursuing

this degree. When the HCC faculty moved from Clemson, these students were in the HCC PhD program at Clemson and expressed an interest in finishing their PhD in HCC at UF. This information was collected in conversations with those students and now they are here at UF.

There were 3 HCC faculty members (Drs. Ben Lok, Eakta Jain and Lisa Anthony) here at UF before the Clemson team moved to UF. These HCC faculty members also have PhD students that are likely to move into the HCC PhD program as well. For the purposes of this proposal, the initial 12 students are being counted from those that moved from Clemson with the intent on finishing a HCC PhD at UF. The initial 12 students are 9 female, 8 African-American, and 2 Hispanic. There are also students looking for this degree outside of UF.

This academic year, we had 40 applications to our existing computer engineering PhD program. Six (6) of them requested information about HCC and are likely to pursue the HCC PhD. Of the 6 applicants that were interested in the HCC PhD, 2 of them have been accepted into the HCC PhD program at Georgia Tech. These students made this inquiry based on the hiring of the new HCC faculty and knowing we had a HCC PhD degree at Clemson University.

The new Preeminence hires in HCC have recruited HCC PhD students at their previous institution and the enrollment was at 30 PhD students when they left Clemson University. Currently, the HCC PhD program at Clemson University has 23 HCC PhD students and 7 faculty members. UMBC has 7 HCC faculty members and 20 HCC PhD students. Georgia Tech has 30 faculty members in their School of Interactive Computing in the College of Computing and they have 50 PhD students.

These programs have healthy enrollments and UF will compete for those students and the current estimate is that the program will start with 12-15 PhD students and reach an enrollment of 40-50 within five years based on the HCC faculty's experience in other HCC PhD programs.

C. If substantially similar programs (generally at the four-digit CIP Code or 60 percent similar in core courses), either private or public exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). In Appendix C, provide data that support the need for an additional program.

There are no other HCC PhD programs in the State of Florida in either private or public institutions. No existing program in the State of Florida uses the CIP Code 11.0104. The closest related program is at FSU. FSU has a degree listed under CIP Code 30.3001 called Computational Science. Dr. Gilbert has reached out to Dr. Max Gunzburger at FSU to discuss these details between the proposed HCC PhD and the FSU PhD in Computation Science.

After a careful evaluation of the Computational Science PhD program and discussions with its faculty, it can be observed that the HCC PhD program and Computation Science PhD program are both interdisciplinary PhD programs; however, the HCC PhD program has a core that studies human computer interaction, user interface design and research methods for human subjects. The Computational Science PhD program has a core consisting of Scientific Programming and Applied Computational Science courses. Because of these differences, the newly proposed degree program is truly unique and not replicated in any extent on the UF campus nor across any of the State University System schools/colleges.

HCC PhD degrees exist because the expertise required for this degree does not fit in traditional Computer Science or Computer Engineering PhD programs. CS & CE PhD programs have requirements for computer systems and theory. These courses are not required for HCC research. HCC researchers can design user interfaces and implement them using software languages and tools and then evaluate them in context with human subjects. However, CS & CE do not have any requirements related to the human condition, human subjects research, etc. Essentially, HCC is an extremely broad area that encompasses design,

implementation and evaluation. There are PhD degrees that emphasize design, i.e. Industrial Design, Industrial Engineering (Human Factors), etc. There are PhD degrees that emphasize implementation or evaluation of software and/or hardware, i.e. CS & CE. There are also PhD degrees that emphasize evaluation, i.e. Psychology, Social Science, etc. HCC is interdisciplinary and combines all of these disciplines into a single degree that meets the demands of industry, the academy and government.

D. Use Table 1 in Appendix A (1-A for undergraduate and 1-B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 40 credit hours per year and graduate FTE will be calculated as 32 credit hours per year. Describe the rationale underlying enrollment projections. If students within the institution are expected to change majors to enroll in the proposed program at its inception, describe the shifts from disciplines that will likely occur.

The annual projections are 12, 20, 30, 40 and 50 for the next 5 years. We currently have 12 PhD students on campus that have expressed an interest in the HCC PhD program. These students were direct transfers from the previous institution of the HCC Preeminence hires. Furthermore, there are new students that have taken classes with the HCC faculty members at UF and those students have expressed an interest in the HCC PhD. These classes have enrollments above 20 with the primary core class, Human-Computer Interaction, having an enrollment above 80. With these students that are currently on campus, we believe we will have an initial class of 12-20 students. In the following years, we have noticed students at other institutions expressing an interest in joining our laboratories for the HCC PhD. This year, we had 6 students express an interest in joining a HCC PhD program at UF. We believe the enrollment will reach 40-50 PhD within 5 years given the interest from students that noticed the addition of the new HCC Preeminence Initiative faculty members.

E. Indicate what steps will be taken to achieve a diverse student body in this program. If the proposed program substantially duplicates a program at FAMU or FIU, provide, (in consultation with the affected university), an analysis of how the program might have an impact upon that university's ability to attract students of races different from that which is predominant on their campus in the subject program. <u>The university's Equal Opportunity Officer shall review this section of the proposal and then sign and date Appendix B to indicate that the analysis required by this subsection has been completed</u>.

The HCC faculty have met with the Department of Computer & Information Sciences (CIS) at FAMU. The faculty have a history of working together through NSF grants. The FAMU CIS and the new HCC Preeminence faculty members are in the initial stages of establishing a relationship for collaboration between the two programs. The faculty members hired from the Clemson program have a history of recruiting members of underrepresented groups, specifically African-Americans. Currently, of the 12 students that will transfer into the HCC PhD program, there are 1 Hispanic male, 6 African-American females, 3 African-American males, and 2 Caucasian females. The discipline of HCC attracts members of underrepresented groups given the applied nature of the discipline, see section I.D. This program is not a duplication of a program at FAMU or FIU and, therefore, the program will not compete with FAMU or FIU, but instead, it will work directly with these institutions to grow underrepresented students' participation in STEM/IT in the SUS.

III. Budget

A. Use Table 2 in Appendix A to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 in Appendix A to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.)

There are 9 HCC faculty members. The HCC faculty members, will teach the HCC core courses and advise the HCC PhD students. Therefore, the new costs associated with the new HCC PhD are minimal. Table 2 in Appendix A shows the projected costs as they are fully covered with the hiring of the new HCC faculty members and the current HCC faculty members that were already here at UF. The College of Engineering has already committed $2,590,213 towards Human-Centered Computing in new hires, startup packages, graduate students, etc. through the Preeminence Initiative in the HCC area. The following website provides more information on the Preeminence Initiatives at UF http://news.ufl.edu/archive/2014/05/experts-on-human-centered-computing-are-coming-to-uf.html and https://www.eng.ufl.edu/research/strategic-research-areas/

B. Please explain whether the university intends to operate the program through continuing education on a cost-recovery basis, seek approval for market tuition rate, or establish differentiated graduate-level tuition. Provide a rationale for doing so and a timeline for seeking Board of Governors' approval, if appropriate. Please include the expected rate of tuition that the university plans to charge for this program and use this amount when calculating cost entries in Table 2.

The proposed degree program will not be operated through continuing education on a cost-recovery basis.

C. If other programs will be impacted by a reallocation of resources for the proposed program, identify the impacted programs and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).

The proposed HCC PhD program does not have any impact on existing programs. There is a benefit for undergraduates to broaden their perspectives for research. Currently, there is an undergraduate summer research program in HCC under the direction of Dr. Juan E. Gilbert. Dr. Gilbert is the primary investigator for the National Science Foundation (NSF) funded Institute for African-American Mentoring in Computing Sciences (iAAMCS, pronounced 'i am c s').

The website for iAAMCS is http://www.iAAMCS.org. iAAMCS has a summer research program with the Computing Research Association's Committee on the Status of Women in Computing Research (CRA-W) called the Distributed Research Experiences for Undergraduates (DREU). See https://parasol.tamu.edu/dreu/

The DREU program matches prospective mentors with mentees from underrepresented groups in computing. The DREU program has a very successful track record of getting students from underrepresented groups to pursue graduate education.

D. Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).

None.

E. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

As a PhD program, students will be supported primarily on external research grants and contracts. Some students will receive teaching assistantships (TA) as well. Currently, the prospective HCC PhD students have the following fellowships:

1. Three NSF Graduate Research Fellowship (GRF)
2. Six GEM (Graduate Engineering Minority) Fellowships
3. One Bill & Melinda Gates Scholar
4. One Generation Google Scholarship Recipient

Through the Preeminence Initiative the 4 HCC faculty members that moved to UF brought with them more than 18 PhD students, 2 postdoc researchers and more than $5 million in grant funding. The HCC faculty members have extensive funding records, see the attached resumes. HCC faculty have received funding from the National Science Foundation (NSF), Federal Bureau of Investigation, Army Research Lab, National Institutes of Health, and other foundations and government agencies. The HCC faculty members have also received funding from industry partners such as BMW, Intel, TEQGames and others. The HCC faculty members will continue to grow their relationships with industry partners here in Florida to gain additional funding for students.

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Tables 1 and 2 in Appendix A, and the supporting narrative for "Need and Demand" to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.

CISE PhD graduates in Human-Centered Computing (HCC) will be successfully employed in academic faculty positions, industrial research positions, product development, and national research and development laboratories.

As previously mentioned, Human-Computer Interaction (HCI) and HCC have been successfully placed in jobs industry, but the academy as well, see II.A and the Figure D6 from the CRA Taulbee Survey. There is a growing demand for people with these skills at the PhD level. Google, Intel, Apple, Harris Corporation and many others all have User Experience positions and hire graduates at the PhD level in HCC from Georgia Tech, Clemson, UMBC, Carnegie Mellon and now UF.

Within the State of Florida, there are many jobs available for graduates with these skills. Harris Corporation is an example of a large company looking for these skills as they have created a new User Experience division and a facility to support this work. There are at least 12 current CISE PhD students that are committed to the HCC PhD. These students came from Clemson University with several of the current HCC faculty members. Therefore, these students have already committed to the HCC PhD.

V. Access and Articulation – Bachelor's Degrees Only

A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a separate request to the Board of Governors for an exception along with notification of the program's approval. (See criteria in Board of Governors Regulation 6C-8.014)

N/A.

B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see link to the Common Prerequisite Manual on the resource page for new program proposal). The courses in the Common Prerequisite Counseling Manual are intended to be those that are

required of both native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation. The common prerequisites and substitute courses are mandatory for all institution programs listed, and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as "limited access."

If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional "track" of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

N/A

C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that Florida College System transfer students are not disadvantaged by the Limited Access status. NOTE: The policy and criteria for Limited Access are identified in Board of Governors Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

N/A

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see link to the Statewide Articulation Manual on the resource page for new prSecogram proposal). List the prerequisites, if any, including the specific AS degrees which may transfer into the program.

N/A

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan (see link to the SUS Strategic Plan on the resource page for new program proposal).

The proposed HCC PhD program aligns well with both the SUS strategic plan, see section I.E, and the UF mission. The proposed HCC PhD will increase diversity in an area of STEM/IT, it will broaden the skills of future STEM/IT employees, it will advance research in an area of national and global need, it will provide solutions to societal issues, and it will raise the prestige of the UF as the program increases its ranking in this area.

The missions of the CISE Department is "The mission of the Computer & Information Science & Engineering Department is to educate students, as well as the broader campus community, in the fundamental concepts of the computing discipline; to create and disseminate computing knowledge and technology; and to use expertise in computing to help society solve problems." The HCC PhD aligns with this mission by providing education and also using computing to help solve societal problems. The research

agenda in HCC is applied and addresses issues in Cybersecurity, Voting Technologies, Learning, and more.

B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.

The proposed HCC PhD program will make interdisciplinary connections with the College of Education through learning technologies, the UF Transportation Institute through user experience and driver distraction research, Cybersecurity researchers through biometrics, English, History and the Libraries through games research, the College of Business through entrepreneurship and the College of Medicine through health informatics. The HCC PhD program connects people and technology and this provides interdisciplinary collaborations across the university. For example, Dr. James Oliverio, Director of the Digital Worlds Institute, held a reception for the HCC faculty that has resulted in several collaboration opportunities in games related research for learning. Dr. Carole Beale, Director of the Online Learning Institute at UF, has submitted a proposal to the Institute of Education Sciences with Dr. Juan E. Gilbert as a CoPI. Drs. Janice Krieger and Sri Kalyanaraman in the College of Communications and Journalism have established collaborations with HCC faculty to share research facilities and submit joint proposals. These are just a few examples of collaborations that are happening with the HCC faculty.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology in table format of the activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.

In April 2014, the College of Engineering at UF hired 4 new HCC faculty members under the Preeminence Initiative, http://news.ufl.edu/archive/2014/05/experts-on-human-centered-computing-are-coming-to-uf.html. The researchers had set up a successful HCC PhD program at Clemson University and naturally, the researchers decided to create a HCC PhD program at UF. The process began with Dr. Juan Gilbert, the primary lead for the proposal, meeting with the HCC faculty to establish the HCC PhD program criteria. There were multiple meetings from April to August. The proposal was presented three time to the faculty in the CISE department and approved on October 30, 2014. The HCC PhD proposal has also been approved by the College of Engineering and the Office of Institutional Planning and Research.

Planning Process

Date	Participants	Planning Activity
April – August 2014	HCC Faculty; Drs. Juan Gilbert, Eakta Jain, Lisa Anthony, Christina Gardner-McCune, Kyla McMullen, Damon Woodard	Discussions on the criteria for the HCC PhD program.
September 10, 2014	Dr. Juan Gilbert	Presented the HCC PhD proposal to the CISE Department Curriculum Committee
October 3, 2014	Dr. Juan Gilbert	Presented the revised HCC PhD proposal to the CISE Department Curriculum Committee
October 30, 2014	Dr. Juan Gilbert and CISE Faculty	CISE Department voted to approve the HCC PhD proposal
December 15, 2014	Dr. Juan Gilbert and College of Engineering Curriculum Committee	Approve HCC PhD proposal
December 16, 2014	UF Office of Institutional Planning and Research	HCC PhD proposal approved
December 16, 2014	Wesley E. Bolch, PhD, PE Associate Dean for Academic Affairs College of Engineering University of Florida	HCC proposal submitted for External Review

December 18, 2014	Dr. Rebecca E. Grinter, Professor School of Interactive Computing College of Computing Georgia Tech	External review returned to Dr. Wes Bolch
February 2015	CAVP Workgroup	HCC PhD pre-proposal approved

Events Leading to Implementation

Date	Implementation Activity
Summer 2014	UF hires Dr. Juan Gilbert and 3 other HCC faculty members from Clemson University. These hires, plus the existing 3, brought the HCC core faculty to 7. Two additional faculty members have affiliated with the HCC PhD, bringing the total to 9.
Fall 2014	Advertise and survey existing and prospective students on the HCC PhD program. There are at least 12 HCC PhD students to start the program.
Spring 2015	Approvals and Notifications by AP for Academic and Faculty Affairs Graduate Council University Curriculum Committee Notified Faculty Senate Steering Committee Faculty Senate Academic Affairs Board of Trustees
Summer 2015	Board of Governors Academic Affairs Notified Graduate School Notified Office of the Registrar OIPR Notified College Notified SACS Notification
Fall 2016	Begin accepting students into new program. (Requires application and web site revisions)

VII. Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

The BS computer engineering program, which is jointed offered by CISE and the Department of Electrical and Computer Engineering, is accredited by ABET. The most recent accreditation review occurred in Fall of 2012. No deficiencies of weaknesses were indicated. This BS program will be one key source of student recruits to the PhD in HCC. UF was also re-accredited by the Southern Association of Colleges and Schools Commission on Colleges in 2014 and there were no deficiencies noted.

VIII. Curriculum

A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor's degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

Students that obtain the HCC PhD will have the following learning outcomes:

1. Student will be capable of conducting HCC research, including publishing.
2. Students will be capable of creating user interface designs.

3. Students will be capable of building software applications.
4. Students will be capable of evaluating software applications and other technologies with human subjects.

B. Describe the admission standards and graduation requirements for the program.

To receive full admission to graduate study in human-centered computing (HCC), a student must have completed an undergraduate degree from a regionally accredited institution or equivalent, and have taken computer programming courses through data structures. Data structures are a topic of computer science (CS) typically taught at the undergraduate level in a sequence of CS 1, CS 2 and sometimes, CS 3, depending on the specific department. An applicant with minimal deficiencies may be admitted with prerequisites, while one with several deficiencies may be required to satisfactorily complete prerequisite work as a non-degree student prior to admission as a graduate student. Students are not required to have a computer science degree. Each student will be reviewed for their qualifications as they relate to the field of HCC. The students must meet the minimum general graduate school requirements:

- GPA: B for all upper-level courses
- GRE: see CISE Department requirement below
- TOEFL: 550 on paper-based; (213 on computer-based; 80 on Internet-based). Applicants from India are exempt from the TOEFL (see a list of other countries that are exempt at http://graduateschool.ufl.edu/admission/english-exemption-countries). The University of Florida's school code for submission of TOEFL scores is 5812.
- You may substitute for TOEFL with:
    - IELTS with a minimum score of 6; or
    - MELAB with a minimum score of 77.

The majority of our accepted students have an undergraduate GPA of at least 3.3/4.0.

- GRE: GRE scores will be used in the context of a holistic credential review process. A strong performance is expected. For reference, the past year's averages were: 153 verbal, 164 quantitative, and 317 total (verbal and quantitative.) NOTE: See the most recent Concordance Table, published by ETS, for comparable scores from the older GRE test format. The University of Florida's school code for submission of GRE scores is 5812.
- GRE scores are valid for 5 years only.
- TOEFL: 600 (250 computer-based; 95 internet-based). Applicants from India are exempt from the TOEFL (see a list of other countries that are exempt, http://graduateschool.ufl.edu/admission/english-exemption-countries). The University of Florida's school code for submission of TOEFL scores is 5812.
- You may substitute for TOEFL with:
    - IELTS with a minimum score of 7; or
    - MELAB with a minimum score of 90.

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

To receive full admission to graduate study in human-centered computing (HCC), a student must have completed an undergraduate degree from a regionally accredited institution or equivalent, and have taken computer programming courses through data structures. Data structures are a topic of computer science (CS) typically taught at the undergraduate level in a sequence of CS 1, CS 2 and sometimes, CS 3, depending on the specific department. An applicant with minimal deficiencies may be admitted with prerequisites, while one with several deficiencies may be required to satisfactorily complete prerequisite work as a non-degree student prior to admission as a graduate student. Although formal course requirements for the PhD degree are minimal, a typical program requires two to four years of study beyond the MS

degree. Each candidate is required to pass a comprehensive qualifying examination, a dissertation proposal, and a defense of the dissertation.

Requirements for Awarding the HCC PhD Degree

- 90 credit hours beyond the Bachelor's degree. (May include 30 hours from Master's program)
- 4 supervisory committee members (1 member from outside CISE)
- A Ph.D. qualifying exam
- Ability to pursue research (typically demonstrated by a research publication)
- A dissertation proposal and oral defense on a specific topic
- A dissertation
- A dissertation defense
- 5 years limit for PhD from admission to candidacy

PhD Student w/ prior Master's	PhD Student w/o prior Master's	
credit hours	**credit hours**	**TYPE**
30	n/a	from prior Master's degree (maximum allowed)
9	9	**Program Core** 3 hours of CAP 5XXX User Experience Design (in the approval process) 3 hours of CAP 5100 Human-Computer Interaction 3 hours of CAP 5XXX Research Methods in Human-Centered Computing (in the approval process)
9	9	**CISE required graduate-level courses from the list below.** CAP 5100 Human-Computer Interaction (3) CAP 5416 Computer Vision (3) CAP 5510 Bioinformatics (3) CAP 5515 Computational Molecular Biology (3) CAP 5635 Artificial Intelligence Concepts (3) CAP 5705 Computer Graphics (3) CAP 5805 Computer Simulation Concepts (3) CAP 6402 Aesthetic Computing (3) CAP 6516 Medical Image Analysis (3) CAP 6610 Machine Learning (3) CAP 6615 Neural Networks for Computing (3) CAP 6617 Advanced Machine Learning (3) CAP 6685 Expert Systems (3) CAP 6701 Advanced Computer Graphics (3) CDA 5155 Computer Architecture Principles (3) CDA 5636 Embedded Systems (3) CDA 6156 High Performance Computer Architecture (3) CEN 5035 Software Engineering (3) CEN 6070 Software Testing and Verification (3)

		CEN 6075 Software Specification (3) CIS 6930 Special Topics in CIS (3; max: 9) CIS 6935 Graduate Seminar (1) CNT 5106C Computer Networks (3) CNT 5410 Computer and Network Security (3) CNT 5517 Mobile Computing (3) CNT 6107 Advanced Computer Networks (3) CNT 6885 Distributed Multimedia Systems (3) COP 5536 Advanced Data Structures (3) COP 5555 Programming Language Principles (3) COP 5615 Distributed Operating System Principles (3) COP 5618 Concurrent Programming (3) COP 5625 Programming Language Translators (3) COP 5725 Database Management Systems (3) COP 6726 Database System Implementation (3) COP 6755 Distributed Database Systems (3) COT 5405 Analysis of Algorithms (3) COT 5442 Approximation Algorithms (3) COT 5520 Computational Geometry (3) COT 5615 Mathematics for Intelligent Systems (3) COT 6315 Formal Languages and Computation Theory (3)
9	9	**Cognate Area** (focused group of related graduate courses in a specific area and approved by the student's committee)
15-18	45-48	In addition to the courses listed below, other graduate-level courses excluding courses numbered 6971, 7979, or 7980. See cognate course listing for additional examples. CIS 6905 Individual Study CIS 6910 Supervised Research CIS 6930 Special Topics in CIS
12-15	12-15	CIS 7980 and CIS 7979 - research for doctoral dissertation and advanced research
90	90	TOTAL (minimum)

HCC PhD Qualifying Exam

Prior to taking the qualifying exam, students must pre-qualify by taking at least 2 out of the 3 core courses and obtaining a 3.4 GPA. The PhD qualifying examination is a two-part written exam and is administered by a faculty committee that is relevant to the selected exam area. The two qualifying exam areas will be selected from the existing PhD qualifying exam areas within the CISE department.

Students must take the examination for the first time, no later than their 5th semester. They may retake a failed examination once, within one year.

D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

Note: Courses within the HCC PhD core are designated by **(HCC)**

Student without a Master's degree:

	Year 1	Year 2	Year 3	Year 4	Year 5
Fall Semester	-User Experience Design **(HCC)** -Grad Electives (6 hours)	-Qualifying Exams -CISE Elective -Grad Electives (6 hours)	-Cognate Electives (6 hours)	Grad Electives (12 hours) Research Hours	Grad Electives (12 hours) Research Hours
Spring Semester	-HCI **(HCC)** -Research Methods **(HCC)** -Grad Electives (6 hours)	-CISE Electives (6 hours) -Grad Electives (6 hours)	-Cognate Elective -Grad Electives (6 hours)	Grad Electives (6 hours) Dissertation Proposal	Dissertation Defense
Summers					

Student with a Master's degree (30 credit hours credit for Master's degree):

	Year 1	Year 2	Year 3	Year 4	Year 5
Fall Semester	-User Experience Design **(HCC)** -Grad Electives (9 hours)	-Qualifying Exams -CISE Elective -Grad Electives (6 hours)	-Cognate Electives (6 hours) Grad Electives (3 hours) Dissertation Proposal	Dissertation Defense	
Spring Semester	-HCI **(HCC)** -Research Methods **(HCC)** -Grad Electives (6 hours)	-CISE Electives (6 hours) -Grad Electives (6 hours)	-Cognate Elective Research Hours		
Summers					

E. Provide a one- or two-sentence description of each required or elective course.

Program Core - 9 hours

CAP 5XXX User Experience Design (currently in approval process) (3)
Introduces methods and tools used in User Experience Design (UXD): the early stages of software design focused on meeting user needs. Key concepts include user research, contextual design, design thinking, ideation, iterative design, prototyping, and design documentation. Software tools used in industry are used in class projects.

CAP 5100 Human-Computer Interaction (3)
Prereq: COP 3530, and any one programming course (CGS 2414, CGS 3460 or CGS 3464).

Topics related to interaction with technology, including interface design, software tools, 3-D interaction, virtual environments, interaction devices, collaboration, and visualization.

CAP 5XXX Research Methods in Human-Centered Computing (currently in approval process) (3)
Introduces the fundamental methods and techniques to collect data from humans for building and evaluating technologies, including experimental design, types of variables, types of errors, hypothesis testing, survey design, behavioral and psychophysical methods.

CISE Required Courses 9 hours from the list below

CAP 5416 Computer Vision (3)
Prereq: MAC 2312, CGN 3421 or C-language.
Introduction to image formation and analysis. Monocular imaging system projections, camera model calibration, and binocular imaging. Low-level vision techniques, segmentation and representation techniques, and high-level vision

CAP 5510 Bioinformatics (3)
Prereq: COP 3504 or equivalent.

Basic concepts of molecular biology and computer science. Sequence comparison and assembly, physical mapping of DNA, phylogenetic trees, genome rearrangements, gene identification, biomolecular cryptology, and molecular structure prediction.

CAP 5515 Computational Molecular Biology (3)
Algorithms related to molecular biology. Sequence comparisons, pattern matching, pattern extraction, graph techniques in phylogeny construction, secondary structure prediction, multiple sequence alignment, contig search, DNA computing, computational learning theory, and genetic algorithms.

CAP 5635 Artificial Intelligence Concepts (3)
Prereq: COP 3530
Heuristic search, game theory, knowledge representation, logic, machine learning, AI languages and tools. Applications such as planning, natural language understanding, expert systems, and computer vision

CAP 5705 Computer Graphics (3)
Prereq: COP 3530
Display device characteristics; system considerations, display algorithms. Curve and surface generation. Lighting models and image rendering.

CAP 5805 Computer Simulation Concepts (3)
Prereq: COP 3530
Introduction to concepts in continuous and discrete simulation. Emphasis on fundamental concepts and methodology, using practical examples from a wide variety of disciplines.

CAP 6402 Aesthetic Computing (3)
Prereq: COP 5705, CAP 5805

Principles of artistically motivated, personalized representations of formal model structures in computing and mathematics.

CAP 6516 Medical Image Analysis (3)
Image formation, reconstruction mathematics (Fourier slice theorem, Abel, Hankel and Radon transforms), PDE-based denoising and segmentation, multidimensional clustering algorithms, iso-surface extraction, basic differential geometry of curves and surfaces, multidimensional splines, active 2D/3D models, image matching/registration with application to multimodal co-registration.

CAP 6610 Machine Learning (3)
Prereq: CAP 5615
Review of attempts, within the artificial intelligence community, to construct computer programs that learn. Statistical pattern recognition with its applications to such areas as optical character recognition. Inductive learning, automated discovery.

CAP 6615 Neural Networks for Computing (3)
Prereq: CAP 5635
Neural network models and algorithms. Adaptive behavior, associative learning, competitive dynamics and biological mechanisms. Applications include computer vision, cognitive information processing, control, and signal analysis.

CAP 6617 Advanced Machine Learning (3)
Prereq: CAP 6610
Advanced concepts in developing computer programs that learn and improve with experience. Emphasis on methods based on probability, statistics, and optimization.

CAP 6685 Expert Systems (3)
Prereq: CAP 5635
Production systems, meta-knowledge, heuristic discovery, in-depth examination of several expert systems including TEIRESIAS, AM, DENDRAL, MYCIN, IRIS, CASNET, INTERNIST, BACON, PROSPECTOR.

CAP 6701 Advanced Computer Graphics (3)
Prereq: CAP 4730 or CAP 5705 or consent of instructor
Curved surface representations, representation and visualization of higher-dimensional fields, advanced rendering, collision detection and collision response, and scene navigation in context of high-level graphics environments.

CDA 5155 Computer Architecture Principles (3)
Prereq: CDA 3101, COP 3530, and COP 4600
Fundamental design issues of processor and computer architecture, a variety of design approaches for CPU, memory, and system structure.

CDA 5636 Embedded Systems (3)
Prereq: CDA 3101 and knowledge of programming and data structures
Design and verification of low-cost, high-performance, low-power, and reliable embedded systems. The course covers all aspects related to embedded systems design including modeling,

specification, exploration, estimation, optimization, synthesis, and verification of both software and hardware (analog as well as digital components) in embedded systems.

CDA 6156 High Performance Computer Architecture (3)
Prereq: CDA 5155, COP 5615

Design and evaluation of instruction-level (superscalar, superpipeline) and task-level (fine and coarse-grained) parallel architecture. Language and operating system support for instruction and task scheduling and task synchronization.

CEN 5035 Software Engineering (3)
Prereq: COP 3504 and COT 3100
Topics in projects organization, specification techniques, reliability measurement, documentation.

CEN 6070 Software Testing and Verification (3)
Prereq: CEN 5035
Concepts, principles, and methods for software testing and verification. Topics include human and machine-based testing strategies, formal proofs of correctness, and software reliability.

CEN 6075 Software Specification (3)
Prereq: CEN 5035
Concepts, principles, and methods for practical specification. System modeling, requirements exploration, validation and prototyping, and documentation techniques.

CIS 6930 Special Topics in CIS (3; max: 9)
Prereq: vary depending on topics

CIS 6935 Graduate Seminar (1)
Prereq: graduate status in CIS. M.S. students may take 1 time toward M.S. degree; Ph.D. students must take 3 times toward Ph.D. degree
Presentations by visiting researchers, faculty members, and graduate students.

CNT 5106C Computer Networks (3)
Prereq: CEN 4500C and COP 4600
The course covers the design, implementation and internals of modern computer networks. While all layers will be introduced, the layers below the Application Layer will be the main focus. The main effort will be spent on the design issues for Transport Layer, Network Layer, Data-Link and MAC Layer, and other related topics.

CNT 5410 Computer and Network Security (3)
Prereq: COP 3530, COT 5405; coreq: COP 4600
Issues, analysis, and solutions. Viruses, worms, logic bombs, network attacks, covert channels, steganography, cryptology, authentication, digital signatures, electronic commerce

CNT 5517 Mobile Computing (3)
Prereq: CEN 4500C

Emerging topics of wireless and mobile computing and networking including mobile computing models, mobile-IP, adhoc networks, Bluetooth, and 802. 11b. Mobile database access and mobile transactions in context of emerging field of M-commerce.

CNT 6107 Advanced Computer Networks (3)
Prereq: COP 5615, COP 5536, and CNT 5106C
Computer network architecture, including topologies, media, switching, routing, congestion control, protocols, and case studies.

CNT 6885 Distributed Multimedia Systems (3)
Design issues; survey of recent advances, including compression, networking, and operating system issues.

COP 5536 Advanced Data Structures (3)
Prereq: COP 3530
Development of efficient data structures used to obtain more efficient solutions to classical problems, such as those based on graph theoretical models, as well as problems that arise in application areas of contemporary interest

COP 5555 Programming Language Principles (3)
Prereq: COP 3530
History of programming languages, formal models for specifying languages, design goals, run-time structures, and implementation techniques, along with survey of principal programming language paradigms

COP 5615 Distributed Operating System Principles (3)
Prereq: COP 4600
The concepts and techniques of efficient management of computer system resources.

COP 5618 Concurrent Programming (3)
Prereq: COP 3100, 3530
Overview of principles and programming techniques. Reasoning about concurrency, synchronization, program structuring, multi-threaded server applications.

COP 5625 Programming Language Translators (3)
Prereq: COP 5555
Anatomy of translators for high-level programming languages.

COP 5725 Database Management Systems (3)
Prereq: COP 3530, 4600, or equivalent
An introduction to systems and procedures for managing large computerized databases.

COP 6726 Database System Implementation (3)
Prereq: COP 4600 and 4720 or 5725
DBMS architecture, query processing and optimization, transaction processing, index structures, parallel query processing, object-oriented and object-relational databases, and related topics

COP 6755 Distributed Database Systems (3)
Prereq: COP 5615, 5725, and a course in computer networks

Distributed database systems including the areas of distributed database design, resource allocation, access plan selection, and transaction management.

COT 5405 Analysis of Algorithms (3)
Prereq: COP 3530
Introduction and illustration of basic techniques for designing efficient algorithms and analyzing algorithm complexity.

COT 5442 Approximation Algorithms (3)
Prereq: COP 3530 or COT 5405
Fundamentals of algorithmic paradigms, analysis, techniques, and software. Topics include greedy methods, randomized algorithms, IP-rounding, approximability, covering, packing, clustering, and network problems.

COT 5520 Computational Geometry (3)
Prereq: COP 3530
Design, analysis, and implementation of algorithms and data structures to solve geometric problems. Applications in graphics, robotics, computational biology, data mining, and scientific computing. Convex hulls, Voronoi diagrams, triangulations, arrangements and range searching.

COT 5615 Mathematics for Intelligent Systems (3)
Prereq: MAC 2313, Multivariate Calculus; MAS 3114 or MAS 4105, Linear Algebra; STA 4321, Mathematical Statistics. Mathematical methods commonly used to develop algorithms for computer systems that exhibit intelligent behavior.

COT 6315 Formal Languages and Computation Theory (3)
Prereq: COP 3530 and familiarity with discrete mathematics and data structures
Introduction to theoretical computer science including formal languages, automata theory, Turing machines, and computability.

Cognate Core (Here are some sample cognate areas. These are selected by the student and his/her advisor and approved by the committee.) 9 hours

Entrepreneurship (Innovation Institute Certificate in Entrepreneurship)

EGN 6640: Entrepreneurship for Engineers
Credits: 3 Grading Scheme: Letter
Introduction to entrepreneurship, idea generating and feasibility analysis, and business planning. Lectures, case studies, student-led discussions, team business plans, and investor presentations.

EGN 6642: Engineering Innovation
Credits: 3 Grading Scheme: Letter
Concepts of innovative thinking and innovation practices. Using lectures, case studies, team exercises, and guest speakers, the course teaches life skills in innovative thought

and action that students can use in careers ranging from starting companies to executing R&D projects in large companies.

EGN 6039: Engineering Leadership
Credits: 3 Grading Scheme: Letter
Concepts, theory and practice of engineering leadership; effective written and oral communications and presentations; engineering leadership characteristics, individual differences and self-awareness; developing and building teams; managing change, conflicts, and crises; and understanding real-world ethics and core values.

CIS 6930: Recent Advances in Social Network Computing
Special Topics in CIS (3; max: 9)
Prereq: vary depending on topics

CIS6930 - DEPT / CIS4930 - 9024 Data Mining
Special Topics in CIS (3; max: 9)
Prereq: vary depending on topics

Virtual Environments User Experience/ Natural User Interactions

DIG 6751C Protocols for Multimedia Interfaces
Credits: 2-4 Max: 4 Grading Scheme: Letter
Prerequisite: Admission into the MA in DAS program as a full-time Major or written consent of Instructor.
Covering protocols that control the interface components of a wide range of human-computer interaction devices including computers, mobile phones, multimedia players etc. Principles of interactive event handling and skills in coding touch screen interaction using contemporary platforms and mobile device environments, virtual world interaction, web-based interaction, as well as standard interaction methods for computer applications.

CAP 5XXX Natural User Interfaces (CISE Course Under Review for Approval) (3)
Introduces design, development, and evaluation of Natural User Interaction (NUI) technologies (e.g., non-keyboard and mouse technologies, such as touchscreen interaction, gesture interaction, speech interaction, etc.). Key concepts include hardware-to-software NUI pipeline and considerations in NUI software development (including existing platforms, toolkits, and APIs used to create NUI software).

DIG 6126C - Interaction Design
Credits: 1-3 Max: 6 Grading Scheme: Letter
Prerequisite: admission in MA DAS program or consent of instructor.
Extend theoretical and practical perspectives into several focused projects using interaction principles prevalent in the entertainment and simulation industries, by creating and evaluating solutions across iterative design and testing cycles researching usability and affective influence. Emphasizes principles of cognitive psychology, including mental models, targeting and interface metaphors.

Other graduate-level courses including research courses (15-18 or 45-48)

CIS 6905 Individual Study
Credits: 1-3 Max: 6 Grading Scheme: Letter, S/U
Prerequisite: consent of faculty member supervising the study

CIS 6910 Supervised Research
Credits: 1-5 Max: 5 Grading Scheme: S/U
Prerequisite: graduate status in CIS.

CIS 6930 Special Topics in CIS
Credits: 3 Max: 9 Grading Scheme: Letter
Prerequisite: vary depending on topics.

Research Credits (12-15)

CIS 7979: Advanced Research
Credits: 1-12 Grading Scheme: S/U
Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

CIS 7980: Research for Doctoral Dissertation
Credits: 1-15 Grading Scheme: S/U

F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the curriculum and indicate whether any industry advisory council exists to provide input for curriculum development and student assessment.

At this time, the CISE Department has an Industry Advisory Board (IAB). The IAB will advise the department on all curricula activities. The HCC PhD program was created under the advisement of User Experience groups at BMW, Intel, Tesla and now Harris. These companies were all informed of our proposal and they have all commented on the proposal. Furthermore, the HCC PhD proposal is consistent with existing HCC PhD programs at Georgia Tech, Clemson, and UMBC.

Specific industry driven competencies include: User Interface Design, Software Development, and Usability Testing. These are the core industry driven competencies related to the HCC PhD. These competencies were identified in discussions with the industry partners (BMW, Intel, Tesla, Harris) and the university partners (Georgia Tech, Clemson, UMBC)

G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.

We are investigating accreditation from the Human Factors and Ergonomics Society (HFES), see http://www.hfes.org/web/Students/grad_programs.html

H. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor's or master's programs associated with the proposed program. Are the programs accredited? If not, why?

Given the interdisciplinary nature of the proposed HCC PhD program, we could accept students from

numerous disciplines. For example, we have worked with students from the Arts, Humanities, Social Sciences, in addition to our Engineering students. Therefore, it's very difficult to name all the possible accrediting agencies for all of the prospective students we will admit.

I. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2 in Appendix A. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The HCC PhD will use the traditional deliver system on the main campus. No other university in the State of Florida has a HCC PhD program; therefore, it is not feasible to collaborate with other universities with respect to instruction delivery. As noted earlier, students will be recruited from Florida institutions, specifically, FAMU and FIU. Dr. Gilbert delivered the keynote for the Florida McNair Scholars Research Conference on October 17, 2014 at FIU. During his time at FIU and in other McNair Scholar meetings, discussions have occurred to pursue ways to recruit FIU students to the HCC PhD. Dr. Gilbert also visited FAMU and met with the Computer and Information Sciences (CIS) faculty and department chair on January 29, 2015. He also met with the Dean of the College of Engineering. In their meetings, Dr. Gilbert shared with the Dean and the FAMU CIS faculty information about the proposed HCC PhD and the fact that there are new HCC faculty, students and postdocs at UF. With their move, UF has the largest population of African-American computing sciences PhD students in the nation. As such, FAMU agreed to establish a relationship with the new HCC faculty, students and postdocs.

IX. Faculty Participation

A. Use Table 4 in Appendix A to identify existing and anticipated full-time (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

See Table 4 in Appendix A.

B. Use Table 2 in Appendix A to display the costs and associated funding resources for existing and anticipated full-time faculty (as identified in Table 2 in Appendix A). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

See Table 2 in Appendix A.

C. Provide in the appendices the abbreviated curriculum vitae (CV) for each existing faculty member (do not include information for visiting or adjunct faculty).

See CVs in Appendices.

D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

Collectively, the list of achievements and awards received by the faculty include two recent Fulbright Scholars; twelve NSF Career Awards; four IEEE Fellows; one Association for Computing Machinery (ACM) Fellow, two AAAS Fellows, SCS Fellow, and SPIE Fellow; two members of the European Academy of Sciences; one IEEE Computer Society Taylor Booth Education Award; one IEEE Computer Society Wallace McDowell Award; one SIAM Fellow; one AAAS Mentor Award; one Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) award and one ACM Karl Karlstrom Education Award. One faculty member was recently named Editor-in-Chief of the ACM journal Computing Surveys (The ACM is the premier professional association for computer science. Computing Surveys has the highest impact of all the ACM journals.) Research expenditures for the 2012-2013 academic year were over $4 million in direct cost and 1.1 million in indirect cost. Combined it was over $5.2 million.

Below are the enrollments for Ph.D.'s in the CISE Department from Fall 2010—Fall 2014. They are broken-down by the headcount numbers by term. (Fall begins each academic year)

Term	**Headcount**
Fall 2010	144
Spring 2011	131
Summer 2011	131
Fall 2011	131
Spring 2012	120
Summer 2012	115
Fall 2012	116
Spring 2013	106
Summer 2013	95
Fall 2013	110
Spring 2014	103
Summer 2014	94

Below are the Ph.D.'s awarded from Fall 2010--Fall 2014. These are broken-down by the numbers by term. (Fall begins each academic year)

Term	**Ph.D, Degrees Awarded**
Fall 2010	15
Spring 2011	4
Summer 2011	7
Fall 2011	11
Spring 2012	8
Summer 2012	10
Fall 2012	9
Spring 2013	9
Summer 2013	7
Fall 2013	5
Spring 2014	6
Summer 2014	2

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university's students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved.

Please see attachment with library resources defined.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 3 in Appendix A. Please include the signature of the Library Director in Appendix B.

The George A. Smathers Libraries currently maintain a strong collection to support a PhD program in Human-Centered Computing. New resources added to the ACM and IEEE digital libraries are automatically included in their licensed packages. No additional funding is required beyond accommodating the annual price increases of existing resources.

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

CISE Departmental Offices, Classrooms, and Labs are described below.

In the main building (CSE Building, Bldg #42), CISE now has 48,096 square feet of space. Of this, 33,128 SF is office space, 5,495 SF is research laboratory space, 4,950 SF is instructional space, 1,875 SF is conference and seminar rooms, and 2,648 SF is miscellaneous space for systems rooms, maintenance, and storage. In addition, we now have 416 SF (room CSE-E202). The instructional space is either totally dedicated to CISE (as in labs) or is allotted to other departments on a per semester basis if CISE does not claim it for a particular period (for classrooms only). Six teaching laboratories are provided in the CSE Building, in addition to the general UF computer laboratories. These focus on multimedia, architecture, and graphics, and are of a size suitable for the classes assigned to them. Students often meet with instructors in these areas to acquire skills in a hands on setting requiring specialized resources.

These are as follows:

- Room CSE E113: 16 PCs running Linux.
- Room CSE E114: 12 PCs running Linux, and 31 PCs running Windows.
- Room CSE E115: 24 PCs running Windows.
- Room CSE E116: 17 PCs running Linux.
- Room CSE E313: 3 PCS running Windows, and 12 PCs running Linuxall with high-end graphics capabilities.
- Room CSE E309: 18 PCS running Windows, used primarily for TAs to hold office hours.

CISE public labs are available 24/7 to anyone who has a CISE account. Labs are locked between 5PM and 7AM, and require a valid Gator 1 card to access them. Also, labs are monitored with security cameras. After-hours access to computer labs is granted using enrollment information. This information comes from the College of Engineering, which in turn works directly with the Registrar. At the beginning of the semester downloads are done weekly. Afterwards, downloads are only done by special requests. Four additional labs are available for course-specific work, corresponding to five Research Centers:

Human-Computer Interaction Laboratory
Center for Vision, Graphics, and Medical Imaging (CVGMI)
Database Systems Research and Development Center
Mobile and Pervasive Computing Laboratory
Computational Science and Intelligence Laboratory

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2 in Appendix A. Do not include costs for new construction because that information should be provided in response to X (E) below.

None

E. If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 in Appendix A includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.

No new capital expenditures for instruction or research space is required.

F. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

On the 5th floor of the Computer Science & Engineering building, we have a usability lab with a two way mirror between our experiment room and an observation room.

The Department of Computer and Information Science and Engineering possesses the following departmental computer resources supporting the academic and research missions:

- Five CISE CPU servers (a Solaris SPARC, two Linux AMD 64 and two Windows 20008R2 servers) are available via SSH, VNC or remote desktop to all users to run jobs, and to log in to from remote locations. These tend to be some of the fastest machines in the department and have the most memory.

- All faculty offices are equipped with a Windows or Linux workstation. Standard software installations include Ubuntu 10.04 or Windows 7, Java, jGRASP, many Microsoft packages due to the Microsoft Development Academic Alliance, Mozilla Firefox, Second Life, and XMing (X Windows on a Windows PC). Database software includes MySQL, PostgreSQL, and Oracle. Wireless access is available throughout the CSE Building and all of campus, including student dorms, cafeterias, and other public areas.

- The classrooms in the CSE building have all been provided with multimedia support and computers housed in a locked kiosk. In addition, all have access to the University's wireless network. That, combined with the college's requirement that all students possess an adequately-provisioned laptop computer, makes it easy to access resources in the classrooms.

- The bulk of the CISE's disk storage comes from a Sun 7410 with 66TB of raw disk space. An additional 60TB is provided by other servers. There are about 35 servers running a mix of Red Hat Enterprise Linux 6 and Solaris 10 providing such services as:

    - web hosting
    - email
    - database hosting—MySQL, PostgreSQL, Oracle
    - Kerberos / LDAP authentication
    - DNS
    - DHCP
    - backups via Tivoli Storage Manager and disk based rsyncs
    - Samba
    - NFS
    - security-related services

- Our web servers run on a Sun T5220 server with Solaris 10, 32GB of memory, and 1.2 GHz UltraSPARC-T2 CPUs. They serve Department content, user content, and various web applications

that support the Department.

- We have, in total, about 100 Linux PCs running Ubuntu Desktop 10.04 and 130 Windows 7 PCs. They serve as lab machines and workstations for students, Teaching Assistants, Research Assistants, and Faculty. Of these, 58 Windows PCs and 65 Linux PCs are in public labs that are intended for general student use as well as use in lab sections of graduate and undergraduate classes.

- We provide a compute cluster consisting of a head node with dual Opterons, 16GB of memory and 3.5TB of storage with 20 worker nodes with dual Opterons and 32GB of memory running Linux (Ubuntu Server 10.04).

- We also provide a GPU compute cluster comprising five machines, each with up to three different high-end GPUs for those that make use of the unique compute capabilities that GPUs provide. These machines have dual twelve core CPU's, 64Gigabytes of memory and five TB of storage per node.

- The networking in the Department consists mainly of 100 Mb and 1 Gb connections, except for the servers which utilize a minimum of 1 Gb connections. Many have higher bandwidth connections utilizing EtherChannel. Our Cisco hardware—one Catalyst 6513, one Catalyst 6509E, and three Catalyst 4506s—provides routing and switch capabilities to the more than 600 devices and 80 networks in the Department. Our external connection is via 1Gb fiber connection to the University of Florida's core network.

G. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2 in Appendix A.

None

H. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2 in Appendix A.

None

I. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2 in Appendix A.

A number of graduate students will be supported by teaching assistantships (TA) and research grants. The TA will be allocated to HCC students as needed from the total available for PhD students in CISE. Faculty write research grant proposals to fund graduate students. The HCC faculty have a very strong funding record and they support several graduate students through this funding. Currently, the prospective HCC PhD students have the following fellowships:

1. One NSF Graduate Research Fellowship (GRF)
2. Six GEM (Graduate Engineering Minority) Fellowships
3. One Bill & Melinda Gates Scholar
4. One Generation Google Scholarship Recipient

J. Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.

We have students that have worked on internships and/or planning internships with the following companies:

- Intel

- Harris Corporation
- Institute for Human Machine Cognition

Intel has awarded 4 GEM Fellowships to HCC students, see http://www.gemfellowship.org/students/gem-fellowship-program/ The HCC PhD students have worked at Intel the past 3 years. The HCC faculty have established a working relationship with Intel where students are being hired as interns and Intel is funding projects at UF.

Harris Corporation and the HCC group at UF are establishing a relationship for internships, collaborative research, and future hires. This is an early relationship, but it is working.

The Institute for Human Machine Cognition (IHMC) has also established a relationship with the HCC group. They have hired a HCC PhD student as an intern this summer and there are discussions for future hires.

APPENDIX B

Please include the signature of the Equal Opportunity Officer and the Library Director.

Signature of Equal Opportunity Officer	**Date**
Signature of Library Director	**Date**

This appendix was created to facilitate the collection of signatures in support of the proposal. Signatures in this section illustrate that the Equal Opportunity Officer has reviewed section II.E of the proposal and the Library Director has reviewed sections X.A and X.B.

Library support for a Ph.D. program in Human-Centered Computing

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university's students.

The George A. Smathers Libraries currently purchase or license a core collection that supports a Ph.D. program in Human-Centered Computing. Additional items may be requested through the ILLiad Interlibrary Loan system.

Summary:

Books and conference proceedings (approximate):

Print books: 7,000

E-books: 9,000 titles in Library Catalog. Conference proceedings may consist of several years and volumes per title.

Journals: 314 highly relevant current subscriptions

Technical Reports: Member Institution support for arXiv

Table 1. E-books and conference proceedings

e-book/proceedings publishers	*title estimates*
ACM	proceedings from 120 major conferences/year
IEEE	proceedings from 1300 conferences/year; estimated 130 highly relevant to HCC
IEEE standards	full text of approx. 1100 active standards
Springer: Lecture Notes in Computer Science	6000 titles
Elsevier (Science Direct)	96,000 chapters online
other E-book titles in catalog	9000 titles

Table 2. Highly relevant journals, by publisher. Titles are listed below.

journal publisher:	*highly-relevant journals*
ACM	53
IEEE + IET	67
Springer	93
Elsevier (Science Direct)	48
other publishers	53
total	*314*

Books and conference proceedings: E-book examples include:

Association for Computing Machinery (in ACM Digital library): ***120 major conferences/year, such as:***

Access Control Models and Technologies
Applied Perception in Graphics & Visualization
Autonomic Computing and Communications
Bioinformatics, Computational Biology and Biomedicine
Computer Supported Cooperative Work
Computers and Accessibility
Computers and People Research
Computing Frontiers Conference
Data and Application Security and Privacy
Design of Communication
Electronic Commerce
Engineering Interactive Computing Systems
Eye Tracking Research and Applications
Geographic Information Systems
Humans and Computers
Human-Robot Interaction
Hypertext and hypermedia
Information and Knowledge Management
Intelligent User Interfaces
Knowledge Capture
Knowledge Discovery and Data Mining
Middleware
Mobile and Ad Hoc Networking and Computing
Mobile Computing and Networking
Mobile Computing Systems and Applications
Mobile Systems, Applications, and Services
Modeling, Analysis and Simulation of Wireless and Mobile Systems
Network and Operating Systems Support for Digital Audio and Video
Non-Photorealistic Animation and Rendering
Performance Evaluation Methodologies and Tools (VALUETOOLS)
Recommender Systems
Research and Development in Information Retrieval
Security and Privacy in Wireless and Mobile Networks
Tangible and Embedded Interaction
3D technologies for the World Wide Web (Web3D)
Ubiquitous Computing
User Interface Software and Technology
Virtual Execution Environments (VEE)
Virtual Reality Software and Technology
Web Intelligence and Intelligent Agent Technology
Web Science
Winter Simulation Conference
Web Search and Data Mining
International World Wide Web Conference

conference proceedings sponsored by SIGs:

SIGACCESS

SIGACT
SIGAda
SIGAI
SIGAPP
SIGARCH
SIGBED
SIGBio
SIGCAS
SIGCHI
SIGCOMM
SIGCSE
SIGDA
SIGDOC
SIGecom
SIGEVO
SIGGRAPH
SIGHPC
SIGIR
SIGITE
SIGKDD
SIGLOG
SIGMETRICS
SIGMICRO
SIGMIS
SIGMM
SIGMOBILE
SIGMOD
SIGOPS
SIGPLAN
SIGSAC
SIGSAM
SIGSIM
SIGSOFT
SIGSPATIAL
SIGUCCS
SIGWEB

IEEE (in IEEE Xplore Digital Library): ***examples of relevant proceedings include:***

Advanced Information Networking and Applications Workshops (WAINA)
Advances in Computer-Human Interaction
Advances in Social Network Analysis and Mining, ASONAM
Applied Computational Intelligence and Informatics (SACI)
Availability, Reliability and Security
Bioinformatics and Bioengineering (BIBE)
Bioinformatics and Biomedicine (BIBM)
Biomedical Wireless Technologies, Networks, and Sensing Systems (BioWireleSS)
Biometric Measurements and Systems for Security and Medical Applications (BIOMS)
Biometrics: Theory, Applications, and Systems (BTAS)
Body-Centric Wireless Communications, IET Seminar
Brain-Computer Interface (BCI)

Broadband, Wireless Computing, Communication and Applications (BWCCA)
Business Applications of Social Network Analysis (BASNA)
Business Computing and Global Informatization (BCGIN)
Communications and Information Technologies (ISCIT)
Computational and Business Intelligence (ISCBI)
Computational Aspects of Social Networks, CASON
Computational Intelligence and Bioinformatics and Computational Biology (CIBCB)
Computational Intelligence and Design, ISCID
Computational Intelligence and Games
Computational Intelligence and Security
Computational Intelligence for Financial Engineering (CIFEr)
Computational Intelligence for Multimedia, Signal and Vision Processing (CIMSIVP)
Computational Intelligence in Biometrics and Identity Management (CIBIM)
Computational Intelligence in Healthcare and e-health (CICARE)
Computer Security Applications Conference
Computing, Communications and Networking Technologies (ICCCNT)
Consumer Communications and Networking Conference (CCNC)
Dependable Systems and Networks
e-Business Engineering (ICEBE)
Human Computer Interactions (ICHCI)
Human-Robot Interaction (HRI), ACM/IEEE
Humanities, Science and Engineering Research (SHUSER)
Image Analysis for Multimedia Interactive Services, WIAMIS
Informatics, Electronics & Vision (ICIEV)
Information Assurance and Security
Information Society (i-Society)
Information Technology: New Generations
Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS)
Intelligent Environments (IE)
Intelligent Human-Machine Systems and Cybernetics, IHMSC
Mobile Computing and Ubiquitous Networking (ICMU)
Mobile Data Management
Mobile, Ubiquitous, and Intelligent Computing (MUSIC)
Natural Computation (ICNC)
Pattern Recognition, Informatics and Medical Engineering (PRIME)
Quality of Multimedia Experience, QoMEx
Requirements Engineering for Electronic Voting Systems (REVOTE)
Risks and Security of Internet and Systems (CRiSIS)
Security and Privacy (SP)
Semantic Media Adaptation and Personalization (SMAP)
Social Computing (SocialCom)
Social Intelligence and Technology (SOCIETY)
Systems, Man and Cybernetics
3D User Interfaces (3DUI)
Trust, Security and Privacy in Computing and Communications (TrustCom)
User-Centered Computer Vision (UCCV)
Virtual Environments, Human-Computer Interfaces and Measurement Systems (VECIMS)
Virtual Systems and Multimedia (VSMM)
Visual Languages and Human Centric Computing (VL/HCC)
Wireless Personal Multimedia Communications (WPMC)
World of Wireless Mobile and Multimedia Networks (WoWMoM)

Springer: Lecture Notes in Computer Science: ***6049 total: 4971 online, 1077 print***

subseries include:

- Programming & software engineering
- Information systems and applications, incl. Internet/Web, and HCI
- Security & cryptology
- Computer communication networks & telecommunications
- Image processing, computer vision, pattern recognition, and graphics
- Artificial intelligence
- Bioinformatics
- Advanced research in computing & software science
- Lecture Notes in Artificial Intelligence

Agent-based social systems
Lecture Notes in Control & Information Sciences
Lecture Notes in Mathematics
Understanding Complex Systems

Journals: Highly-relevant current subscriptions:

ACM Digital Library (complete): 53 current journals and magazines

Magazines

ACM Inroads
queue
Communications of the ACM (CACM)
Computers in Entertainment (CIE)
eLearn: Education and Technology in Perspective
interactions: experiences · people · technology
netWorker
Ubiquity
XRDS (Crossroads, the ACM Magazine for Students)

Journals

Computing Reviews
Computing Surveys
Journal of Data and Information Quality (JDIQ)
Journal of Experimental Algorithmics (JEA)
Journal of the ACM (JACM)
Journal on Computing and Cultural Heritage (JOCCH)
Journal on Emerging Technologies in Computing Systems (JETC)
Transactions on Accessible Computing (TACCESS)
Transactions on Algorithms (TALG)
Transactions on Applied Perception (TAP)
Transactions on Architecture and Code Optimization (TACO)
Transactions on Asian Language Information Processing (TALIP)
Transactions on Autonomous and Adaptive Systems (TAAS)
Transactions on Computation Theory (TOCT)
Transactions on Computational Biology and Bioinformatics (TCBB)
Transactions on Computational Logic (TOCL)
Transactions on Computer-Human Interaction (TOCHI)
Transactions on Computer Systems (TOCS)

Transactions on Computing Education (TOCE)
Transactions on Database Systems (TODS)
Transactions on Design Automation of Electronic Systems (TODAES)
Transactions on Economics and Computation (TEAC)
Transactions on Embedded Computing Systems (TECS)
Transactions on Graphics (TOG)
Transactions on Information and System Security (TISSEC)
Transactions on Information Systems (TOIS)
Transactions on Intelligent Systems and Technology (TIST)
Transactions on Interactive Intelligent Systems (TiiS)
Transactions on Internet Technology (TOIT)
Transactions on Knowledge Discovery from Data (TKDD)
Transactions on Management Information Systems (TMIS)
Transactions on Mathematical Software (TOMS)
Transactions on Modeling and Computer Simulation (TOMACS)
Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)
Transactions on Parallel Computing (TOPC)
Transactions on Programming Languages and Systems (TOPLAS)
Transactions on Reconfigurable Technology and Systems (TRETS)
Transactions on Sensor Networks (TOSN)
Transactions on Software Engineering and Methodology (TOSEM)
Transactions on Speech and Language Processing (TSLP)
Transactions on Storage (TOS)
Transactions on the Web (TWEB)
IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)
IEEE/ACM Transactions on Networking (TON)

Newsletters sponsored by SIGs, above

IEEE (in IEEE Xplore Digital Library): ***56 highly relevant journals:***

Annals of the history of computing
IEEE/ACM transactions on audio, speech and language processing
IEEE/ACM transactions on networking
IEEE cloud computing
IEEE communications surveys and tutorials
IEEE computational intelligence magazine
IEEE computer graphics and applications
IEEE intelligent systems
IEEE internet computing
IEEE internet of things journal
IEEE journal of biomedical and health informatics
IEEE multimedia magazine
IEEE pervasive computing
IEEE robotics and automation magazine
IEEE security & privacy
IEEE technology and society magazine
IEEE transactions on affective computing
IEEE transactions on automatic control
IEEE transactions on automation science and engineering
IEEE transactions on autonomous mental development
IEEE transactions on biomedical engineering
IEEE transactions on cloud computing

IEEE transactions on computational intelligence and AI in games
IEEE transactions on computational social systems
IEEE transactions on computers
IEEE transactions on consumer electronics
IEEE transactions on control of network systems
IEEE transactions on cybernetics
IEEE transactions on dependable and secure computing
IEEE transactions on evolutionary computation
IEEE transactions on fuzzy systems
IEEE transactions on haptics
IEEE transactions on human-machine systems
IEEE transactions on image processing
IEEE transactions on industrial informatics
IEEE transactions on information forensics and security
IEEE transactions on information theory
IEEE transactions on knowledge and data engineering
IEEE transactions on learning technologies
IEEE transactions on medical imaging
IEEE transactions on mobile computing
IEEE transactions on multimedia
IEEE transactions on nanobioscience
IEEE transactions on network and service management
IEEE transactions on neural networks and learning systems
IEEE transactions on parallel and distributed systems
IEEE transactions on pattern analysis and machine intelligence
IEEE transactions on robotics
IEEE transactions on services computing
IEEE transactions on smart grid
IEEE transactions on systems, man, and cybernetics: systems
IEEE transactions on visualization and computer graphics
IEEE transactions on wireless communications
IEEE wireless communications
IEEE women in engineering magazine
IEEE/OSA journal of display technology

IET: (in IEEE Xplore Digital Library): *11 highly relevant journals:*
IET Biometrics
IET Communications
IET Computer Vision
IET Control Theory & Applications
IET Image Processing
IET Information Security
IET Intelligent Transport Systems
IET Software
IET Synthetic Biology
IET Systems Biology
IET Wireless Sensor Systems

Springer: *93 highly relevant journals:*
AI and society
Annals of mathematics and artificial intelligence

Applied intelligence
Artificial life and robotics
Autonomous agents and multi-agent systems
Autonomous robots
Biological cybernetics
Brain informatics
Cluster computing
Cognition, technology & work
Cognitive neurodynamics
Computer supported cooperative work
Computational complexity
Computational optimization and applications
Computing and visualization in science
Constraints
Cybernetics and systems analysis
Data mining and knowledge discovery
Designs, codes, and cryptography
Distributed and parallel databases
Education and information technologies
EURASIP journal on wireless communications and networking
Formal methods in system design
Fuzzy optimization and decision making
Genetic programming and evolvable machines
Group decision and negotiation
Health information science and systems
Higher-order and symbolic computation
Human-centric computing and information sciences
Information systems frontiers
Intelligent service robotics
International journal of artificial intelligence in education
International journal of computer-supported collaborative learning
International journal of computer vision
International journal of information security
International journal of multimedia information retrieval
International journal on interactive design and manufacturing
International journal on software tools for technology transfer
Journal of computer virology and hacking techniques
Journal of applied mathematics and computing
Journal of automated reasoning
Journal of cloud computing
Journal of computational neuroscience
Journal of computer science and technology
Journal of cryptology
Journal of economic interaction and coordination
Journal of global optimization
Journal of heuristics
Journal of intelligent information systems
Journal of internet services and applications
Journal of mathematical imaging and vision
Journal of network and systems management
Journal of optimization theory and applications

Journal of real-time image processing
Journal of scheduling
Journal of science education and technology
Journal of systems integration
Journal of systems science and complexity
Journal on multimodal user interfaces
Knowledge and information systems
Language resources and evaluation
Minds and machines
Mobile networks and applications
Multidimensional systems and signal processing
Multimedia systems
Multimedia tools and applications
Natural computing
NETNOMICS: Economic research and electronic networking
Networks and spatial economics
Neural computing & applications
Neuroinformatics
New generation computing
Pattern analysis and applications : PAA
Pattern recognition and image analysis
Personal and ubiquitous computing
Queueing systems
Real-time systems
Requirements engineering
Scientometrics
Service oriented computing and applications
Social network analysis and mining
Soft computing
Swarm intelligence
Telecommunication systems
3D research
Universal access in the information society
User modeling and user-adapted interaction
Virtual reality
Visual computer
Wireless networks
Wireless personal communications
World Wide Web

Elsevier (ScienceDirect): *48 highly relevant journals:*

Ad hoc networks
Applied soft computing
Artificial intelligence
Biologically inspired cognitive architectures
Computer fraud & security
Computer speech & language
Computers in human behavior
Computers & security
Decision support systems
Design studies

Electronic commerce research and applications
Entertainment computing
Expert systems with applications
Future generation computer systems
Fuzzy sets and systems
Games and economic behavior
Healthcare
Image and vision computing
Information and computation
Information fusion
Information processing & management
Information processing letters
Information sciences
Information systems
Infosecurity
International journal of bio-medical computing
International journal of human-computer studies
International journal of medical informatics
Journal of pragmatics
Journal of symbolic computation
Journal of systems and software
Journal of visual languages and computing
Knowledge-based systems
Mathematical social sciences
Medical image analysis
Microprocessors and microsystems
Neural networks
Neurocomputing
Pattern recognition
Pattern recognition letters
Pervasive and mobile computing
Research in transportation business & management
Robotics and autonomous systems
Simulation modelling practice and theory
Socio-economic planning sciences
Swarm and evolutionary computation
Technological forecasting and social change
Web semantics: Science, services and agents on the World Wide Web

Other publishers: *53 highly relevant journals:*
Wiley:

Cognitive science
Complexity
Computational intelligence
Computer animation and virtual worlds
Computer graphics forum
Concurrency and computation: practice and experience
Expert systems
Human communication research
Human factors and ergonomics in manufacturing & service industries
International journal of intelligent systems

International journal of network management
Journal of software: evolution and process
Networks
Random structures & algorithms
Security and communication networks
Software, practice and experience
Software testing, verification and reliability
Wireless communications and mobile computing

Cambridge:

Combinatorics, probability & computing
Journal of functional programming
Knowledge engineering review
LMS journal of computation and mathematics
Mathematical structures in computer science
Natural language engineering
Network science
Probability in the engineering and informational sciences
Review of symbolic logic
Robotica
Theory and practice of logic programming

SIAM :

Multiscale modeling & simulation
SIAM journal on applied dynamical systems
SIAM journal on computing
SIAM journal on control & optimization
SIAM journal on optimization
SIAM journal on scientific computing

Sage:

Adaptive behavior
Convergence: The international journal of research into new media technologies

MIT Press:

Artificial life
Design issues
Evolutionary computation
Journal of cognitive neuroscience
Journal of machine learning research
Presence: teleoperators and virtual environments.

INFORMS:

Information systems research
INFORMS journal on computing
Management science
Marketing science
Organization science
Service science
Transportation science

Taylor & Francis:

Enterprise information systems
Human-computer interaction (via ACM DL)
International journal of human-computer interaction

The information above has been prepared by Denise Bennett, Engineering Librarian, Marston Science Library.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 3 in Appendix A.

The George A. Smathers Libraries currently maintain a strong collection to support a PhD program in Human-Centered Computing. New resources added to the ACM and IEEE digital libraries are automatically included in their licensed packages. No additional funding is required beyond accommodating the annual price increases of existing resources.

I have reviewed and approved Section X, subsections A and B.

Judith C. Russell
Dean of University Libraries
PO Box 117000
Gainesville FL 32611
Phone: 352-273-2505
jcrussell@ufl.edu

APPENDIX A

TABLE 4
ANTICIPATED FACULTY PARTICIPATION

Faculty Code	Faculty Name or "New Hire" Highest Degree Held Academic Discipline or Speciality	Rank	Contract Status	Initial Date for Participation in Program	Mos. Contract Year 1	FTE Year 1	% Effort for Prg. Year 1	PY Year 1	Mos. Contract Year 5
A	Lisa Anthony, Ph.D.	Asst. Prof.	Tenure-track	Fall 2015	9	0.75	0.30	0.23	9
A	Christina Gardner-McCune, Ph.D.	Asst. Prof.	Tenure-track	Fall 2015	9	0.75	0.20	0.15	9
A	Juan Gilbert, Ph.D.	Professor	Tenure-track	Fall 2015	12	1.00	0.50	0.50	12
A	Eakta Jain, Ph.D.	Asst. Prof.	Tenure-track	Fall 2015	9	0.75	0.25	0.19	9
A	Benjamin Lok, Ph.D.	Aso. Prof.	Tenure	Fall 2015	9	0.75	0.45	0.34	9
A	Kyla McMullen, Ph.D.	Asst. Prof.	Tenure-track	Fall 2015	9	0.75	0.35	0.26	9
A	Damon Woodard, Ph.D.	Aso. Prof.	Tenure-track	Fall 2015	9	0.75	0.15	0.11	9
C	New Hire, Ph.D.	Aso. Prof.	Tenure-track	Fall 2016	9	0.75	0.55	0.41	9
	Total Person-Years (PY)							**2.19**	

Faculty Code		Source of Funding	PY Workload I Year 1
A	Existing faculty on a regular line	Current Education & General Revenue	1.78
B	New faculty to be hired on a vacant line	Current Education & General Revenue	0.00
C	New faculty to be hired on a new line	New Education & General Revenue	0.41
D	Existing faculty hired on contracts/grants	Contracts/Grants	0.00

E	New faculty to be hired on contracts/grants	Contracts/Grants	0.00	
		Overall Totals for	**Year 1**	**2.19**

FTE Year 5	% Effort for Prg. Year 5	PY Year 5
0.75	0.40	0.30
0.75	0.30	0.23
1.00	0.50	0.50
0.75	0.30	0.23
0.75	0.50	0.38
0.75	0.35	0.26
0.75	0.20	0.15
0.75	0.55	0.41
		2.45

by Budget Classsification	
	Year 5
	2.04
	0.00
	0.41
	0.00

	0.00
Year 5	**2.45**

APPENDIX A

TABLE 3
ANTICIPATED REALLOCATION OF EDUCATION & GENERAL FUNDS*

Program and/or E&G account from which current funds will be reallocated during Year 1	Base before reallocation	Amount to be reallocated	Base after reallocation
19140100-101-CRRNT, Department E&G Funds	6,728,289	258,409	**$6,469,880**
19140100-107-CRRNT, UF Preeminence Funds	739,285	209,807	**$529,478**
Totals	$7,467,574	$468,215	**$6,999,359**

*** If not reallocating funds, please submit a zeroed Table 3**

APPENDIX A

TABLE 2
PROJECTED COSTS AND FUNDING SOURCES

Instruction & Research Costs (non-cumulative)	Year 1							Year 5					
	Funding Source							Funding Source					
	Reallocated Base* (E&G)	Enrollment Growth (E&G)	Other New Recurring (E&G)	New Non-Recurring (E&G)	Contracts & Grants (C&G)	Auxiliary Funds	**Subtotal E&G, Auxiliary, and C&G**	Continuing Base** (E&G)	New Enrollment Growth (E&G)	Other*** (E&G)	Contracts & Grants (C&G)	Auxiliary Funds	**Subtotal E&G, Auxiliary, and C&G**
Faculty Salaries and Benefits	419,645	0	0	0	0	0	**$419,645**	472,315	0	0	0	0	**$472,315**
A & P Salaries and Benefits	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
USPS Salaries and Benefits	22,320	0	0	0	0	0	**$22,320**	25,121	0	0	0	0	**$25,121**
Other Personal Services	26,250	0	0	0	0	0	**$26,250**	29,545	0	0	0	0	**$29,545**
Assistantships & Fellowships	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Library	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Expenses	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Operating Capital Outlay	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Special Categories	0	0	0	0	0	0	**$0**	0	0	0	0	0	**$0**
Total Costs	**$468,215**	**$0**	**$0**	**$0**	**$0**	**$0**	**$468,215**	**$526,981**	**$0**	**$0**	**$0**	**$0**	**$526,981**

*Identify reallocation sources in Table 3.

**Includes recurring E&G funded costs ("reallocated base," "enrollment growth," and "other new recurring") from Years 1-4 that continue into Year 5.

***Identify if non-recurring.

Faculty and Staff Summary

Total Positions	Year 1	Year 5
Faculty (person-years)	2.19	2.45
A & P (FTE)	0	0
USPS (FTE)	0	0

Calculated Cost per Student FTE

	Year 1	Year 5
Total E&G Funding	$468,215	$526,981
Annual Student FTE	8.4	35
E&G Cost per FTE	$55,740	$15,057

APPENDIX A

TABLE 1-B

PROJECTED HEADCOUNT FROM POTENTIAL SOURCES

(Graduate Degree Program)

Source of Students (Non-duplicated headcount in any given year)*	Year 1		Year 2		Year 3		Year 4		Year 5	
	HC	FTE****	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Individuals drawn from agencies/industries in your service area (e.g., older returning students)	0	0	0	0	0	0	0	0	0	0
Students who transfer from other graduate programs within the university**	12	8.4	0	0	0	0	0	0	0	0
Individuals who have recently graduated from preceding degree programs at this university	0	0	4	2.8	10	7	10	7	10	7
Individuals who graduated from preceding degree programs at other Florida public universities	0	0	8	5.6	10	7	15	10.5	20	14
Individuals who graduated from preceding degree programs at non-public Florida institutions	0	0	8	5.6	10	7	15	10.5	20	14
Additional in-state residents***	0	0	0	0	0	0	0	0	0	0
Additional out-of-state residents***	0	0	0	0	0	0	0	0	0	0
Additional foreign residents***	0	0	0	0	0	0	0	0	0	0
Other (Explain)***	0	0	0	0	0	0	0	0	0	0
Totals	**12**	**8.4**	**20**	**14**	**30**	**21**	**40**	**28**	**50**	**35**

* List projected annual headcount of students enrolled in the degree program. List projected yearly cumulative ENROLLMENTS instead of admissions.

** If numbers appear in this category, they should go DOWN in later years.

*** Do not include individuals counted in any PRIOR category in a given COLUMN.

****For assistance with this calculation, check with UF Office of Institutional Research

APPENDIX A

TABLE 1-A (DRAFT)
PROJECTED HEADCOUNT FROM POTENTIAL SOURCES
(Baccalaureate Degree Program)

Source of Students (Non-duplicated headcount in any given year)*	Year 1		Year 2		Year 3		Year 4		Year 5	
	HC	FTE	HC	FTE	HC	FTE	HC	FTE	HC	FTE
Upper-level students who are transferring from other majors within the university**	0	0	0	0	0	0	0	0	0	0
Students who initially entered the university as FTIC students and who are progressing from the lower to the upper level***	0	0	0	0	0	0	0	0	0	0
Florida College System transfers to the upper level***	0	0	0	0	0	0	0	0	0	0
Transfers to the upper level from other Florida colleges and universities***	0	0	0	0	0	0	0	0	0	0
Transfers from out of state colleges and universities***	0	0	0	0	0	0	0	0	0	0
Other (Explain)***	0	0	0	0	0	0	0	0	0	0
Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

* List projected annual headcount of students enrolled in the degree program. List projected yearly cumulative ENROLLMENTS instead of admissions.
** If numbers appear in this category, they should go DOWN in later years.
*** Do not include individuals counted in any PRIOR CATEGORY in a given COLUMN.

Appendix C Summary of Similar Programs

The proposed PhD in Human-Centered Computing (HCC) is focused on the design, construction, and evaluation of computational technologies as they relate to the human condition and impact society in general. There are currently 3 HCC PhD programs in the United States (University of Maryland Baltimore County, The Georgia Institute of Technology, and Clemson University). Once approved, the University of Florida will be the 4th HCC PhD program in existence. As such, there are no HCC PhD programs in the State of Florida at private or public institutions. Within the State of Florida the closest program to the proposed HCC PhD is at Florida State University.

FSU has a degree listed under CIP Code 30.3001 called Computational Science. After a careful evaluation of FSU's Computational Science PhD program, it can be observed that the HCC PhD program and Computation Science PhD program are both interdisciplinary PhD programs; however, the HCC PhD program has as its core studies in human computer interaction, user interface design, and research methods for human subjects. The Computational Science PhD program has a core consisting of Scientific Programming and Applied Computational Science courses. Owing to these differences, the newly proposed degree program is truly unique and not replicated to any extent on the UF campus nor across any of the State University System schools/colleges. Dr. Gilbert has reached out to Dr. Max Gunzburger at FSU to discuss these details between the proposed HCC PhD and the FSU PhD in Computation Science.

The HCC PhD degrees exist because the expertise required for this degree does not fit in traditional Computer Science or Computer Engineering PhD programs. CS & CE PhD programs have requirements for computer systems and theory. These courses are not required for HCC research. HCC researchers can design user interfaces and implement them using software languages and tools and then evaluate them in context with human subjects. However, CS & CE do not have any requirements related to the human condition, human subjects research, etc. Essentially, HCC is an extremely broad area that encompasses design, implementation and evaluation. There are PhD degrees that emphasize design, i.e. Industrial Design, Industrial Engineering (Human Factors), etc. There are PhD degrees that emphasize implementation or evaluation of software and/or hardware, i.e. CS & CE. There are also PhD degrees that emphasize evaluation, i.e. Psychology, Social Science, etc. HCC combines all of these disciplines into a single degree that meets the demands of industry, the academy and government. Therefore, HCC cannot effectively be incorporated into an existing PhD as a track because it's broader than any single degree and requires the ability to be interdisciplinary.

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School of Interactive Computing

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Thursday, December 18, 2014

Recommendation Letter for the Human-Centered Computing Ph.D. program at the University of Florida

To Whom It May Concern:

I am delighted to write this recommendation letter in support of the proposed Human-Centered Computing Ph.D. To set context, I am a Professor in the School of Interactive Computing, at the Georgia Institute of Technology. Prior to joining the faculty at Georgia Tech, I worked at Bell Laboratories and the Computer Science Lab at Xerox PARC. At Georgia Tech I have served as the Program Coordinator (lead administrator) for Georgia Tech's Human-Centered Computing (HCC) Ph.D. and also as Associate Dean for Graduate Affairs for the College of Computing the academic unit in which the HCC PhD is homed.

I'd like to begin my review by offering some insight into the almost decade of history that Georgia Tech has had with its Human-Centered Computing Ph.D. Like the proposal before you at the University of Florida, it was designed as a response to an emerging area of intellectual inquiry, that that sat squarely at the intersection of computing and humanity. While our Computer Science Ph.D. was and remains extremely good at training a generation of future researchers and scientists who want to tackle fundamental problems associated with Computer technologies, the HCC PhD responded to the recognition that Computing skills are not the only type of skills necessary to address fundamental problems in human-centered research. The HCC Ph.D. not only allowed us to broaden our offerings in both classes and research to train people with these new human-centered computing skills (e.g. in the social sciences and humanities), but it allowed us to recruit new types of students, ones with a very diverse set of undergraduate and masters backgrounds.

Georgia Tech's Human-Centered Computing Ph.D. was approved in 2005 and today we have graduated students who've taken a variety of academic and industrial positions. Our alumni are now faculty at Universities including Carnegie Mellon, Drexel, Georgetown, Maryland, Michigan, Michigan State, Minnesota, Northeastern, Rose-Hulman and Virginia Tech. Others have taken positions at Google, Salesforce, and Samsung. Other HCC PhD programs have been launched as the proposal enumerates, and others have taken up the name to describe focus areas within computing research such as the University of Colorado, Boulder. The broad range of Universities that our graduates have joined as faculty suggest a broad national demand for people who can teach classes at both the graduate and undergraduate level that will prepare a workforce that can design and build systems that meet human-centered requirements. Our industrial graduates are leading those efforts inside various companies.

I would like to comment on several important points in the proposal. First, I want to commend the proposal for making an important distinction between Human-Computer Interaction and Human-Centered Computing. While Human-Computer Interaction has a long established history within

Computer Science, it is just one discipline that is contained within the broader view of Human-Centered Computing. I particularly like and encourage the focus on policy, which has not been a central part of Human-Computer Interaction. Training graduates who can inform local, State, and National policy is not something that Computing fields have done. And yet, it's hard to think of an agency that doesn't need to factor technical considerations into the policy that is made. From having computationalists inform the review of Patents, through to advisors who can make sensible recommendations about the value and role of technology in Healthcare, Education and Disaster Response, to name just three, is increasingly important in Government. I think there is significant promise for any program that can develop graduates who want to help policy-makers draft legislation and so forth informed by a deep understanding of what is actually technically possible, and what human-centered concerns should inform any systems designed, deployed and evaluated.

The proposal argues that a Human-Centered Computing degree will attract a diverse body of students into the STEM workforce. I concur based on our experiences at Georgia Tech. The Ph.D. has always been roughly 50-50% men/women. While we can always do more to recruit and develop minorities, we have also had a number of African American students in the program as well. I was very impressed by diversity of the students who have expressed an interest in an HCC Ph.D. at the University of Florida; it is much to the credit of the faculty that they have such gender and racial diversity.

In many ways, the curriculum structure of the University of Florida proposal matches those that I have seen at Georgia Tech, Clemson, UMBC, and so forth. This is nice in that it continues to build a brand of Human-Centered Computing that employers recognise irrespective of where the education was attained. I believe that this will not only benefit the broader Human-Centered Computing faculty community, but that it will help the graduates of this program find employment.

I would like to close by saying how excited I am to see a Human-Centered Computing Ph.D. proposal from the University of Florida. There is an important and vibrant community of people focused on fundamental research and workforce training in areas in which a combination of technical and human skills are essential for forward progress. These problems are vital to the success of the nation. I look forward to what the graduates of this program will do in service of these goals.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Rebecca E. Grinter

Benjamin C. Lok
Curriculum Vitae – January 22nd, 2015

CONTACT

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EMPLOYMENT

Current

(since August 2014) **Professor** – Department of Computer and Information Science and Engineering, *University of Florida*
(since June 2011) **Co-Founder and Product Manager,** *Shadow Health, Inc.*
(since 2012) **Adjunct Associate Professor** – Department of Psychiatry and Health Behavior – *Georgia Regents University*

Previous

(August 2009 – August 2014) **Associate Professor** – *University of Florida*
(August 2003 – August 2009) **Assistant Professor** – *University of Florida*
(August 2002 – July 2003) **Postdoctoral Research Fellow** – *University of North Carolina at Charlotte, Advisor:* Professor Larry F. Hodges

EDUCATION

University of North Carolina at Chapel Hill
Ph.D. in Computer Science (May 2002), *Advisor:* Professor Frederick P. Brooks, Jr. (*Dissertation:* Interacting with Dynamic Real Objects in Virtual Environments)
M.S. in Computer Science (May 1999), *Advisor:* Professor Gary Bishop

University of Tulsa
B.S. in Computer Science (*magna cum laude*), Minor in Mathematics (May 1997), *Advisor:* Professor Sujeet Shenoi

HONORS

1. Keynote Speaker:
    a. SVR 2014, XVI Brazilian Symposium on Virtual and Augmented Reality (Bahai Salvador, Brazil)
    b. (Panel) Software Engineer and Architecture for Realtime Interactive Systems Working Group – IEEE Virtual Reality 2013
    c. 8th International Symposium on Visual Computing, Las Vegas, NV (2011)
2. General Co-Chair:
    a. IEEE Virtual Reality 2014
    b. IEEE Virtual Reality 2013
3. Steering Committee: IEEE Virtual Reality Conference (2009-present)
4. Program Co-Chair:
    a. IEEE Virtual Reality 2011
    b. IEEE Virtual Reality 2010
    c. ACM VRST 2009
    d. GameOn North America ’07 (Eurosis)
    e. HCI Advances in Modeling and Simulation (SCS Western Multiconference 2005)
5. Speaker:
    a. National Academy of Science Kavli France-US Frontiers of Science Symposium in Roscoff, France (2008)

6. Paper Awards:
    a. IEEE Virtual Reality 2014 Best Paper Honorable Mention
    b. IEEE Virtual Reality 2014 Best Poster
    c. IEEE Virtual Reality 2008 Best Paper
7. NSF Career Award (2007)
8. University of Florida Student ACM Chapter's CISE Teacher of the Year (2005)
9. ACM SIGGRAPH Symposium on Interactive 3D Graphics 2003 Top 3 Paper (2003)
10. Link Foundation Fellowship in Advanced Simulation and Training (2001)
11. National Science Foundation Fellowship (1997)
12. Barry M. Goldwater Scholarship (1995)

ADVISING

Current

PhD students (*Shivashankar Halan, Diego Rivera-Gutierrez, Andrew Robb, Michael Borish, Andrew Cordar, Stephanie Carnell*)

Post-doctoral fellow (*Dr. Andrea Kleinsmith*)

Post-Doctoral Fellows Alumni

2012, *Dr. Regis Kopper* (Duke University)
2011, *Dr. Aaron Kotranza* (CTO, Shadow Health, Inc.)
2010, *Dr. Yong Ho Hwang*
2008, *Dr. Andrew Raij*

Ph.D. Alumni

2013, *Dr. Joon Hao Chuah*, (Software Development Engineer I, Amazon.com)
2011, *Dr. Brent Rossen* (Software Development Engineer In Team, Microsoft)
2009, *Dr. Aaron Kotranza* (Chief Technology Officer, Shadow Learning, Inc.)
2009, *Dr. John Quarles* (Assistant Professor, University of Texas at San Antonio), LINK Fellow
2008, *Dr. Andrew Raij* (Assistant Professor, University of South Florida)
2008, *Dr. Kyle Johnsen* (Assistant Professor, University of Georgia), HMMI Grad Student Mentor Award

M.S. Alumni

2013, *Guanyun Hu* (Harman International)
2012, *Vaishnavi Krishnan* (VMWare)
2012, *Doaa El-Sheik*
2011, *Mallory McManamon* (Amazon.com)
2010, Shivashankar Halan (PhD program, University of Florida)
2009, *Ethan Blackwelder*
2009, *Lu Cao* (MFA program, University of Florida)
2005, *Cyrus Harrison* (Lawrence Livermore Research Labs)
2005, *George Mora* (Industry)

B.S. Alumni

2009, *Willie Maddox* (Microsoft)
2008, *Harold Rodriguez* (GrooveShark.com)
2008, *Corey Forbus* (Industry)
2007, *Joshua Horton* (Ph.D. program, University of Florida)
2006, *Robert Dickerson* (Visiting Assistant Professor, College of William and Mary), (Ph.D., 2013, Virginia)
2005, *Aaron Kotranza* (Ph.D. program, University of Florida)
2005, *Sayed Hashimi* (Industry)
2005, *Art Homs* (Industry)
2005, *Andrew Joubert* (Industry)
2005, *Sam Preston* (Advanced Engineering Center at Old Dominion University)

FUNDING

Extramural Grants (Total: *$8,975,698*. **PI:** *$4,211,732*, **Co-PI:** *$4,763,966*)
Consultant on grants that use my technology: *$1,195,650*
Internal Grants (*$18,380***)**

Current
PI of Grant

NSF, Medium Grant, (IIS - 1161494) (Co PIs: Lampotang, White, Wendling)
HCC: Medium: Plug and Train: Mixed Reality Humans for Team Training
07/01/2012 – 06/30/2016, Total: $1,087,380

NIH, R01 Grant, (1R01LM010813-01) (PI, 2nd PI: Cendan, Co-Is: Lind, Johnsen)
Neurological Exams Teaching & Evaluation Using Virtual Patients
09/01/2010 – 08/31/2015, Total: $1,833,293

Co-PI of Grant

NIH, R01 Grant, (1R01MD008931-01) (PI: Hirsh [Indiana University - Purdue University Indianapolis])
Virtual Perspective-Taking to Reduce Race and SES Disparities in Pain Care
07/02/2014 - 03/31/2019, Total: $1,839,221

Kimmel Cancer Center Grant, (00005236) (PI: Lind)
Community Driven Development of Interactive Virtual Patient Scenarios to Enhance Provider Communication Skills and Minority Patient Participation in Cancer Clinical Trials
1/1/14 - 12/31/14, Total: $97,163 (UF portion: $6k)

Gold Foundation (PI: Foster [Georgia Health Sciences University])
A Randomized Controlled Study Using Virtual Patients to Enhance Medical Students' Empathic Communication
11/1/2012 – 10/31/13, $25,000

Veterans Administration, Rehabilitation Research and Development Grant (B0339-R) (PI: Levy [Veterans Administration])
Virtual Environments for Therapeutic Solutions (VETS) mTBI/PTSD Phase II
5/1/2013 – 4/30/2016, $750,000

Completed

NIH, R21 Grant, (1R21LM010829-01A1) (PI: Quarles [UT-San Antonio])
A Mixed Reality Conscious Sedation Simulator for Learning to Manage Variability
4/1/2011 - 4/31/2014, $369,473

American Foundation of Suicide Prevention, (PI: Foster [Georgia Health Sciences University])
Medical Students' Proficiency in Suicide Risk Assessment after Interaction with a Virtual Patient in Crisis
$30,000, starting 9/1/12

New Zealand Tertiary Education Commission, (Partner, PI: Billinghurst [University of Cantebury])
Immersive Learning Through Virtual Reality
1/1/2009 – 12/31/2011, Total: $1,117,650 (funded students and travel to NZ)

NIH, R01 Grant, (R01DE013208) (PI: Robinson [UF])
Pain Treatment Decisions: Influence of Sex, Race, and Age
9/1/2009 – 8/31/13, Total: $1,095,473, NIH Score: 121 (top 1.9%)

NSF, Medium Grant, (IIS- 0803652) (PI, Co-PIs: Lind, Ferdig)
HCC-Medium: Mixed Reality Virtual Humans for Training

9/1/2008 – 8/31/2013, Total: $580,000

NSF, Career Award, (IIS-0643557) (PI)
Studying Diversity Issues with Immersive Virtual Humans
8/1/2007 – 7/31/2013, $405,695

NSF, Research Experience for Undergraduates, (IIS-0733800) (PI)
Studying Diversity Issues with Immersive Virtual Humans
8/1/2007 – 7/31/2013, $12,000

USHHS, SAMSHA, (PI: McCance-Katz AAAP)
7/1/2011 – 6/3/2014, $166,667 (UF: $72,086)) – Terminated after 1 year

RORC, Pilot Grant, (Co-I, PI: Levy)
Development of Virtual Humans for PTSD and mTBI
9/1/2010 – 8/31/2011, $38,443

NIH, R03 Grant, (R03LM009646-01) (PI, 2nd PI: Cendan)
Immersive Virtual Patients with Abnormal Clinical Conditions for Medical Student Training
8/15/2008 – 8/14/2010, Total: $137,014
Administrative Grant Award (9/29/2009-9/30/2010), Total: $36,625

NIH, R56 Grant, (Co-I, PI: Robinson)
Pain Treatment Decisions: Influence of Sex, Race, and Age
9/1/2008 – 8/31/09, Total: $323,454

Association of Surgical Education, CESERT Grant, (Consultant, PI: Lind)
The Use of a Virtual Character-Enhanced Simulator to Teach and Assess Breast History and Examination Skills
7/1/2008 – 6/30/2010, Total: $78,000

Drager Medical Contract (Co-PI, PI: Lampotang)
Mixed Reality Simulation for Anesthesia Machine Training
10/1/2008 – 9/30/2009, Total: $35,000

Medical College of Georgia Contract (PI)
Virtual Humans to Teach Medical Communication Skills
3/1/2007 – 5/31/2008, $59,000

Keele University Contract (PI)
Virtual Humans to Teach Pharmacy Communication Skills
4/1/2007 – 6/30/2007, $56,000

NSF CCF-0713983 (PI)
CPA (Gr&Vis): Student Panel at IEEE Virtual Reality 2007 Conference
3/1/2007 – 4/1/2007, $4725

Internal Grants ($*18,380*)

2005 College of Public Health and Health Professions Contract
Contract from Professor Michael Robinson on Virtual Humans for Pain Studies
2005, $3,240

2004 College of Medicine Education Center Grant (Co-PI, PI: Stevens, Lind)
A Pilot Study to Examine the Use of Virtual Patient and Instructor in Teaching Medical Students Communication Skills using an Abdominal pain Scenario
6/1/2004-12/31/2004, $4,900

2004 Professor Sumi Helal Contract

Distance Dining
2004, $10,240

PUBLICATIONS

Edited Books

1. *IEEE Transactions on Visualization and Computer Graphics*, Editors Interrante, V. **Lok, B.,** Majumder, A, Hirose, M., Volume 18, No. 7, 1013-1188.
2. *IEEE Transactions on Visualization and Computer Graphics*, Editors Kiyokawa, K., Klinker, G., and **Lok, B.** Volume 17, No. 9, ISSN 1193-1351..
3. *IEEE Transactions on Visualization and Computer Graphics*, Editors Thalmann, D. and **Lok, B.** Volume 17, No. 7, July 2011, ISSN 873-1032.

Peer-Reviewed Journal Articles

1. Robb, A., Cordar, A., Lampotang, S., White, C., Wendling, A., and Lok, B. "Teaming Up With Virtual Humans: How Other People Change Our Perceptions of and Behavior with Virtual Teammates," (accepted) *Transactions on Visualization and Computer Graphics*, 2015.
2. Lehman, L.A., Marsiske, M., Levy, C., Mann, W., & Lok, B. (2014). Virtual Environments (VEs): The Potentials and Challenges for Use in Cognitive Rehabilitation of Instrumental Activities of Daily Living (IADLs). *Journal of Sport and Human Performance*, Volume 2, Issue 2.
3. Bartley, E. J., Boissoneault, J. Vargovich, A. M., Wandner, L. D., Hirsh, A. T., Lok, B. C., Heft, M. W., & Robinson, M. E. (accepted). The influence of healthcare professional characteristics on pain management decisions. *Pain Medicine.*
4. Foster, A, Chaudhary, N., Murphy, J., Lok, B., Waller, J., Buckely, P. The Use of Simulation to Teach Suicide Risk Assessment to Health Professions Trainees - Rationale, Methodology, and a Proof of Concept Demonstration with a Virtual Patient. *Academic Psychiatry*, 2014; 1(3): 6.
5. Lok, B., Chuah, J., Robb, A., Cordar, A., Lampotang, S., Wendling, A., and White, C. Mixed-Reality Humans for Team Training, *IEEE Computer Graphics and Applications*, Issue 3, May-June 2014, 72-75.
6. Johnson, T., Lyons, R., Kopper, R., Johnsen, K., Lok, B., and Cendan. Virtual patient simulations and optimal social learning context: A replication of an aptitude-treatment interaction effect. *Medical Teacher* 2014; 36(6): 486-494.
7. Rivera-Gutierrez, D., Ferdig, R., Li, J., Lok, B. "Getting the Point Across!: Exploring the Effects of Dynamic Virtual Humans in an Interactive Museum Exhibit on User Perceptions" to Appear in IEEE Transactions on Visualization and Computer Graphics. ***IEEE Virtual Reality 2014 Best Paper Honorable Mention***
8. Quarles, J., Lampotang, S., Fischler, I., Fishwick, P., and Lok, B. "Experiences in mixed reality-based collocated after action review" *Virtual Reality*, 13:3, Springer 201, pp 239-252.
9. Chuah, J. Robb, A., White, C. Wendling, A., Lampotang, S., Kopper(p), R., **Lok, B.** Exploring Agent Physicality and Social Presence for Medical Team Training. (In Press) *Presence: Teleoperators and Virtual Environments,* Vol 22, No. 2, Spring 2013. (approx 18 pages)
10. Chuah, J., Black, E., and **Lok, B.** "Applying Mixed Reality to Simulate Vulnerable Populations for Practicing Clinical Communication Skills" *IEEE Transactions on Visualization and Computer Graphics,* 19 (4), 539-546.
11. Johnson, T., Lyons, R., Chuah, J., Kopper, R., **Lok, B.,** Cendan, J. Optimal learning in a virtual patient simulation of cranial nerve palsies: The interaction between social learning context and student aptitude. *Medical Teacher* 2013;35(1),:e899-907.
12. Robb, A., Kopper(p), R., Ambani, R., Qayyum, F., Lind, D., Su, L., and **Lok, B.** "Leveraging Virtual Humans to Effectively Prepare Learners for Stressful Interpersonal Experiences." *IEEE Transactions on Visualization and Computer Graphics*, 19 (4), 662-670.
13. Wandner, L., Torres, C., Chuah, J., **Lok, B.**, Steven, G., and Robinson, M. "Pain Assessment and Treatment Decisions for Virtual Human Patients," (In Press) *Cyberpsychology, Behavior, and Social Networking*. April 2013, 577-588.
14. Wandner, L., Hirsh, A., Torres, C., **Lok, B.**, Scipio, C., Heft, M., and Robinson, M.. Using virtual human technology to capture dentists' decision policies about pain. *Journal of Dental Research*, 92 (4), 301-305.
15. Shah, H., Rossen, B., Lok, B., Londino, D., Lind, S. D., & Foster, A. (2012). Interactive virtual-patient scenarios: An evolving tool in psychiatric education.*Academic Psychiatry*, *36*(2), 146-150.

16. Cendan, J., and **Lok, B.** "The use of virtual patients in medical school curricula." *Advances in Physiology Education*, March 2012, Vol. 36, No. 1, 48-53.
17. Ferdig, R., Schottke, K., Rivera-Gutierrez, D., & **Lok, B.** Assessing past, present, and future interactions with virtual patients*. International Journal of Games and Computer-Mediated Simulations*, 4(3), 20-37.
18. Lin, C., Laserna, C., Lind, D., Kalaria, C., Aryal, T., **Lok, B.**, Johnsen, K., Kotranza, A., Cendan, J., and Pruitt, J. "User response to the simulation of a virtual patient with cranial nerve injury*", Journal of Bio-Algorithms & Med-Systems*, Volume 8, No. 1, January 2012, 1-12.
19. Rossen, B. and **Lok, B.** "A Crowdsourcing Method to Develop Virtual Human Conversational Agents." *International Journal of Human-Computer Studies*, April 2012, Vol. 70, No. 4, 301-319.
20. Ezzell, Z., Fishwick, P. **Lok, B.**, Pitkin, A., Lampotang, S. *"*An ontology-enabled user interface for simulation model construction and visualization" *Journal of Simulation 5(3): 147-156.*
21. Kotranza, A., Lind, D., and **Lok, B.** "Real-time Evaluation and Visualization of Learner Performance in a Mixed Reality Environment for Clinical Breast Examination," *IEEE Transactions on Visualization and Computer Graphics.* July 2012, Vol. 18, No. 7, 1101-1114.
22. Welch, G., **Rivera-Gutierrez, D.** , Lincoln, P., Whitton, M., Cendan, J., Chesnutt, D., Fuchs, H., Lok, B., Skarbez, R.. "Physical manifestations of virtual patients."*Simulation in Healthcare*, Volume 6, Issue 6, December, 2011.

23. Filichia, L, Halan, S., Blackwelder, E., Rossen, B., **Lok, B.,** Korndorffer, J., Cendan, J. Description of Web-Enhanced Virtual Character Simulation System to Standardize Patient Hand-Offs. Journal of Surgical Residents 2011, 166(2):176-181.
24. Wendling, A., Halan, S., Tighe, P., Le, L., Euliano, T., and **Lok, B.** "Virtual humans versus standardized patients in presenting abnormal physical findings", *Academic Medicine*. 2011; 86(3): 384-388. (Impact Factor: 1.940, ranked #2 of 21 scientific journals of the AAMC).
25. Kotranza, A., Cendan, J., Johnsen, K., and **B. Lok**. "Simulation of a Virtual Patient with Cranial Nerve Injury Augments Physician-Learner Concern for Patient Safety," *Journal on Bio-Algorithms and Med-Systems*, Vol. 6, No. 11, 2010, 25-34.
26. Quarles, J., Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "A Mixed Reality Approach for Interactively Blending Dynamic Models with Corresponding Physical Phenomena" *ACM Transactions on Modeling and Computer Simulation*, Volume 20, Issue 4, October 2010, 1 -22.
27. Deladisma, A., Gupta, M., Kotranza, A., Bittner, B., Imam, T., Swinson, D., Gucwa, A., Nesbit, R., Lok, B., Pugh, C., and D. Lind (2008). "A Pilot Study to Integrate an Immersive Virtual Patient with a Breast Complaint and Breast Exam Simulator into a Surgery Clerkship", *American Journal of Surgery*, Volume 197, Issue 1 , January 2009, 102-106.
28. Kotranza, A., **Lok, B.**, Deladisma, A., Pugh, C., and D. Lind. "Mixed Reality Humans: Evaluating Behavior, Usability, and Acceptability." *IEEE Transactions on Visualization and Computer Graphics*. July/August 2009, Vol. 15, No. 3, 369-382.
29. Quarles, J., Lampotang, S., Fischler, I., Fishwick, P., and **B. Lok**, "Scaffolded Learning with Mixed Reality" *Computers and Graphics: Special Issue on Virtual Reality*, Volume 33, Issue 1, February 2009, 34-46.
30. Ferdig, R., Coutts, J., DiPietro, J., **Lok, B.**, and Davis, N. "Innovative Technologies for Multicultural Education Needs", *Multicultural Education and Technology Journal*, 1(1), 2007, 47-63.
31. Raij, A., Johnsen, K., Dickerson(&), R., **Lok, B.**, Cohen, M., Duerson, M., Pauley, R., Stevens, A., Wagner, P., and D. Lind. "Comparing Interpersonal Interactions with a Virtual Human to those with a Real Human," *IEEE Transactions on Visualization and Computer Graphics*, Vol .13, No. 3, May/June 2007, 443-457.
32. Deladisma, A., Cohen, M., Stevens, A., Wagner, P., **Lok, B.**, Bernard, T., Oxendine, C., Schumacher, L., Johnsen, K., Dickerson(&), R., Raij, A., Wells, R., Duerson, M., Harper, J., and D. Lind. "Do Medical Students Respond Empathetically to a Virtual Patient?" *The American Journal of Surgery*, Vol 193, Issue 6, 2007, 756-760.
33. **Lok, B.**, Ferdig, R., Raij, A., Johnsen, K., Dickerson (&), R. , Coutts, J., Stevens, A., and D. Lind. "Applying Virtual Reality in Medical Communication Education: Current Findings and Potential Teaching and Learning Benefits of Immersive Virtual Patients", *Journal of Virtual Reality*, Spring London, Vol. 10, No. 3-4, 2007, 185-195.

34. **Lok, B.** “Teaching Communication Skills with Virtual Humans” (Invited Article) *IEEE Computer Graphics and Applications*, Vol 26, No. 3, 2006, 10-13.
35. Johnsen, K., Dickerson(&), R., Raij, A., Harrison, C., **Lok, B.**, Stevens, A., and D. Lind. “Using Immersive Virtual Characters to Educate Medical Communication Skills,” *Journal on Presence: Teleoperators and Virtual Environments*, Vol 15, No. 1, 2005, 33-46.
36. Stevens, A., Hernandez, J., Johnsen, K., Dickerson(&), R., Raij, A., Harrison, C. , DiPietro, M., Allen, B., Ferdig, R., Foti, S., Jackson, J., Shin, M., Cendan, J., Watson, R., Duerson, M., **Lok, B.**, Cohen, M., Wagner, P., and D. Lind. “The Use of Virtual Patients to Teach Medical Students Communication Skills.” *The American Journal of Surgery*, Jun; 191(6), 2005, 806-811.
37. Zanbaka, C., **Lok, B.**, Babu, S., Xiao, D., Ulinski, A. and L. Hodges (2005). “Path Visualizations and Cognition in Virtual Environments,” *IEEE Transactions on Visualization and Computer Graphics*, 11.6: 694-705. (AR: 11%)
38. **Lok, B.** (2004). “Towards Merging Real and Virtual Spaces,” *Communications of the ACM*, August 2004, 47.8: 48-53.
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2. Rivera-Gutierrez, D., Kopper, R., Kleinsmith, A., Cendan, J., Finney, G., and Lok, B. (2014), Exploring Gender Biases with Virtual Patients for High Stakes Interpersonal Skills Training, (accepted) 14th International Conference on Intelligent Virtual Agents.

3. Cordar, A., Borish, M., Foster, A., and Lok, B. Building Virtual Humans with Back Stories: Training Interpersonal Communication Skills in Medical Students, (short paper) (accepted) 14th International Conference on Intelligent Virtual Agents.

4. Halan, S., Sai, I., Crary, M., and **Lok, B.**, "Virtual Agent Constructionism: Experiences from Health Professions Students Creating Virtual Conversational Agent Representations of Patients," (accepted) IEEE 14th International Conference on Advanced Learning Technologies (ICALT), 7-10 July 2014, Athens, Greece.
5. Rivera-Gutierrez, D., Kleinsmith, A., Johnson, T., Lyons, B., Cendan, J., and **Lok, B.** Towards a Reflective Practicum of Embodied Conversational Agent Experiences," (accepted) IEEE 14th International Conference on Advanced Learning Technologies (ICALT), 7-10 July 2014, Athens, Greece.
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7. Jendrusch, J., Lampotang, S., Lizdas, D., Gravenstein, N., Ham, D., Lok, B., Quarles, J., "Virtual Humans for Inter-Ethnic Variability Training in Sedation and Analgesia" in the Proceedings of NextMed / Medicine Meets Virtual Reality 21 (NextMed / MMVR21), February 19-22 2014, Manhattan Beach, CA, IOS Press.
8. Chuah, J., Robb, A., White, C., Wendling, A., Lampotang, S., Kopper(p), R., and **Lok, B.** “Increasing Agent Physicality to Raise Social Presence and Elicit Realistic Behavior” (short paper) in *Proceedings of IEEE Virtual Reality 2012,* 19-22.
9. Chuah, J., and **Lok, B**. Experiences in Using a Smartphone as a Virtual Reality Interaction Device. In *Workshop on Off-The-Shelf Virtual Reality*, Orange County, CA. 2012. (5 pages)
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34. Raij, A., Johnsen, K., Dickerson(&), R., **Lok, B.**, Cohen, M., Stevens, A., Bernard, T., Oxendine, C., Wagner, P., Lind, D. “Interpersonal Scenarios: Virtual ≈ Real?” *IEEE Virtual Reality 2006*, 59-66.
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1. Doerner, R., Lok, B., Broll, W (2011). "Social Gaming and Learning Applications: A Driving Force for the Future of Virtual and Augmented Reality?" in Brunett, Guido; Coquillart, Sabine; Welch, Greg (Eds.): Virtual Realities - Dagstuhl Seminar 2008, Springer, Wien, New York, 2011 (ISBN 978-3-211-99177-0), pp. 51-76
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Abstracts/Poster/Presentations

1. Sia I, **Halan S**, Lok B, Crary MA, *Improving Clinical Dysphagia Interviewing Skills by Virtual Patient Creation.* Dysphagia Research Society Annual Meeting (2014).
2. Kim, T., Foster, A., Chaudhary, N., Murphy, J., Lok, B., Borish, M., Cordar, A., & Buckley, P. (2014, May). A Randomized Controlled Study Using Virtual Patients to Enhance Medical Students' Empathic Communication. Poster presented at the annual meeting of American Psychiatric Association, New York, NY. **Outstanding Resident Paper In the Curriculum Development and Education Projects (top 4 out of 428) and APA Area 5 Assembly Medical Student Poster Award**
3. Robb, A. and Lok, B. Social Presence in Mixed Agency Interactions. IEEE Virtual Reality 2014, **Best Poster Award**.
4. Jendrusch, J., Lampotang, S., Lizdas, D., Gravenstein, N., Ham, D., Lok, B., and Quarles, J. "Virtual Humans for Inter-Ethnic Variability Training in Sedation and Analgesia," *Proceedings of 21st Medicine Meets Virtual Reality Conference (MMVR21)* 2014, 196: 175-81.
5. Ambani, R., Robb, A., Qayyum, F., Sensenig, R., Barkan, I., Tiko-Okoye, C., **Lok, B.**, Lind, D. A Novel Mixed Reality Human Simulator Improves Medical Student Comfort and Competence in Digital Rectal Exam. *Association for Society for Simulation in Healthcare Meeting*, Orlando, FL Jan, 2013.
6. Chuah, J. , Black, E., Kelly, M., Thompson, L**., Lok, B.** Applying mixed reality to simulate protected populations for practicing clinical communications skills. Paper presentation at the *2013 Pediatric Academic Societies' Annual Meeting*, Washington, D.C., May 5, 2013.
7. Johnson, T., Lyons, R., Chuah, J., Kopper, R., **Lok, B.,** Cendan, J.. Medical students prefer unguided over guided communication for history-taking rehearsal in a virtual patient environment. Poster presented at the *13th International Meeting on Simulation in Healthcare*, January 26-30, 2013, Orlando, FL.

8. Moran, R., El Shaik, D., Black, E.W., **Lok, B**. Preparing for low probability encounters with high consequence: Using a screen-based virtual human program to simulate uncommon pediatric cases. Platform presentation at the *2013 Pediatric Academic Societies' Annual Meeting*, Washington, D.C., May 5, 2013.
9. Torres, C., Wandner, L., Alqudah, A., Hirsh, A., **Lok, B.**, & Robinson, M. (2013, May). Pain assessment and treatment decisions among students in the United States and Jordan. Poster session presented at the *32nd Annual Scientific Meeting of the American Pain Society*, New Orleans, LA.
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12. Halan, S., Rossen, B., Crary, M., and **Lok, B.** 2012. Constructionism of virtual humans to improve perceptions of conversational partners. In *CHI '12 Extended Abstracts on Human Factors in Computing Systems* (CHI EA '12). ACM, New York, NY, USA, 2387-2392.
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15. Chuah, J. , **Lok, B.**. Hybrid Virtual-Physical Entities. Poster. *International Symposium on Mixed and Augmented Reality (ISMAR)*. Atlanta, GA. 2012.
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18. Lyons, R., Cendan, J., **Lok, B.** (April 2012). Optimizing Simulation Using Virtual Patients with Complex Neurologic Conditions. *27th Annual Meeting of the Society for Industrial and Organizational Psychology*, SanDiego, CA.
19. Wandner, L., Heft, M., Lok, B., Hirsh, A., George, S., Horgas, A., Atchinson, J., Torres, C., & Robinson, M. (2012, August). Healthcare professionals' pain assessment and treatment decisions using virtual human technology. Poster session presented at the *14th World Congress on Pain*, Milan, Italy.
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23. Cendan, J., Lyons, R., Chuah, J., Johnson, T., Khalil, M., and **Lok, B.** Understanding the relationship between cognitive load and learning in a technical medical education environment. *AAMC Modernizing Medicine*, MedEdPortal Abstract Session, Denver, CO, November, 2011.
24. Levy, C., Halan, S., Kotranza, A., Krishnan, V., Lok, B., Oliverio, J., Omura, D., Poster 14 Development of a Therapeutic Virtual Grocery Store to Treat Cognitive and Emotional Dysfunction in *Mild Traumatic Brain injury and Posttraumatic Stress Disorder: Prototype Progress Report, PM&R,* Volume 3, Issue 10, Supplement 1, September 2011, Page S180, ISSN 1934-1482,

25. Johnson, J., Brown, S., Lord, T., Rosson, B., Laserna, C., Park, M., Kotranza, A., **Lok, B.,** Lind, D. Internal Medicine Residents and a Mixed Reality Human Breast Simulator. Presented to the *Southern Group on Educational Affairs*, Houston, TX April, 2011.
26. Sims, S., Chuah, J., **Lok, B.,** Cendan, J. Evaluation of the Virtual Standardized Patient (VSP) Educational Tool for Enhanced Medical Student Skills. Poster. *Association for professors of gynecology and obstetrics (APGO)/Council on Resident Education in Obstetrics/Gynecology (CREOG) meeting 2011*. March, 2011.
27. Wier, J., Carrick, J., Rossen, B., Laserno, C., Park, M., Nesbit, R., Lind, J., Kotranza, A., **Lok, B.**, Lind, D. Integration of a Mixed Reality Patient Breast Simulator into a Surgery Clerkship. Presented to the *Association for Surgical Education Meeting*, Boston, MA, March, 2011.
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29. DiPietro, J., Ferdig, R., Cao, L., Blackwelder, E., Halan, S., **Lok, B.** (2010). Mixed-reality simulations for education: Teaching and learning through virtual character interactions. American Educational Research Association (AERA) Conference. Denver, CO.
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40. Cendan, J., Miller, B., Wang, X., Horton(&), J., and **B. Lok.** “Development of Virtual Patient with Fixed Cranial Nerve Pathology.” *Southern Group on Education Affairs 2008*, April 3-5, Nashville, TN.
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43. Deladisma, A., Imam, T., Kotranza, A., Raij, A.*, Bittner, J., **Lok, B.**, Pugh, C., and D. Lind. "The Use of Mixed Reality Humans to Teach Clinical Skills" *47th Annual Conference on Research in Medical Education (RIME)*, October 31-November 5th, 2008, San Antonio, TX.
44. Deladisma, A. Kotranza, A., Shah, H., Fox, P., Gucwa, A., Roseen, B., Imam, T., Wang, S., Pugh, C., Lok, B., and Lind, D. The Use of a Mixed Reality Breast Simulator with an Innovative Feedback System (Touch Map) to Teach Breast History-Taking and Physical Examination Skills. Abstract presented to the *San Antonio Breast Meeting* (December 2008).
45. Deladisma, A., Gupta, M., Kotranza, A.*, Bittner, J., Imam, T., Swinson, D., Nesbit, R., **Lok, B.**, Pugh, C., D. Lind. "A Pilot Study to Integrate an Immersive Virtual Patient with a Breast Complaint and Breast Exam Simulator into a Medical Student Surgery Clerkship." *Association for Surgical Education, Surgical Education Week 2008*.
46. Gupta, M., Deladisma, A., Kotranza, A.*, Craig, J., Bittner, J., Johnsen, K., **Lok, B.**, and D. Lind. "The Use of a Virtual Character-Enhanced Simulator to Teach Breast History and Examination Skills." *8th Annual International Meeting on Simulation in Healthcare*. San Diego, CA. Jan 13-16, 2008.
47. Gucwa, A., Beatty, J., Shah, H., Deladisma, A., Kotranza, A., Raij, A., **Lok, B.,** Pugh, C., Lind, D. The Use of a Mixed Reality Human Interaction to Assess Empathy. Abstract presented to the *Society for Simulation in Healthcare Meeting,* Sept 2008.
48. Gucwa, A., Beatty, J., Kotranza, A., Rossen, B., Pugh, C., **Lok, B.**, and D. Lind "Gender Differences Among Students Undergoing a Mixed Reality Simulation in Breast History-Taking and Physical Examination" *Association of Women Surgeons 2008*.
49. Shah, H., Fox, P., Rossen, B., Deladisma, A., Lord, T., Gehlot, A., Mouna, A., Rossen, B., Betty, J., Gucwa, A., **Lok, B.,** Lind D. The Use of Web-Based Interactive Virtual Clinical Scenarios (Virtual People Factory) as an Educational Tool to Introduce History-Taking Skills. Abstract presented to the *Society for Simulation in Healthcare Meeting*, Sept 2008.
50. Deladisma, A., Mack, D., Bernard, T., Oxendine, C. Szlam, S., Wagner, P., Kruse, E., **Lok, B.**, and D. Lind. "Virtual Patients Reduce Anxiety and Enhance Learning when Teaching Medical Student Sexual-History Taking Skills", *Association for Surgical Education 2007 Surgical Education Week*. (Same as Mack et al. 07 abstract)
51. Mack, D., Deladisma, A., Bernard, T., Oxendine, C., **Lok, B.**, and D. Lind. "Virtual Patients Reduce Anxiety and Enhance Learning when Teaching Medical Student Sexual-History Taking Skills", *Society for Simulation in Healthcare*. (Research Abstract Award 2nd place Education)
52. Bernard, T., Stevens, A., Wagner, P., Bernard, N., Schumacher, L., Johnsen, K., Dickerson(&), R., Raij, A., **Lok, B.**, Duerson, M., Cohen, M. and D. Lind. "A Multi-Institutional Pilot Study to Evaluate the Use of Virtual Patients to Teach Health Professions Students History-Taking and Communication Skills." *Society of Medical Simulation Meeting*. (Ranked #1 out of 104 accepted)
53. Cohen, M., Stevens, A., Wagner, P., **Lok, B.**, Bernard, T., Oxendine, C. Schumacher, L., Johnsen, K., Dickerson(&), R., Raij, A., Ross, R. Duerson, M., Parimala, J., and D. Lind. "How Comparable are Medical Student Empathetic Interactions in a Similar Virtual Patient/Standardized Patient Abdominal Pain Scenario?" *Southern Group on Education Affairs 2006*.
54. Deladisma, A., Cohen, M., Stevens, A., Wagner, P., **Lok, B.**, Bernard, T., Oxendine, C., Schumacher, L., Johnsen, K., Dickerson(&), R., Raij, A., Wells, R., Duerson, M., Harper, J., and D. Lind. "Is There a Difference in the Empathetic Response of Health Professions to Standardize Patients and Virtual Patients?" *Association of Surgical Education 2006*. (Clinical Research Award 2nd place, same as ASE abstract)
55. Stevens, A., Cohen, M., Johnsen, K., Dickerson(&), R., Raij, A., Wells, R., Oxendine, C., Wagner, P., Bernard, T., Cendan, J., Duerson, M., Pauly, R., **Lok, B.**, and D. Lind, "Implementing a Virtual Patient (VP) into the Medical School Curriculum at the University of Florida (UF) " *Southern Group on Education Affairs 2006*.
56. Babu, S., Zanbaka, C., Jackson, J., Chung, T., **Lok, B.**, Shin, M., and L. Hodges. Virtual Human Physiotherapist Framework for Personalized Training and Rehabilitation (poster).

Graphics Interface 2005, Victoria, British Columbia, Canada, May 9-11, 2005.
57. Stevens, A., Hernandez, J., Johnsen, K., Dickerson(&), R., Raij, A., Jackson, J., Shin, M., Cendan, J., Duerson, M., **Lok, B.**, and D. Lind (2005). The Use of Virtual Patients to Teach Medical Students Communication Skills. *Association of Surgical Education 2005*.
58. Stevens, A., Hernandez, J., Johnsen, K., Dickerson(&), R., Raij, A., Jackson, J., Shin, M., Cendan, J., Duerson, M., **Lok, B.**, and D. Lind (2005). The Use of Virtual Patients to Teach Medical Students Communication Skills. *Southern Group on Education Affairs 2005*. (Ranked #1)
59. Cendan, J., **Lok, B.,** Harrison, C., Johnsen, K, Dickerson, R., Shin, M., Stevens, A., Duerson, M., Lind, D. "Multimodal Interaction with Life-Sized Virtual Characters for Training and Education" *Florida Technology Transfer Conference, 2004*.
60. Cendan, J., **Lok, B.,** Harrison, C., Johnsen, K, Dickerson, R., Shin, M., Stevens, A., Duerson, M., Lind, D. "The Use of Virtual Patients and Instructors to Teach Clinical Presentations", 4th Annual Medical Education Week, College of Medicine, University of Florida, 2004.

Dissertation

Lok, B. (2002). Interacting with Dynamic Real Objects in Virtual Environments. Ph.D. Dissertation, Department of Computer Science, University of North Carolina at Chapel Hill.

SERVICE and ACTIVITIES

Steering Committee:
- IEEE Virtual Reality (2009-present)

General Co-Chair:
- IEEE Virtual Reality 2014 (Minnesota)
- IEEE Virtual Reality 2013 (Orlando)

Program Co-Chair:
- IEEE Virtual Reality 2011 (Singapore)
- IEEE Virtual Reality 2010 (Boston, MA)
- ACM Symposium on Virtual Reality Software and Technology 2009 (Kyoto, Japan)
- IEEE ISMAR 2009 Area Chair (Orlando, FL)
- GameOn North America '07 (Gainesville, FL)
- Human-Computer Interaction Advances in Modeling and Simulation - Society for Computer Simulation Western Multiconference 2005 (New Orleans, LA)

Journal Associate Editor
- ACM Computing Surveys
- Frontiers in Virtual Environments
- International Journal of Human-Computer Studies
- Simulation: Transactions of the Society for Modeling and Simulation

Program Committee:
- IEEE Virtual Reality (2003-2011)
- IEEE 3D User Interfaces (2011)
- IEEE ISMAR (2004-2006, 2008-2009)
- International Conference on Intelligent Virtual Agents (IVA) (2009-2010)
- ACM Symposium on Virtual Reality Software and Technology (2007-2010)
- INTUITION Workshop & Conference on Virtual Reality and Virtual Environments (2007-2009)
- Visual Learning Conference (2007-20010)
- Eurographics Symposium on Virtual Environments (2007)
- International Symposium on Visual Computing (2007-2010)

Panels Chair: IEEE Virtual Reality 2007
Videos Chair: IEEE Virtual Reality 2009
Posters Chair: IEEE ISMAR 2006, ACM VRST 2007, IEEE Virtual Reality 2010
Tutorials Chair: IEEE Virtual Reality 2006
Session Chair: IEEE Virtual Reality (2007-2004), WMC SIMCHI 2005
Best Paper Award Committee: IEEE Virtual Reality (2004-2005)
Conference Reviewer: (In addition to the above conferences), SIGGRAPH (2008), Eurographics Symposium on Virtual Environments, IEEE Visualization, Pacific Graphics

Journal Reviewer:

- Journal on Presence: Teleoperators and Virtual Environments
- IEEE Transactions on Computer Graphics and Visualization
- ACM Transactions on Modeling and Computer Simulation
- Transactions on Simulation and Modeling
- Journal on Graphics Tools
- SIGGRAPH (Transactions on Graphics)
- International Journal of Human-Computer Studies
- Journal of Virtual Reality and Broadcasting
- Journal of Expert Review of Medical Devices

Book Reviewer: McGraw-Hill Publishing, Cambridge University Press

Proposal Review Panels: National Science Foundation (2004, 2007, 2008, 2009, 2011, 2012, 2013, 2013)

Invited Panels:

- Keynote Panelist: Software Engineer and Architecture for Realtime Interactive Systems Working Group – IEEE Virtual Reality 2013
- Avatar/Virtual Human Workshop – Department of Defense, Marina Del Ray, California, April, 2009. (One of two groups invited from academia)
- Virtual Worlds and Virtual Humans – *France-US Frontiers of Science Symposium, **National Academy of Science***, Roscoff, France, November, 2008
- OSCEs and Virtual Patient Simulations in Pharmacy Education: International Experiences and Research Findings – *2008 Joint American Association on College of Pharmacy/ Association of Faculties of Pharmacy in Canada Annual Meeting*, Chicago, IL, July 22, 2008.
- Medical and Healthcare Simulation Future Mapping Session – *National Center of Simulation*, Orlando, FL, May, 2008
- User Studies in VR: What Can We Learn From Them and What Are They Good For? - *IEEE Virtual Reality 2008*, March, 2008
- Student Panel: Building the Future of and a Career in VR - *IEEE Virtual Reality 2007*, March 2007
- VR Support of Clinical Applications: Collaboration, Politics, & Ethics - *IEEE Virtual Reality 2007*, March, 2007
- Bridging Simulation and HCI – *SIMCHI '05*, January 2006

TEACHING

University of Florida

Spring 2013: **Human Computer Interaction** *(Undergrad/Grad)*
Spring 2012: **Human Computer Interaction** *(Undergrad/Grad)*
Fall 2011: Parental Leave
Spring 2011: Sabbatical
*Fall 2010***: Human Computer Interaction** (33 Undergrad/Grad)
*Spring 2010***: Human Computer Interaction** (42 Undergrad/Grad)
Spring 2009: **Virtual Environments** (CAP6930/4930) (7 Undergrad/Grad)
*Fall 2008***: Human Computer Interaction** (CAP6930/4930) (37 Undergrad/Grad)
*Spring 2008***: Computational Structures in Computer Graphics** (CAP4730), (38 Undergraduates)
*Fall 2007***: Virtual Environments (4 university course)** (CAP6930/4930) (4 Undergrad/Grad)
*Fall 2007***: Human Computer Interaction** (CAP6930/4930) (15 Undergrad/Grad)
*Spring 2007***: Advanced Computer Graphics and Virtual Environments** (CAP6930/4930) (5 Grad)
*Fall 2006***: Human Computer Interaction** (CAP6930/4930) (9 Grad)
*Spring 2006***: Computational Structures in Computer Graphics** (CAP4730), (46 Undergraduates)
*Fall 2005***: Design and Creation of Virtual Environments** (CIS6930/4930), (19 Undergrad/Grad)
*Spring 2005***: Computational Structures in Computer Graphics** (CAP4730), (51 Undergraduates)
*Fall 2004***: Human Computer Interaction** (CAP6930/4930), (21 Undergrad/Grad)
*Spring 2004***: Computational Structures in Computer Graphics** (CAP4730), (55 Undergraduates)
Fall 2003: **Design and Creation of Virtual Environments** (CIS6930/4930), (19 Undergrad/Grad)

University of North Carolina at Charlotte

Spring 2003: **Design and Analysis of Algorithms** (ITCS2215), (40 Undergraduates)

University of North Carolina at Chapel Hill

Fall 2000: **Introduction to Computer Graphics** (COMP136), (12 Undergrad/Grad)

PATENTS

PCT/US2010/050393 REAL-TIME FEEDBACK OF TASK PERFORMANCE. International Filing Date: 9/27/10.

PCT/US10/023877 COMMUNICATION AND SKILLS TRAINING USING INTERACTIVE VIRTUAL HUMANS. International Filing Date: 2/13/09.

PCT/US-2010-0159434-A1 MIXED SIMULATOR AND USES THEREOF.

CONSULTING

September 2009 – August 2011 – SimCoach, University of Southern California (ICT)

INVITED TALKS

International

Virtual Worlds and Virtual Humans – France-US Frontiers of Science Symposium, National Academy of Science, Roscoff, France, November, 2008

Virtual Realities Dagstuhl Seminar, Schloss Dagstuhl (Germany), 2008

Invited Short Course: Virtual Environments, Jaypee Institute of Information Technology, New Delhi, India, March 24th-28th, 2008.

Vision Imaging and Virtual Environments Research Group, University of College London (2005)

National

University of Central Florida, Florida Interactive Entertainment Academy (2014)

Full Sail University (2014)

University of Minnesota, Department of Computer Science (2013)

University of Virginia, College of Medicine Educational Grand Rounds (2012)

ACM, University of Tulsa (2012)

National Rx Drug Abuse Summit (2012)

College of Nursing, University of Central Florida (2011)

College of Medicine and Nursing, University of South Florida (2011)

AAAP Annual Meeting, Scottsdale, AZ (2011)

Keynote, 8th International Symposium on Visual Computing, Las Vegas, NV. (2011)

Tufts Health Care Institute Program on Opiod Risk Management, Boston, MA. (2011)

Tulsa Undergraduate Research Challenge, University of Tulsa (2010)

Northwestern University (2010)

Tulsa Undergraduate Research Challenge, University of Tulsa (2008)

Northwestern University (2008)

Department Seminar, University of Georgia (2007)

Education Grand Rounds, Medical College of Georgia (2007)

Invited Lecture Series, Medical College of Georgia (2007)

Institute of Creative Technologies, University of Southern California (2006)

College of Medicine, University of Southern California (2006)

Graduate Computer Science Colloquium Series, University of North Carolina at Charlotte (2005)

Computer Science Colloquium Series, University of North Carolina at Chapel Hill (2005)

Computer Science Colloquium Series, Old Dominion University (2005)

Virginia Tech Virtual Environments Research Group, Virginia Polytechnic University (2004)

Center for Information Security, University of Tulsa (2004)

Tulsa Undergraduate Research Challenge Reception, University of Tulsa (2004)

Human-Interface Laboratory, University of Washington (2003)

State

Florida Research Consortium, Technology Transfer Consortium (2004)

Local

The Dynamo: UF Chapter of the Roosevelt Institute (keynote) (2010)

UF Health Sciences Center Symposium (2010)
Simulation Faculty Learning Community Seminars (2008)
First Fridays Lecture Series, Sigma Xi Honor Society (2007)
Pain Research Forum, Department of Health and Human Performance (2007)
Cognitive Forum, Department of Psychology (2007)
Geriatric Education Group (2005)
Association of Digital Art and Media (2005)
School of Education Human-Computer Interaction Course (2004)
Center for Learning and Simulation (2004)
Introduction to Digital Arts and Science Course (2004)
Center for Neurological Science (2004)
Medical Educational Grand Rounds (2004)
Gainesville VA Hospital, Brain Rehabilitation Research Center (2004)
G2V2, University of Florida, (2003)

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gmccune@ufl.edu

RESEARCH INTERESTS

I am actively involved in computing education research through the integration of computing across the middle and high school curriculum. In particular, my research focuses on studying how people learn and apply computing to solve problems. More broadly, my research focuses on designing learning technologies and learning environments to support STEM learning through interest and project-based learning. My research approach involves the iterative design, refinement, and sustainability of curriculum, teacher professional development, technology, and program development to support and study learning in formal and informal learning environments.

EDUCATION

Postdoctoral Research, Georgia Institute of Technology, 2012, Computer Science Education

Ph.D., Georgia Institute of Technology, 2011, Computer Science

M.S., Georgia Institute of Technology, 2005, Computer Science

B.S., Syracuse University, 2002, Computer Engineering

Study Abroad Program, CITY University of London, 2001, Computer Systems Engineering

PROFESSIONAL EXPERIENCE

University of Florida, Computer & Information Sciences & Engineering (CISE) Department, 2014 – Present, Tenure-Track Assistant Professor

Clemson University, School of Computing, Human Centered Computing Division, 2013 – 2014, Tenure-Track Assistant Professor

Georgia Institute of Technology, Office of Outreach, Enrollment, and Community, 2011-2012, Postdoctoral Researcher & Engagement Programs Coordinator

Georgia Institute of Technology, Learning By Design Lab, May 2005- August 2011, Graduate Student Assistant

Georgia Institute of Technology, OSHA Training Institute, May - December 2009, Graduate Student Assistant

IBM, Shark Program Management Group, January – August 2003, Co-op Student

IBM, Pervasive Computing Group, Summer 2002, Intern

IBM, Intellectual Assets and Property Licensing, Summer 2000 & Summer 2001, Summer Intern

IBM, Microelectronics Division, Summer 2000, Intern

Dun & Bradstreet, Summer 1999, Intern

MEMBERSHIPS

Member, Association for Computing Machinery, ACM, (2012 - Present)
Member, ACM SIG CSE, (2012 - Present)
Member, American Educational Research Association, AERA (2008 - Present)
Member, American Society of Engineering Education, ASEE, (2012 – Present)
Member, Cognitive Science, CogSci, (2008)
Member, Computer Science Teachers Association, CSTA (2011 - Present)
Member, International Society of the Learning Sciences, ISLS (2006 - Present)

PROFESSIONAL ACTIVITIES

College Board, Advanced Placement Computer Science Principles Development Committee Member (2013 – Present)

Y-STEM, Board Member, Computer Science Education and Learning Environment (2011 - Present)

ISLS Communications Committee, Publication Manual Editor (International) (2011-2012)

PUBLICATIONS

Journal Articles (Peer Reviewed)

Herro, D., **Gardner-McCune,C.,** and Boyer, D. M (under-review). *Perceptions of Coding with MIT App Inventor: Pathways for their Future*. Journal for Computing Teachers.

King, L., **Gardner-McCune, C**., & Vargas, P. (2014)"Re-Discovering and Re-Creating African American Historical Accounts through Mobile Apps: The role of mobile technology in history education." *Journal of Social Studies Research - Special issue on the theme of Research on Technology in the Social Studies: PreK-College.*

Conference Proceedings (Peer Reviewed)

Gardner-McCune, C., Thomas, S., Hays, T., Lakshmanan, R., Sen, S., Vargas, P., King, L. (2014). *Integrating App Inventor into a Middle School Cross-Disciplinary Project*. MIT App Inventor Summit. Cambridge, MA.

Thomas, S., Jimenez, Y., King, L., Vargas, P., and **Gardner-McCune, C.** (*Under Review*). Integrating App Inventor into an 8th Grade Cross-Disciplinary Project: Development of a Computing Curriculum for Middle School.

In *Proceedings of the 45th SIGCSE technical symposium on Computer science education* (SIGCSE '15). ACM, Kansas City, MO, USA.

Cunha, N., McCune, D, & **Gardner-McCune, C**. (Under Review). *Coding is Writing: Teaching High School Students the Interdisciplinary Uses of Writing and Coding.* In *Proceedings of the 45th SIGCSE technical symposium on Computer science education* (SIGCSE '15). ACM, Kansas City, MO, USA.

Gardner-McCune, C., McCune, D., Stallworth, C., & Edwards, C. (2013). *"I-3 Experience: Expanding Research and Design Opportunities for Under-represented High School Students."* American Society of Engineering Education: Computers in Education Division.

Daily, S., **Gardner-McCune, C.**, Eugene., W., Remy, S., McMullen, K., & Hall, P. (2013)*"Alternate Pathways to Careers in Computing: Recruiting and Retaining Women Students."* American Society of Engineering Education: Computing & Information Technology Division.

Arpaci-Dusseau, A., Astrachan, O., Barnett, D., Bauer, M., Carrell, M., Dovi, R., Franke, B., **Gardner, C.**, Gray, J., Griffin, J., Kick, R., Kuemmel, A., Morelli, R., Muralidhar, D., Osborne, R. B., Uche, C. (2013*). "Computer Science Principles: Analysis of a Proposed Advanced Placement Course."* Proceedings of the SIGCSE'13, pp. 251-256, March 6–9, 2013, Denver, Colorado, USA

Clegg, T, L., **Gardner, C.M.** & Kolodner, J. L. "Technology for Supporting Learners in Out-of-School Learning Environments," *Proceedings of the Ninth International Conference on Computer Supported Collaborative Learning (CSCL'11),* Hong Kong, China (July 2011)

Gardner, C.M. & Kolodner, J. L. "Turning on Minds with Computers in the Kitchen: Supporting Group Reflection in the Midst of Engaging Hands-on Activities," Proceedings *of the Seventh International Conference on Computer Supported Collaborative Learning (CSCL'07).* New Brunswick, NJ. (July 2007)

Gardner, C. M., Clegg, T. L., Williams, O. L., & Kolodner, J. L. "Messy Learning Environments: Busy Hands and Less Engaged Minds," *Proceedings of the Seventh International Conference of the Learning Sciences,* Bloomington, IN (June 2006)

Clegg, T., **Gardner, C.**, Williams, O., & Kolodner, J. (2006). "Promoting Learning in Informal Learning Environments," *Proceedings of the Seventh International Conference of the Learning Sciences,* Bloomington, IN (June 2006)

<u>White Papers</u> (Peer Reviewed)

Gardner-McCune, C. (2014) A Case for Learning Research in Computer Science Education. Future of Computer Science Summit I. Orlando, Fl. (35% Acceptance rate).

Abstracts/Extended Abstracts (Peer Reviewed)

Soleimani, A., Smith, K., Zeng, J., Green, K. E., Herro, D., Santiago, J., Sharma. S. Tonapi, M., Vijaykumar, A., Walker, I., & **Garder-McCune, C**.(2014) "Learning with CyberPLAYce; a Cyber-Physical Learning Environment for Elementary Students Promoting Computational Expression (archival video)." In *Proceedings of CHI 2014: the ACM Conference on Human Factors in Computing Systems*, Toronto, Ontario, Canada.

Zare, A, McMullen, M., **Gardner-McCune, C.** (2014) "Design of an Accessible and Portable System for Soccer Players with Visual Impairments". CHI '14 Extended Abstracts: ACM SIGCHI Conference on Human Factors in Computing Systems Proceedings.

Herro, D. Boyer, D. M., and **Gardner-McCune, C**.(2014). *Teachers using app development to teach computational thinking: Informing the field*. Structured poster session entitled, "Research on Digital Media, Games, and Simulations in Teacher Education", in collaboration with 9 academic institutions, to be presented at American Educational Research Association (AERA), Philadelphia, PA, April 3-7, 2014.

Boyer, D. M., Herro, D., & **Gardner-McCune, C.** (2014). *Developing computational thinkers: A working example for using app programming with middle school students.* Roundtable proposal to be presented at the American Educational Research Association (AERA) Conference, Philadelphia, PA, April 3-7, 2014.

Gardner-McCune, C. *Structuring Social and Physical Workspaces to Increase Student Engagement and Learning in Personally Relevant Science Learning Context.* Symposium: Inside Personally Relevant Science Learning Contexts: How Do Learners Connect Science to their Everyday Lives? National Association of Research for Science Teaching Annual Conference. Rio Grande, Puerto Rico (April, 2013)

PRESENTATIONS

Boyer, D.M., Herro, D., & **Gardner-McCune, C**. (April, 2014). Developing computational thinkers: A working example for using app programming with middle school students. Poster presented at the American Educational Research Association (AERA) Conference, Philadelphia, PA, April 3-7, 2014.

Calzadilla, J., Harmon, C., Haynie, K., Housie, L., Flair, R., Jackson, J., Kelly, R., Mets, S., Parchuri, N., Rex, J., Summerton, K., Thomas, S., Zheng, S, **Gardner-McCune, C.**. (2014) Python Game Design for Children: Games and Programming Resources. Focus on Creative Inquiry Poster Forum. April 3, 2014.

Becwar, R., Sieron, D., Black, W., Roberson, T., & Paquette, B., **Gardner-McCune, C**., & McMullen, K. (2014) Using Virtual Spatial Audio to Aid Visually Impaired Athletes. Focus on Creative Inquiry Poster Forum. April 3, 2014.

Thomas, S. & **Gardner-McCune, C.** (2014) Supplemental Education Takes One Higher: The Right Answers to the SAT Test. National Youth at Risk Conference March 2014. Savannah, GA.

Gardner-McCune, C. (2013) *Mobile Computing for Entrepreneurs*. March 23, 2103. CRA-W Distinguished Lecture at presented at AAEIT.

Gardner-McCune, C. *Structuring Social and Physical Workspaces to Increase Student Engagement and Learning in Personally Relevant Science Learning Context.* Symposium: Inside Personally Relevant Science Learning Contexts: How Do Learners Connect Science to their Everyday Lives? National Association of Research for Science Teaching Annual Conference. Rio Grande, Puerto Rico (April, 2013)

Gardner-McCune, C. (2013)*"Beyond Educational Software",* Clemson School of Computing Graduate Student Association Tech Talk, Clemson, SC (February 12, 2013)

Gardner-McCune, C. (2012) Black Girls Code – Parent Forum Panelist, Atlanta, GA.

Gardner-McCune, C. (2012) *"CS Principles Pilot II at GT",* High School Computer Science Teacher Professional Development Workshop, Atlanta, GA (July 20, 2012)

Gardner-McCune, C. (2012) *"CS Principles Pilot II at GT",* CS4HS – University of Alabama, Tuscaloosa, AL, (June 29, 2012)

Gardner, C. M. (2011) *"Supporting Cognitive Engagement in a Learning-by-Doing Learning Environment: Kitchen Science Investigators,"* DILL Research Group, U.C. Berkeley, Berkeley, CA (November 4th, 2011)

Gardner, C. M., & Whitlow, J. (2011) "Building a Pipeline and a Community of Women in Computing through Enrollment Programs," Tennessee Celebrating Women in Computing (TN-WIC), Chattanooga, TN. (October 15, 2011)

Gardner, C. M., & Clegg, T. L. (2009) "Kitchen Science Investigators: Kicking up the Science a Notch in your Afterschool." National After-School Association, New Orleans, LA. (April 2009)

Gardner, C. M. (2008) "Social, Cognitive, Historical, Technological and Material Dimensions of Learning Trajectories in Designed Learning

Environments." ICLS 2008 Doctoral Consortium, Utrecht Netherlands. (July 2008)

Gardner, C.M., (2007) Karkin, S., Charles, L., & Kolodner, J. L. "Case-Based Reasoning Reflections." AERA, Chicago, IL (April 2007)

HONORS AND AWARDS

PACE: Future of Computing Education Summit. Washington, DC, August 2014. Nominated and Invited participant.

Future of Computer Science Education Summit II. Stanford University, California, March 2014. Nominated and Invited participant.

Future of Computer Science Education Summit I. Orlando, Florida, January 5-7, 2014. Invited participant.

CRA-W Distinguished Lecture, March 23, 2103.

CRA-W DREU Mentor (2013 - Present)

Outstanding Staff Performance Award, Georgia Tech (2012).

Facilitating Academic Careers in Engineering and Science (FACES) Postdoctoral Fellowship, Georgia Tech (April 2009).

Outstanding Graduate Teaching Assistant Award, Georgia Tech College of Computing (April 2009)

ICLS 2008 Doctoral Consortium, ISLS (July 2008).

Facilitating Academic Careers in Engineering and Science (FACES) Doctoral Fellowship, Georgia Tech (2005 – 2011).

Student Teacher Enhancement Partnership (STEP) Fellowship, Georgia Tech (2004 – 2005).

GEM Fellowship, National Consortium for Graduate Degrees for Minorities in Engineering and Science Fellowship (2002 – 2004).

SPONSORED RESEARCH

"Developing Computational thinking through Application Programming" – HEHD, Clemson University, $20,000, ($6,666), (2013)
PI: Dr. D. M. Boyer, **Co-PIs: Drs. C. Gardner-McCune** and D. Herro

"WATCH – Workshop for Actively Thinking Computationally and Historically: Social Studies teachers, South Carolina History, and Mobile App Development" – HEHD, Clemson University, $20,000, ($6,666), (2013)
PI: Dr. L. King, **Co-PIs: Drs. C. Gardner-McCune** and P. Vargas

"WATCH – Workshop of African Americans Thinking Computationally and Historically" - URCG, Clemson University , $10,000 ($3,333), (2013)
PI: Dr. L. King, **Co-PIs: Drs. C. Gardner-McCune** and P. Vargas

"Perceptions of Computational Thinking with MIT's App Inventor", Clemson University, $3,500 (2013)
PI: Dr. D. Herro, **Co-PIs: Drs. C. Gardner-McCune** and D. M. Boyer

"Pilot Program for Computer Science Principles Course," The College Board, (**Contracted Instructor**), $15,000, ($15,000), (2012)

OTHER SPONSORED ACTIVITY

"Computational Thinking Olympiad", National Science Foundation, (**Project Director**), $150,000, ($20,000), (2011-2012)

FACES Post Doctoral Fellowship, National Science Foundation, $35,000, (2012)

TEACHING

Courses Taught

CS 1803, CS Principles, Summer 2012
CP SC 481/681, Prototyping & Learning Environment Design, Spring 2013
CP SC 4810/680, Educational Technologies I, Fall 2013
CP SC 481/681, Prototyping & Learning Environment Design, Spring 2013
CP SC 4810/6810, Educational Technologies I, Fall 2013

New Course Development

CSE, Computer Science Education Research, Spring 2014

Workshops

Gardner-McCune, C. (2013) Mobile App Development with App Inventor. March 23, 2103. Presentation at AAEIT.

Teacher Professional Development

App Inventor Workshop. Playful Learning Summit – May 16-17, 2014. Clemson University.

WATCH – Computational Thinking Teacher Professional Development Series (2013- 2014), Clemson University

MIT App Inventor Workshop (August 2013), Easley High School

Short Courses – Curriculum Development

Python Game Design, 2014

Video Game and Game Controller Design, 2013

Computational Thinking Science App Development, 2013

Computational Thinking MATH App Development, 2013

WATCH History App Development, 2013

UNIVERSITY AND PUBLIC SERVICE

Committees

School: Member, *School of Computing Director Search Committee* (2014), Clemson University School of Computing

Division: Member, *Human -Centered Computing Portfolio Review Committee* (2013), Clemson University School of Computing

College: Member, *Graduate Recruiting Committee* (2013), Clemson University School of Computing

College: Member, *Graduate Recruiting Committee* (2011-2012), Georgia Tech College of Computing

Other Service

Summer Research Experience for Undergraduates Mentor

CRA-W DREU Student – Troy Hill, 2014
CRA-W DREU Student – Yerika Jimenez, 2013
CRA-W DREU Student – Nicole Cunha, 2013
CRA-W DREU Student – Randale Watson, 2013

Competition Organization

Designer & Organizer, Computational Thinking Olympiad (2011 - 2012)

Reviewer

Reviewer, TOCE (2014)
Reviewer, ASEE Conference (2012)
Reviewer, Quality Education Forum Journal (2013)
Reviewer, PURA Awards (2011 -2012)
Reviewer, National Science Foundation (2012)

Reviewer, American Society of Engineering Education (2012)
Reviewer, American Educational Research Association (AERA) (2007)
Reviewer, Journal of the Learning Sciences (2006)
Reviewer, TAPIA (2013)

High School Student Research Mentees

Research Supervisor, Garner, J., "Cozy Coat" Westlake High School and Fulton County Science Fair, (January 2012)
Research Supervisor, Garner, J. & Perry, A., "Cozy Coat Project," TN-WIC, (October 2011)
Research Supervisor, Su, S., Vaca, M., Winston, L., ".007 – Flybot," TN-WIC, (October 2011)
Research Supervisor, AT&T Arduino Competition, I-3 Experience teams (2011 – 2012)
Team Shockwave Coach, Spirit of Innovation (Fall 2011)

Student Organizations

Co-Advisor, National Society of Black Engineers (NSBE),Westlake High School NSBE Jr. Chapter (Fall 2005)

Mentorship

Mentee, Krista Palmer, GT Senior, 2011 - 2012
Mentee, Ja'Quan Taylor, GT Freshman, 2012
Reading and Math Mentor, Hands on Atlanta Discovery Program (2004 – 2005)
Mentor, Mentoring for Success Mentor at Renfroe Middle School (3 students) (Spring 2004)
Undergraduate Recruiter, Increasing Minorities in Computing at Tech (IMC@T), (Spring 2004)

PRESS

National Press on Research

Computing for Real Life (Spring 2013) Ross Norton. IDEaS (Inquiry, Discovery in Engineering and Science): Clemson University College of Engineering and Science. pp 18 – 21.

Lagorio, C. (2008, Dec 24). Kitchen Chemistry for Middle Schoolers. The New York Times Magazine. Retrieved from http://www.nytimes.com/2009/01/04/education/edlife/ideas-kitchenscience-t.html

CNN. (February 2008) The Next Big Thing. Kitchen Science Investigators Get the Gray Matter Cooking. Video posted to http://www.cc.gatech.edu/news/multimedia/video/kitchen-science-investigators

CURRICULUM VITAE –

DAMON L. WOODARD, PH.D.

PERSONAL DATA

Associate Professor
Computer and Information Science and Engineering Dept.
University of Florida
P.O. Box 116120
Gainesville, FL 32611
(352) 392-1200

EDUCATION

Ph.D., University of Notre Dame, 2005, Computer Science and Engineering
Dissertation: *Exploiting Finger Surface as a Biometric Identifier*
Advisor: Patrick J. Flynn
M.E., Penn State University, 1999, Computer Science and Engineering
B.S., Tulane University, 1997, Computer Science and Computer Information Systems

PROFESSIONAL EXPERIENCE

University of Florida, 2015 – Present, Associate Professor, Dept. of Computer & Information Science & Engineering
University of Notre Dame, 2014 – 2014, Visiting Associate Professor, Dept. of Computer Science and Engineering
Clemson University, 2012 – 2014, Associate Professor, School of Computing
Clemson University, 2012 – 2013, HCC Graduate Program Director, School of Computing
Clemson University, 2006 - 2012, Assistant Professor, School of Computing
University of Notre Dame, 2004 – 2006, Intelligence Community (IC) Post-Doctoral Fellow
University of Notre Dame, 2002 – 2004, Research Assistant
University of Notre Dame, 2001 – 2002, Teaching Assistant
Pennsylvania State University, 1997 – 1999, Teaching Assistant

PROFESSIONAL MEMBERSHIPS

Black Data Processing Associates	(2013 -)
American Society for Engineering Education	(2012 -)
IEEE Systems, Man, & Cybernetics Society	(2009 -)
Upsilon Pi Epsilon (UPE) Honor Society	(2004 –)
European Association for Signal, Speech and Image Processing (EURASIP)	(2004 –)
Institute of Electrical and Electronics Engineers (IEEE) Senior Member	(2000 –)
IEEE Computer Society	(2000 -)
National Society of Black Engineers (NSBE)	(1996 –)
Association of Computing Machinery (ACM) Senior Member	(1995 –)

PUBLICATIONS

Book Chapters (Reviewed)

[BC3] D. L. Woodard, *Periocular-Based Biometrics*, Encyclopedia of Biometrics Second Ed. (Stan Z. Li Ed.), Springer Publishing, 2014 (To Appear).

[BC2] D. L. Woodard, K. Ricanek, *Iris Databases*, Encyclopedia of Biometrics (Stan Z. Li Ed.), Springer Publishing, 2009.

[BC1] G. Dozier, M. Savvides, K. Bryant, T. Munemoto, K. Ricanek, and D. L. Woodard, *Developing Iris Templates via Bit Inconsistency and GRIT*, Encyclopedia of Biometrics (Stan Z. Li Ed.), Springer Publishing, 2009.

Refereed Journals

[J9] S. Banerjee, D. L. Woodard, *Biometric Authentication and Identification Using Keystroke Dynamics: A Survey*, Journal of Pattern Recognition Research 7 (2012): pg. 116-139, 2012.

[J8] K. P. Hollingsworth, S. S. Darnell, P. E. Miller, D. L. Woodard, K. W. Bowyer, and P. J. Flynn, *Human and Machine Performance on Periocular Biometrics Under Near-Infrared Light and Visible Light*, IEEE Transactions on Forensics and Information Security 7(2):pg. 588-601, 2012.

[J7] J. Lyle, P. Miller, S. Pundlik, D. L. Woodard, *Soft Biometric Classification using Local Appearance Ocular Region Features*, Pattern Recognition 45(11): pg. 3877-3885, 2012.

[J6] A. Alford, K. Bryant, T. Abegaz, G. Dozier, J. Kelly, J. Shelton, L. Small, J. Williams, and D. L. Woodard, *Genetic and Evolutionary Methods for Biometric Feature Reduction*, International Journal of Biometrics, Special Issue on Computational Intelligence in Biometrics: Theory, Methods, and Applications, Volume 4, Number 3, 2012.

[J5] D. L. Woodard, S. Pundlik, P. Miller, J. Lyle, *Appearance Based Periocular Features in the Context of Face and Non-Ideal Iris Recognition*, H. Proença, E. Y. Du, and J. Scharcanski (Eds.); Springer Signal Image and Video Processing, Special Issue On Unconstrained Biometrics: Advances and Trends, Volume 5, Number 3, September, 2011.

[J4] S. Pundlik, D. L. Woodard, and S. Birchfield, *Iris Segmentation in Non-Ideal Images,* Image and Vision Computing, Vol. 28, No. 12, pg. 1671-1681, December 2010.

[J3] M. Savvides, K. Ricanek, D. L. Woodard, and G. Dozier, *Unconstrained Biometric Identification: Emerging Technologies*, IEEE Computer Special Issue on Biometrics, Vol. 43, No. 2, pg. 56-62, February 2010.

[J2] K. L. Rice, T. M. Taha, A. M. Chowdhury, A. A. S. Awwal, and D. L. Woodard, *Design and Acceleration of Phase-Only Filter Based Optical Pattern Recognition for Fingerprint Identification*, Optical Engineering, 48:11), November 2009.

[J1] D. L. Woodard, P. J. Flynn, *Finger Surface as a Biometric Identifier*, Journal of Computer Vision and Image Understanding (**CVIU**) 100 (3): pg. 357-384, December 2005. (Listed as #20 on CVIU's Top 25 Hottest Articles during 2005 4th quarter)

Refereed Conferences/Workshops

[C30] S. B. Daily, C. Gardner-Mccune, J. Gilbert, P. W. Hall, K. McMullen, S. Remy, and D. L. Woodard, *Alternate Pathways to Careers in Computing: Recruiting and Retaining Women Students*, Proceedings of the 2013 ASEE Annual Conference, Atlanta, GA, June 2013.

[C29] Y. Dong, D. L. Woodard, *Eyebrow Shape-Based Features for Biometric Recognition and Gender Classification: A Feasibility Study*, 2011 IAPR/IEEE International Joint Conference on Biometrics (IJCB), Washington, D.C., October 11 – 13, 2011.

[C28] J. Shelton, G. Dozier, K. Bryant, L. Small, J. Adams, K. Popplewell, T. Abegaz, D.L. Woodard, and K. Ricanek, *Genetic and Evolutionary Feature Extraction via X-TOOLSS*, Proceedings of the 2011 International Conference on Genetic and Evolutionary Methods, (GEM 2011), Las Vegas, NV, July 18 – 21, 2011.

[C27] T. Abegaz, G. Dozier, K. Bryant, J. Adams, V. McLean, J. Shelton, A. Alford, K. Ricanek, and D. L. Woodard, *Applying GEC in Feature Selection and Weighting for LBP, oLBP, and Eigenface,* Proceedings of the 2011 International Conference on Genetic and Evolutionary Methods, (GEM 2011), Las Vegas, NV, July 18 – 21, 2011.

[C26] A. Alford, K. Popplewell, G. Dozier, K. Bryant, J. Kelly, J. Adams, T. Abegaz, J. Shelton, D.L. Woodard, and K. Ricanek, *Hybrid GEC-Based Techniques for Multi-Biometric Recognition via X-TOOLSS*, Proceedings of the 2011 International Conference on Genetic and Evolutionary Methods, (GEM 2011), Las Vegas, NV, July 18 – 21, 2011.

[C25] T. Abegaz, G. Dozier, K. Bryant, J. Adams, J. Shelton, K. Ricanek, D. L. Woodard, *SSGA and EDA Based Feature Selection and Weighting for Face Recognition*, 2011 IEEE Congress on Evolutionary Computation (IEEE CEC 2011), New Orleans, LA, June 5 – 8, 2011.

[C24] A. Alford, K. Popplewell, G. Dozier, K. Bryant, J. Kelly, J. Adams, T. Abegaz, Shelton, K. Ricanek, and D. L. Woodard, *A Comparison of GEC-Based Feature Selection and Weighting for Multimodal Biometric Recognition*, 2011 IEEE Congress on Evolutionary Computation (IEEE CEC 2011), New Orleans, LA, June 5 – 8, 2011.

[C23] A. Alford, C. Hansen, G. Dozier, K. Bryant, J. Kelly, T. Abegaz, K. Ricanek, and D. L. Woodard, *GEC-Based Multi-Biometric Fusion*, 2011 IEEE Congress on Evolutionary Computation (IEEE CEC 2011), New Orleans, LA, June 5 – 8, 2011.

[C22] J. Shelton, G. Dozier, K. Bryant, L. Smalls, J. Adams, K. Popplewell, T. Abegaz, D. L. Woodard, and K. Ricanek, *Comparison of Genetic-based Feature Extraction Methods for Facial Recognition*, 2011 Midwest Artificial Intelligence and Cognitive Science Conference (MAICS), Special Session on Artificial Intelligence in Biometrics and Identity Sciences, Cincinnati, OH, April 16 – 17, 2011.

[C21] T. Abegaz, G. Dozier, K. Bryant, J. Adams, B. Baker, J. Shelton, K. Ricanek, and D. L. Woodard, *Genetic-Based Selection and Weighting for LBP, oLBP, and Eigenface Feature Extraction*, 2011 Midwest Artificial Intelligence and Cognitive Science Conference (MAICS), Special Session on Artificial Intelligence in Biometrics and Identity Sciences, Cincinnati, OH, April 16 – 17, 2011.

[C20] G. Dozier, K. Purrington, K. Popplewell, J. Shelton, T. Abegaz, K. Bryant, J. Adams, D. L. Woodard, and P. Miller, *GEFeS: Genetic & Evolutionary Feature Selection for Periocular Biometric Recognition*, 2011 IEEE Workshop on Computational Intelligence in Biometrics and Identity Management, Paris, France, April 11- 15, 2011.

[C19] T. Abegaz, G. Dozier, K. Bryant, J. Adams, K. Popplewell, J. Shelton, K. Ricanek, D. L. Woodard, *GEFeS: Hybrid Gas for Eigen-Based Facial Recognition*, 2011 IEEE Workshop on Computational Intelligence in Biometrics and Identity Management, Paris, France, April 11 – 15, 2011.

[C18] J. Shelton, G. Dozier, K. Bryant, J. Adams, K. Popplewell, T. Abegaz, K. Purington, D. L. Woodard, and K. Ricanek, *Genetic Based LBP Feature Extraction and Selection for Facial Recognition*, Proceedings of 2011 ACM Southeast Conference, Kennesaw, GA, March 24-26, 2011.

[C17] S. Darnell, I. Alvarez, J. Ekendem, D. L. Woodard, and J. E. Gilbert, *MyDash: The Biometric Digital Dashboard*, In Proceedings of the 3rd Workshop on Multimodal Interfaces for Automotive Applications of the 2011 International Conference on Intelligent User Interfaces, Palo Alto, CA, pg. 53-56, February 13 – 16, 2011.

[C16] P. Miller, J. Lyle, S. Pundlik, D. L. Woodard, *Performance Evaluation of Local Appearance Based Periocular Recognition*, IEEE 4th International Conference on Biometrics Theory, Applications, and Systems, Arlington, Virginia, Sept. 27 – Sept. 29, 2010.

[C15] J. Lyle, P. Miller, S. Pundlik, D. L. Woodard, *Soft Biometric Classification Using Periocular Region Features*, IEEE 4th International Conference on Biometrics Theory, Applications, and Systems, Arlington, Virginia, Sept. 27 – Sept. 29, 2010.

[C14] D. L. Woodard, S. Pundlik, P. Miller, R. Jillela, A. Ross, *On the Fusion of Periocular and Iris Biometrics in Non-ideal Imagery,* Proceedings of the IAPR 20th International Conference on Pattern Recognition (ICPR 2010), Istanbul, Turkey, August 23-26, 2010.

[C13] J. Adams, D. L. Woodard, G. Dozier, K. Bryant, P. Miller, G. Glenn, *Genetic-Based Type II Feature Extraction for Periocular Biometric Recognition: Less is More*, Proceedings of the IAPR 20th International Conference on Pattern Recognition (ICPR 2010), Istanbul, Turkey, August 23-26, 2010.

[C12] L. Simpson, G. Dozier, J. Adams, D. L. Woodard, P. Miller, G. Glenn, K. Bryant, *Genetic and Evolutionary Type II Feature Extraction for Periocular-Based Biometric Recognition*, Proceeding of 2010 IEEE Congress on Evolutionary Computation, Barcelona, Spain, July 18-23, 2010.

[C11] G. Dozier, J. Adams, D. L. Woodard, K. Bryant, P. Miller, *A Comparison of Two Genetic and Evolutionary Feature Selection Strategies for Periocular-Based Biometric Recognition via X-TOOLSS*, International Conference of Genetic and Evolutionary Methods (GEM' 10), Las Vegas, Nevada, July 12-15, 2010.

[C10] D. L. Woodard, S. Pundlik, J. Lyle, P. Miller, *Periocular Region Appearance Cues for Biometric Identification,* IEEE Conf. Computer Vision and Pattern Recognition 2010 IEEE Biometrics Council Workshop on Biometrics, San Francisco, CA, June 18, 2010.

[C9] J. Adams, D.L. Woodard, G. Dozier, P. Miller, G. Glenn, K. Bryant, *GEFE: Genetic & Evolutionary Feature Extraction for Periocular-Based Biometric Recognition*, Proceedings of 2010 ACM Southeast Conference, Oxford, MS, April 15-17, 2010.

[C8] P. Miller, A. Rawls, S. Pundlik, D. L. Woodard, *Personal Identification Using Periocular Skin Texture*, Proceedings of the 2010 ACM Symposium on Applied Computing, Session: Applied Biometrics Track, Sierre, Switzerland, pg. 1496 – 1500, March 22-24, 2010.

[C7] W. Ryan, D. L. Woodard, A. Duchowski, and S. Birchfield, *Adapting Starburst for Elliptical Iris Segmentation*, IEEE 2nd International Conference on Biometrics Theory, Applications, and Systems, Arlington, Virginia, Sept. 29 – Oct. 1, 2008.

[C6] S. Pundlik, D. L. Woodard, S. Birchfield, *Non-Ideal Iris Segmentation Using Graph Cuts*, IEEE Conf. Computer Vision and Pattern Recognition 2008 (**CVPRW**) Workshop on Biometrics, Anchorage, Alaska, June 23-30, 2008.

[C5] D. L. Woodard, T. C. Faltemier, Ping Yan, P. J. Flynn, K. W. Bowyer, *A Comparison of 3D Biometric Modalities,* IEEE Conf. Computer Vision and Pattern Recognition 2006 (**CVPRW**) Workshop on Multi-modal Biometrics, New York, NY, pg. 57-62, June 17-22, 2006.

[C4] D. L. Woodard, P. J. Flynn, *Personal Identification Utilizing Finger Surface Features*, Proc. IEEE Conf. Computer Vision and Pattern Recognition 2005 (**CVPR**), San Diego, CA, pg. II: 1030-1036, June 20-25, 2005.

[C3] D. L. Woodard, P. J. Flynn, *Identity Verification Utilizing Finger Surface Features*, Audio- and Video-based Biometric Person Authentication 2005 (**AVBPA**), Rye Town, NY, pg. 544-554, July 20-22, 2005.

[C2] K. Chang, D. L. Woodard, P. J. Flynn, and K. W. Bowyer, *Three-Dimensional Face and Finger Biometrics*, **(EUSIPCO)** 12th European Signal Processing Conference, Vienna, Austria, pg. 1225-1228, September 7-10, 2004.

[C1] D. L. Woodard, P. J. Flynn, *3D Finger Biometrics*, The 8th European Conference on Computer Vision (**ECCV 2004**) Biometric Authentication Workshop **(BioAW)**, Prague, Czech Republic, pg. 238-247, May 11-16, 2004.

Abstracts/Extended Abstracts (Peer Reviewed)

[A3] D. L. Woodard, P. J. Flynn. *3D Finger Biometrics,* Richard Tapia Celebration of Diversity in Computing Conference 2005, Albuquerque, NM October 19-22, 2005.

[A2] D. L. Woodard, P. J. Flynn. *Finger Surface as a Biometric Identifier,* Biometric Consortium Conference, Crystal City, VA Sept. 2004.

[A1] D. L. Woodard, P. J. Flynn. *Hand Silhouette Curvature Measurements as a Biometric Identifier,* Biometric Consortium Conference, Crystal City, VA Sept. 2003.

PRESENTATIONS

[P16] *Periocular-Based Biometrics: Methods, Capabilities, and Future Research Directions*, University of Notre Dame, Notre Dame, IN, November 2013.

[P15] *Exploiting Periocular Features for Biometric and Forensic Applications*, Face Collaboration Meeting (IX) Sponsored by MITRE, McLean, VA, June 27, 2011.

[P14] *Center of Advanced Studies in the Identity Sciences: A Model for Research, Education, and Outreach*, ORAU Council of Sponsoring Institutions Annual Meeting: Research and Education Partnerships Opportunities in Security and Intelligence, Oak Ridge, TN, March 8-9, 2011.

[P13] *Periocular Based Recognition and Classification*, University of Notre Dame, Notre Dame, IN, November 2010.

[P12] *Local Appearance Features for Periocular Based Biometrics*, Office of the Director of National Intelligence (ODNI) Intelligence Community Centers of Academic Excellence Executive Advisory Board Meeting, Lansdowne, VA, March 2010.

[P11] *Exploiting Finger Surface as a Biometric Identifier*, University of North Carolina Wilmington, Wilmington, NC, November 2009.

[P10] *Overview of Biometric Research/Periocular Based Biometrics*, Office of the Director of National Intelligence (ODNI) Intelligence Community Centers of Academic Excellence Executive Advisory Board Meeting, Lansdowne, VA, March 2009.

[P9] *Ocular-Region Based Biometric Identification*, North Carolina A&T State University, Greensboro, NC, October 2008.

[P8] *Biometrics: Identity Technologies* (Panel Chair), National Academy of Sciences Eighteenth Annual Kavli Frontiers of Science Symposium, Irvine, CA, November 2-4, 2006.

[P7] *An Overview of Biometric Research at the University of Notre Dame,* Supercomputing 2005, Seattle, WA, November 12-17, 2005.

[P6] *3D Finger Biometrics*, Richard Tapia Celebration of Diversity in Computing Conference 2005, Albuquerque, NM, October 19-22, 2005.

[P5] *Exploiting Finger Surface as a Biometric Identifier*, Auburn University, Auburn, AL July 12, 2005.

[P4] *An Introduction to Biometrics*, Albion College, Albion, MI, April 14, 2005.

[P3] *Iris Recognition Utilizing High Resolution Images*, DCI Postdoctoral Research Fellowship Colloquium, Tyson's Corner, VA April 6, 2005.

[P2] *Finger Surface as a Biometric Identifier,* Biometric Consortium Conference, Crystal City, VA, Sept. 2004.

[P1] *Hand Silhouette Curvature Measurements as a Biometric Identifier,* Biometric Consortium Conference. Crystal City, VA Sept. 2003.

HONORS AND AWARDS

Elevated to ACM Senior Member	(2012)
Elevated to IEEE Senior Member	(2011)
Kavli Frontier Fellow, National Academy of Science	(2006)
Intelligence Community Postdoctoral Fellowship Recipient	(2004 – 2006)
Procter and Gamble Grant Recipient , Proctor and Gamble Inc.	(2002 – 2003)
Minority Engineering Program Mentor, University of Notre Dame	(2001)
Technical Minority Scholarship, Xerox Inc.	(2000, 2001)
Ph.D. Fellowship Recipient, National Consortium for Graduate Degrees for Minorities in Engineering and Science (**GEM**)	(1999)
Masters Fellowship Recipient, National Consortium for Graduate Degrees for Minorities in Engineering and Science (**GEM**)	(1997)
Highest Senior GPA Award, National Soc. of Black Engineers (**NSBE**)	(1997)
Emerging Leaders Member, Tulane University	(1994)
Garvin Shands Saunder Scholarship, Tulane University	(1993)

Dean's List/Honor Roll, Tulane University (1992 – 1995)

SPONSORED RESEARCH **(TOTAL AWARDS: $3,240,957.00)**

[G7] *Automatic Visual Inspector: Phase 1*, BMW Manufacturing Co. LLC, Principal Investigator with S. Birchfield, $64,977, ($32,488), (2012 – 2013).

[G6] *On the Use of Periocular Based Features for Biometric Recognition,* Federal Bureau of Investigation, Principal Investigator, $600,096, ($600,096), (2012 – 2014).

[G5] *Human-Centered Computing Scholars: Fostering a New Generation of Underrepresented and Financially Disadvantaged Researchers*, National Science Foundation, Co-Principal Investigator with J. Gilbert and L. Hodges, $552,000, ($184,000), (2011 – 2016).

[G4] *Ear Feature Analysis, Extraction Tools, and Classification for Improved Recognition*, Intelligence Community Postdoctoral Research Fellowship Program, Central Intelligence Agency, Principal Investigator, $355,373, ($353,373), (2013 – 2015).

[G3] *Ocular Region Biometrics (As Part of DNI S&T Center of Academic Excellence: Center for Academic Studies in Identity Sciences (CASIS))*, Army Research Office, Principal Investigator, $2M, ($2M), (2008-2014).

[G2] *Eye Region Based Biometric Identification*, Department of Defense/Unisys, Principal Investigator, $57,000, ($57,000), (2008-2008).

[G1] *An Experimental Supercomputer from Commodity Components*, University Research Fund, Co-Principal Investigator with J. Westall, R. Geist, B. Dean, R. Schalkoff, and P. Srimani , $100,000, ($14,000), (2007-2008).

GRADUATE STUDENT ADVISING

Current Graduate Advising

Neal, Tempestt (CISE, Ph.D.), *Idenitification via Mobile Device Usage Data*, (May 2017).
Sundararajan, Kalaivani (CISE, Ph.D.), *Topic to be Determined*, (May 2017).
Ravi Pacha, Goutham (CISE, Ph.D.), *Topic to be Determined*, (May 2018).

Post-Doctoral Research Advisees

Washington, Gloria, *Ear Feature Analysis, Extraction Tools, and Classification,* (2013 - 2014).
Pundlik, Shrinivas, *Periocular Based Biometric Recognition Systems*, (2009 - 2010).

Past Graduate Advising/Committees

Lyle, Jamie (SoC, Ph.D.)	(December 2014)	(Role: Advisor)
Lakko, Poornapragna (ECE, M.S.)	(July 2014)	(Role: Co-Advisor)
Ravindran, Satish (ECE, M.S.)	(May 2014)	(Role: Co-Advisor)
Martin, Aquessha (SoC, CS Ph.D.)	(May 2014)	(Role: Committee Member)
Pradhan, Ninad (ECE, Ph.D.)	(July 2013)	(Role: Committee Member)
Willimon, Robert (ECE, Ph.D.)	(May 2013)	(Role: Committee Member)
Huang, Xiaoxia (ECE, Ph.D.)	(May 2013)	(Role: Committee Member)
Tobias, Nicole (SoC, M.S.)	(December 2012)	(Role: Advisor)
Ramamurthy, Balu (SoC, M.S.)	(August 2012)	(Role: Advisor)

Rice, Kenneth (ECE, Ph.D.)	(December 2011)	(Role: Committee Member)
Gado, Harshad (ECE, M.S.)	(August 2011)	(Role: Committee Member)
Guntaka, Srinayani (SoC, M.S.)	(May 2011)	(Role: Advisor)
Chen, Zhichao (ECE. Ph.D.)	(July 2010)	(Role: Committee Member)
Apte, Akshay (ECE, M.S.)	(July 2010)	(Role: Committee Member)
Gidla, Vinay (ECE, M.S.)	(May 2010)	(Role: Committee Member)
Miller, Philip (SoC, M.S.)	(May 2010)	(Role: Advisor)
Lyle, Jamie (SoC, M.S.)	(December 2009)	(Role: Advisor)
Pundlik, Shrinivas (ECE, Ph.D.)	(August 2009)	(Role: Committee Member)
Steele, Jay (SoC, Ph.D.)	(May 2009)	(Role: Committee Member)
Zacharia, Ron (ECE, M.S.)	(May 2009)	(Role: Committee Member)
Tharkre, Uttara (ECE, M.S.)	(May 2009)	(Role: Committee Member)

UNDERGRADUATE STUDENT ADVISING

Past Honors Student Advising

Segars, Albert (SoC)	(Fall 2008 – Fall 2009)	Masters Student – UC Berkeley
Miller, Philip (SoC)	(Fall 2007 – Spring 2008)	Ph.D. Student – Clemson University
Dixon, Rob (SoC)	(Fall 2006 – Spring 2007)	Ph.D. Student – Carnegie Mellon University

TEACHING

Courses Taught (Beginning Fall 2006)

CpSc-101 Computer Science I	(S11, S12)
CpSc-102 Computer Science II	(S09)
CpSc-881 Introduction to Biometrics	(F07, F08, F09)
CpSc-881 Computer Vision	(S07)
CpSc-810 Introduction to Artificial Intelligence	(F06)
CpSc-8770 Fundamental of Biometric Systems	(F10, F11, F12, F13, F14)
CpSc-881 Applied Pattern Recognition	(S13)
CSE-60277 Applied Pattern Recognition (UND)	(S14)

New Course Development

CpSc-877 Fundamentals of Biometric Systems
CpSc-881 Computer Vision
CpSc-881 Applied Pattern Recognition

UNIVERSITY SERVICE

University

Member, C. Tycho Howle Endowed Chair in Collaborative Computing Environments Search Committee (2012 – 2013)

Department/School

Personalized Learning Faculty Search Committee (2015 – Present)
Systems Facilities Committee (2015 – Present)
Graduate Admissions Committee (2015 – Present)
School of Computing Director Search Committee (2013 – 2013)

HCC Tenure, Promotion, and Retention Committee (2013 – 2013)
HCC Tenure, Promotion, and Retention Committee Chair (2012 – 2013)
HCC Portfolio Review Committee Chair (2011- 2013)
Graduate Advisory Committee, (2011 – Present)
School Director Advisory Committee, (2010 - 2012)
Department Web Site Committee, (2010 – 2011)
Graduate Student Recruitment Committee Member, (2008 - 2010)
Faculty Co-Advisor, Upsilon Pi Epsilon (**UPE**) Honor Society, (2007-2008)
Faculty Co-Advisor, Association of Computing Machinery (**ACM**), (2007-2008)

PROFESSIONAL SERVICE

Chair Positions

Publicity Co-Chair of IEEE Intl. Conference on Biometrics: Theory, Applications, and Systems (**BTAS 2012**)
Special Session Chair: Artificial Intelligence in Biometrics and Identity Sciences (**AIBIS**), The 22nd Midwest Artificial Intelligence and Cognitive Science Conference (**MAICS 2011**)
Publicity Co-Chair of 6th IEEE Biometrics Symposium 2008 (**BSYM**)
Biometrics Technology Panel Chair for National Academy of Sciences Frontier of Science Conference (2006)

Program Committees

IAPR Intl. Conference on Pattern Recognition (**ICPR 2014**)
IEEE Intl. Conference on Image Processing (**ICIP 2014, ICIP 2015**)
IEEE/IAPR International Joint Conference on Biometrics **(IJCB 2011, IJCB 2014**)
IEEE/IAPR International Conference on Biometrics (**ICB2012, ICB2013, ICB 2015**)
IEEE International Conference on Hand-Based Biometrics (**ICHB2011**)
IEEE 9th Conference on Automatic Face and Gesture Recognition (**FG 2011**)
The 22nd Midwest Artificial Intelligence and Cognitive Science Conference (**MAICS 2011**)
Biometric Technology for Human Identification V Conference, Part of the SPIE International Defense and Security Symposium (**SPIE 2008**, **2011**)
IEEE Intl. Conference on Biometrics: Theory, Applications, and Systems (**BTAS 2009 - 2015**)
IEEE/IAPR First Intl. Workshop on Emerging Techniques and Challenges for Hand-Based Biometrics (**ETCH 2010**)
IEEE International Conference on Computer Vision (**ICCV 2007**)
IEEE International Conference on Identity, Security, and Behavior Analysis (**ISBA 2015**)

Reviewer

IEEE Transactions on Evolutionary Computation (**TEVC**)
IEEE Intl. Conference on Image Processing (**ICIP 2010, ICIP2011, ICIP2012, ICIP2013**)
IAPR Intl. Conference on Pattern Recognition (**ICPR 2010, ICPR2012**)
IEEE International Conference on Computer Vision (**ICCV 2009**)
IEEE Conf. of Computer Vision and Pattern Recognition (**CVPR 2007-2015**)
IEEE Transactions of Pattern Analysis and Machine Intelligence (**PAMI**)
Journal of Robotics and Computer-Integrated Manufacturing (**RCIM**)
Journal of Computer Vision and Image Understanding (**CVIU**)
IEEE Transactions on Systems, Man, and Cybernetics--Part A: Systems and Humans (**SMCA**)
IEEE Transactions on Systems, Man, and Cybernetics--Part B: Cybernetics (**SMCB**)

IAPR/IEEE International Conference on Biometrics 2007 (**ICB 2007**)
European Association for Signal, Speech and Image Processing Journal on Advances in Signal Processing (**EURASIP**)
IEEE Transactions on Human-Machine Systems
IEEE Transactions on Information Forensics & Security (**TIFS**)
Pattern Recognition
Pattern Recognition Letters
IEEE Transactions on Image Processing (**TIP**)
IEEE Sensors
Image and Vision Computing
Computers and Security
Machine Vision and Applications
Digital Signal Processing

Other

IEEE Biometrics Council Education Committee Member
National Institute of Justice OST/OIFS Sensor, Surveillance, and Biometrics Technologies for Criminal Justice Applications – Biometrics Review Panel Member
Contributor to IEEE Education Activities Board Professional Biometric Certification Program (Subject Matter Expert)
National Science Foundation Review Panel Member

MISCELLANEOUS

Press Coverage, Article, Signal Magazine, *Universities Develop New-School Biometrics* (2012)
Press Coverage, Online Article, Daily Finance, *Microsoft Kinect Heats Race Debate: Does Face-Recognition Software Discriminate?* (2010)

Eakta Jain

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Research Focus Perceptually-driven algorithms for human-centered computer graphics.

Research Interests Character Animation, Hand-drawn Animation, Comic Art, Video Editing, Eyetracking, Motion Capture, Applied Perception, Computer Vision

Education

- **Carnegie Mellon University**, Pittsburgh, PA.
  Ph.D., Robotics Institute
- **Carnegie Mellon University**, Pittsburgh, PA.
  Masters in Robotics
- **Indian Institute of Technology Kanpur**, India.
  Bachelor of Technology, Department of Electrical Engineering, 2006.

Journal Publications

- "Three-dimensional Proxies for Hand-drawn Characters", Eakta Jain, Yaser Sheikh, Moshe Mahler, Jessica Hodgins, *ACM Transactions on Graphics*, 2012.
- "Gaze-driven Video Re-editing", Eakta Jain, Yaser Sheikh, Ariel Shamir, Jessica Hodgins, accepted with minor revisions to *ACM Transactions on Graphics*.

Conferences and Symposia

- "Predicting Primary Gaze Behavior Using Social Saliency Fields", Hyun Soo Park, Eakta Jain, Yaser Sheikh, International Conference on Computer Vision (ICCV) 2013.
- "3D Social Saliency from Head-mounted Cameras", Hyun Soo Park, Eakta Jain, Yaser Sheikh, Advances in Neural Information Processing Systems (NIPS), 2012,
- "Inferring Artistic Intention in Comic Art through Viewer Gaze", Eakta Jain, Yaser Sheikh, Jessica Hodgins, Proceedings of the *ACM Symposium on Applied Perception (SAP)*, 2012, **Honorable Mention Best Paper Award**.
- "Augmenting Hand Animation with Three-dimensional Secondary Motion", Eakta Jain, Yaser Sheikh, Moshe Mahler, Jessica Hodgins, Proceedings of the *ACM Symposium on Computer Animation (SCA)*, 2010, **Best Paper Award**.
- "Leveraging the Talent of Hand Animators to Create Three-Dimensional Animation", Eakta Jain, Yaser Sheikh, Jessica Hodgins, Proceedings of the *ACM Symposium on Computer Animation (SCA)*, 2009.
- "Hypergraphs- Organizing complex natural neural networks", Eakta Jain, Michael J. Healy, Linda Saland, Derek Hamilton, Andrea Allan, Kevin Caldwell, Thomas P. Caudell, Proceedings of the *International Conference on Intelligent Sensing and Information Processing*, 2005.
- "Dancing Puppets- An Innovative Approach to Learning Programming", Riya Bhattacharya, Nidhi, Eakta Jain, Utsav Maitra, Gaurav Sharma, S. Bipin Agravat, Amitabha Mukherjee, Proceedings of the *INEER International Conference on Engineering Education*, University of Florida, 2004.

Patents

- U.S. Patent applied for "Augmenting Hand Animation with Three-dimensional Secondary Motion". (with co-authors)

Work Experience

- University of Florida, Gainesville FL, U.S.A.
  Assistant Professor, February 2014 - present
- Texas Instruments, Dallas TX, U.S.A.
  Member of Technical Staff, Embedded Processing Systems Lab, Dec 2012 - Feb 2014
  Systems Software Engineer, Natural User Interfaces Team, July 2012 - Dec 2012
- Disney Research, Pittsburgh, U.S.A.
  Lab Associate, September 2011 - January 2012
- Disney Research, Pittsburgh, U.S.A.
  Lab Associate, June-August 2010
- Disney Research Pittsburgh, U.S.A.
  Lab Associate, June-August 2008
- Walt Disney Animation Studios, Burbank, U.S.A.
  Summer Intern, June-August 2007
- Applied Electro-Magnetics, NOIDA, India
  Summer Intern, June-August 2004

Awards

- Honorable Mention Best Paper Award, Symposium on Applied Perception (2012)
- Best Paper Award, Symposium on Computer Animation (2010)
- Finalist, Google Anita Borg Memorial Scholarship (2008)
- Certificate of Merit for Academic Excellence, IIT Kanpur (2002-2003)

Panels

- Panel on graduate student life at Fusion Forum, graduate school recruitment event for underrepresented students, November 2011
- Panel on graduate student advising and faculty-student relationships at Fusion Forum, graduate school recruitment event for underrepresented students, November 2009
- Avenues to Success from Advisors to Research for PhD students, Faculty and graduate student panel, CMU Graduate Orientation, August 2009

Seminars and Colloquia

- Invited talk, University of Texas at Austin, 2014
- Computer Science Department Seminar, University of Texas Dallas, 2012
- Summer seminar, MPI Saarbrucken, 2011
- Invited talk, MPI Tubingen, 2011
- Graphics group talk, University of Stuttgart, 2011
- Invited talk, Disney Research Zurich, 2011

Academic Service

- Reviewer for SIGGRAPH 2014, IEEE Transactions on Multimedia 2014, SIGGRAPH Asia 2012, ACM TOG 2012, SIGGRAPH 2011
- Ph.D. Thesis Committee Member for Abhishek Chhetri (UT Dallas)
- Qualifiers Committee Member for Laura Trutoiu (CMU)
- Masters Thesis Committee Member for Xuehan Xiong (CMU)

Juan E. Gilbert, Ph.D.

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Research Statement

My research is in Human-Centered Computing (HCC). The goal of my research is to design, implement and evaluate *innovative solutions to real world problems*. *My research integrates people, technology, information, policy, culture and more to address societal issues*. In general, Human-Centered Computing research is highly interdisciplinary and applied. My areas of specialization within HCC are Natural Interactive Systems, Advanced Learning Technologies/Intelligent Tutoring Systems, Ethnocomputing/Culturally Aware Computing and Information Technology Workforce, Human-Computer Interaction, Databases and Data Mining.

In Natural Interactive Systems (NIS), I am interested in creating user interfaces where the user interacts with the system using speech or multimodality. I am researching the design, implementation and the evaluation of naturally interactive systems. One of my research projects in NIS is called *Prime III*. Prime III is a secure, multimodal electronic voting system, http://www.PrimeVotingSystem.org. Prime III provides an easy to use multimodal user interface that allows greater participation in the electoral process. Voters that can't read, hear, have visual impairments or physical impairments, can still vote using Prime III. The Prime Voting System is a *usable security* approach to electronic voting. Another example is the texting while driving research we are doing called Voiceing™, see http://www.VoiceTextingResearch.org and http://www.youtube.com/watch?v=IwVN1deb9jM

In Advanced Learning Technologies/Intelligent Tutoring Systems, my research aims to create and study applications that employ intelligent strategies that personalize instruction. In some implementations, this involves the use of spoken language systems and Animated Pedagogical Agents (APAs). I am researching the use and impact of culturally relevant environments that use culture in the education or training environment. This is a form of Ethnocomputing (http://en.wikipedia.org/wiki/Ethnocomputing) or culturally aware computing. In my latest research efforts, I am researching game-like interfaces that provide naturally interactive instruction using animation, artificial intelligence, and speech. Examples of this work can be seen at http://www.aadmlss.org. In Ethnocomputing or Culturally Aware Computing, I am investigating the use and impact of culture in computing. Our research suggests that culture can be used to increase interest, user satisfaction and ease of use in computing applications. I am also working on information technology workforce issues. Specifically, I am investigating pedagogies and programs that broaden participation in computing for people in underrepresented groups. I am studying effective practices that help recruit, retain and graduate people from underrepresented groups in Science, Technology, Engineering and Mathematics (STEM).

In Databases and Data Mining, I am investigating data mining for human centered applications, e.g. applications where the data represents people, and tools that answer complex questions from business intelligence, education, and society. For example, I use clustering algorithms to process admissions applications in order to increase holistic diversity. This tool is called *Applications Quest*™, http://www.ApplicationsQuest.com.

Teaching Statement

My teaching philosophy is derived from my research in educational technology and my work experiences. I believe that technology can be used to keep students interested in the course material. My instruction style employs the use of computers and other multimedia deliverable mediums to assist in delivering instruction. Technology allows me to deliver instruction in several different styles, which meets the demands of more students.

Areas of teaching interest include, but are not limited to:

1. Human-Computer Interaction
2. Spoken Language Systems
3. Databases and Data Mining
4. Science and Technology Policy
5. Advanced Learning Technologies
6. Ethnocomputing
7. Creative Thinking and Problem Solving

Education:

2000 **University of Cincinnati**, Cincinnati, Ohio
Doctor of Philosophy in Computer Science
Title: Arthur: An Intelligent Tutoring System with Adaptive Instruction
Advisor: Chia Y. Han

1995 **University of Cincinnati**, Cincinnati, Ohio
Master of Science in Computer Science
Title: Road Map – An Intelligent Heuristic Application
Advisor: Raj Bhatnagar

1991 **Miami University**, Oxford, Ohio
Bachelor of Science in Applied Science
Major: Systems Analysis

Funding (Total Funding: $24,618,891.78 - Gilbert Share: $10,034,742.78)

1. Gilbert, J.E. & Smith, D., **User Experiences in Automobiles**, Intel UXR, 2/1/2014 – 1/31/2015, $25,000.

2. Gilbert, J.E., **Voice Recognition Plugin Research**, BMW, 9/15/2013 – 12/31/2013, $65,000.

3. Gilbert, J.E., McMullen, K., Remy, S.L., & Eugene, W., **4D Interactions for Cable Television,** CableLabs, 7/1/2013 – 6/30/2014, $80,000.

4. Gilbert, J.E., Daily, S.B., Anderson, M., Seals, C., & Jones, E., **NSF BPC-A: Institute for African-American Mentoring in Computing Sciences (iAAMCS)**, NSF, 5/1/2013 – 4/30/2018, $5,089,295, Clemson Share: $1,932,769.00.

5. Gilbert, J.E., McMullen, K., & Martin, J., **User Experiences with Streaming Video, 3D Audio and Holistic Usability**, Intel IXR, 6/1/2013 – 5/31/2014, $50,000.

6. Gilbert, J.E., **User Experiences with Streaming Video and Holistic Usability**, Intel IXR, 1/1/2013 – 12/31/2013, $25,000.

7. Gilbert, J.E., **Juvenile Detention Alternatives Initiative (JDAI) Data Management and Reporting Website**, 1/1/2013 – 9/30/2013, $60,000.

8. Taiber, J. & Gilbert, J.E., **Sustainable Mobility in Automobiles**, Verizon, 11/28/2012 - 11/27/2013, $29,900.

9. Gilbert, J.E., **Voice Controls & Augmented Call Center**, BMW, 8/15/2012 – 12/31/2012, $40,999.

10. Martin, J. & Gilbert, J.E., **Assessing Perceived Quality of Dash-Based IPTV Broadcasts: Methods and Human Factors**, CableLabs, 8/15/2012 – 8/14/2013, $50,000.

11. Thompson, M., Gilbert, J.E., Morrison, D., **Epidemiology of Sexual Violence: A Trajectory-based Approach**, NIH, 7/1/2012 – 6/30/2013, $128,017.

12. Gilbert, J.E., **Interface and Visual Design Research**, BMW, 3/1/2012 – 2/28/2013, $32,000.

13. Gilbert, J.E., **Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM)**, NSF, (2011), $25,000.

14. Venhovens, P., Brooks, J. & Gilbert, J.E., **2D vs. 2.5D in Automotive User Interfaces**, Ford Motor Company, 3/1/2012 – 2/28/2013, $40,000.

15. Gilbert, J.E., **2010 Voting Technology and Accessibility Research - Accessible Voting Technology Initiative**, U.S. Election Assistance Commission, 5/23/2011 - 5/22/2014, $4,500,000, Clemson Share: $1,188,467.

16. Gilbert, J.E., **IDEaS (Inquiry, Discovery in Engineering and Science) Professorship**, Clemson University College of Engineering and Science, 7/1/2011 – 6/30/2012, $20,000.

17. Gilbert, J.E., Hodges, L., & Woodard, D., **S-STEM: Human-Centered Computing Scholars: Fostering a New Generation of Underrepresented and Financially Disadvantaged Researchers**, NSF, 6/1/2011 – 5/31/2016, $551,998.

18. Martin, J. & Gilbert, J.E., **Correlating the Perceived Quality of Networked Games to Broadband Cable Network Design Parameters**, CableLabs, 6/1/2011 – 12/31/2011, $30,000.

19. Gilbert, J.E., **In-Vehicle Voice User Help Research**, BMW, 7/1/2011 – 7/31/2012, $46,550.

20. Gilbert, J.E., **CI Fellows Postdoc**, Computing Research Association, 9/14/2010 – 9/13/2011, $127,500.

21. Camp, T., Gilbert, J.E., Khuller, S., & Goldsmith, J. **Collaborative Research: Broader Impacts for Research and Discovery Summit**, NSF, 4/14/2010 - 4/15/2012, $510,605, Clemson Share: $137,927.

22. Gilbert, J.E., **BPC-AE: Collaborative Research: Strengthening and Expanding the Empowering Leadership Alliance**, NSF, 02/04/2010 – 01/31/2012, $923,786.00, Clemson Share: $51,998.

23. Gilbert, J.E., **CI Fellows Postdoc**, Computing Research Association, 9/7/2009 – 9/6/2010, $140,000.

24. Dozier, G., Jackson, J., Biggers, M., Gilbert, J.E., & Moore, L., **NSF BPC-AE: Collaborative Research: The Alliance for the Advancement of African-American Researcher in Computing (A4RC)**, NSF, 09/01/2009 – 08/31/2011, $1,498,076.00, Clemson Share: $154,092.

25. Gilbert, J.E. (PI), Chattaraman, V. & Kwon, W., **NSF HCC: Small: Conversational Agents in Web-Based Consumer Environments Designed for Older Users,** NSF, 08/15/2009 – 8/14/2012, $583,814, Clemson Share: $258,815.

26. Gilbert, J.E. (PI) & Seals, C.D., **NSF Collaborative Research: BPC-DP: African-American Researchers in Computing Sciences (AARCS),** NSF, 12/1/2008 – 5/1/2010, $215,952, AU Share: $128,450.

27. Gilbert, J.E., **NSF BPC-DP: Incorporating Cultural Tools for Math and Computing Concepts into the Boys and Girls Clubs of America,** NSF, 12/1/2008 – 11/30/2011, $190,516, AU Share: $198,516.

28. Gilbert, J.E. **Everyone Counts: Voice User Interface Demonstration Prototype**, Everyone Counts, Inc., 7/2008 – 8/2008, $4,088.

29. Chattaraman, V. (PI), Gilbert, J.E., & Kwon, W. **Bridging the Digital Divide to Enhance Internet Technology Use among the Elderly**, Auburn University Outreach Scholarship Grant, 5/2008 – 5/2009, $10,000.

30. Gilbert, J.E. **Accessibility in Online Electronic Voting**, Everyone Counts, Inc., 1/2008 – 7/2008, $15,000.

31. Watts, I.E. (PI) & Gilbert, J.E., **Tallapoosa Assistance Program (TAP)**, State of Alabama - Tallapoosa County, 10/1/2007 – 9/30/2008, $28,289.

32. Gilbert, J.E., **Total System Services Inc. Distinguished Professorship**, Total System Services Inc. Gift, 10/1/2007 – 10/1/2008, $100,000.

33. Hamilton, J.A., Chang, K. Dozier, G., Wang, Y. & Gilbert, J.E., **NSF #0621307 SFS: Scholarship Partnership with Alabama State University and Tuskegee University.** NSF, 9/1/2006 – 9/1/2009, $1,500,000.

34. Gilbert, J.E., **Implementation and User Evaluation of "Everyone Counts Online Electronic Voting System"**, Everyone Counts Inc., 1/1/2008 – 4/1/2008, $15,000.

35. Gilbert, J.E., **NSF IIS HCC: Prime III: Studying Usability & Security in Electronic Voting for Everyone**, NSF, 5/15/2007 – 8/15/2008, $93,056.

36. Gilbert, J.E., **Total System Services Inc. Distinguished Professorship**, Total System Services Inc. Gift, 10/1/2006 – 10/1/2007, $100,000.

37. Gilbert, J.E., **Microsoft Research External Research Fund,** Microsoft Corporation Research Gift, 6/1/2006 – 12/1/2007, $5,000.

38. Gilbert, J.E. **Auburn University Outreach Scholarship Grant**, 8/2006 – 8/2007, $14,000.

39. Gilbert, J.E. (PI), Seals, C.D., Dozier, G.V. & Jackson, J.F.L., **NSF BPC-DP: African-American Researchers in Computing Sciences (AARCS)**, NSF, 3/1/2006 – 3/1/2009, $421,288, AU Share: $330,473.

40. Dahlberg, T. (PI), Barnes, T. (CoPI), Seals, C.D., Gilbert, J.E. (Senior Personnel), et. al., **NSF BPC-A: The STARS Alliance: A Southeastern Partnership for Diverse Participation in Computing**, NSF, 3/1/2006 – 3/1/2009, $2,228,640, AU Share: $235,075.

41. Gilbert, J.E. (PI), **Producers Cattle Auction: Online Auction**, Producers Cattle Auction, 2/15/2006 – 5/15/2006, $2,909.78.

42. Gilbert, J.E. (PI), **Producers Cattle Auction: Online Auction**, Producers Cattle Auction, 1/1/2004 – 10/1/2005, $12,225.

43. Watts, I.E. (PI) & Gilbert, J.E., **Tallapoosa Assistance Program (TAP)**, State of Alabama - Tallapoosa County, 1/10/2005 – 1/10/2006, $30,273.

44. Gilbert, J.E. (PI) & Chapman, R., **E-Citation Usability Study**, University of Alabama, 6/2004 – 12/2004, $25,000.

45. Gilbert, J.E. (PI) & Dozier, G. V., **Distributed Data Mining**, Auburn University Internet2 Research, 6/2004 – 7/2005, $6,000.

46. Gilbert, J.E. (PI), Flowers, L., Moore, J.L. & Watford, B., **NSF ITWF: Scholars of the Future: An Implementation Model for Increasing Diversity in Information Technology #0420485**, NSF, 9/15/2004 - 9/15/2008, $754,983, AU Share: $549,731.

47. Gilbert, J.E. **Auburn University Competitive Research Grant**, 5/2003 – 5/2004, $3,000.

48. Gilbert, J.E. **Auburn University Internet2 Equipment Research Grant**, 6/2003 – 6/2004, $8,000.

49. Watts, I.E. (PI) & Gilbert, J.E., **Tallapoosa Assistance Program (TAP)**, State of Alabama - Tallapoosa County, 11/1/2003 – 10/1/2004, $29,572.

50. Gilbert, J.E., **Mobile and Pervasive User Interfaces for Information Retrieval**, Auburn University - Competitive Research Grant, 5/2003-5/2004**,** $3,000.

51. Chapman, R. (PI) & Gilbert, J.E., **VLETS Fieldable Phone System**, University of Alabama Subcontract, 5/2003 – 9/2003, $39,471.

52. Chang, K. (PI), Biaz, S., Chapman, R., Gilbert, J.E., & Lee, C., **Graduate Fellowships in Wireless Technologies**, U.S. Department of Education Graduate Assistance in Areas of Need (GAANN), 9/2003 – 9/2006, $393,552.

53. Gilbert, J.E. **NSF Graduate Research Fellowship**, 1/2003 – 9/2003, $18,544.

54. Gilbert, J.E. (PI), **Summer Technology Outreach Grant II**, Auburn University, 5/2004 – 9/2004, $16,000.

55. Gilbert, J.E. (PI), **Summer Technology Outreach Grant**, Auburn University, 5/2003 – 9/2003, $35,231.

56. Watts, I.E. (PI) & Gilbert, J.E., **Tallapoosa Assistance Program (TAP)**, State of Alabama - Tallapoosa County, 1/1/2003 – 10/1/2003, $60,818.

57. Brewer, J.W. (PI) & Gilbert, J.E., **Distance Learning and Outreach Technology, Auburn University Distance Learning and Outreach Office, 2/1/2002 – 8/1/2002, $10,000.**

58. Chapman, R., Chang, K., & Gilbert, J.E., **Voice Interface for Wireless Law Enforcement Systems**, University of Alabama, 10/2002 – 5/2003, $20,000.

59. York, B. (PI), Ellis, C., Gilbert, J.E., Giles, R. & Taylor, V., **NSF-ITR: New Approaches to Human Capital Development through Information Technology Research #0296169,** NSF, 9/2000 - 8/2005, $3,188,944, AU Share: $363,437.

Journal Publications

1. Charleston, L.J., Jackson, J.F.L., & Gilbert, J.E. (2014). **Preparing the Next Generation of African American Computing Science Faculty: A Response to the Obama Administration's Scientific Workforce Priorities**, *in E.M. Zamani-Gallaher (ed.) The Obama Administration and Educational Reform* (Advances in Education in Diverse Communities: Research, Policy and Praxis, Volume 10) Emerald Group Publishing Limited, pp. 205 – 222. DOI: 10.1108/S1479-358X20130000010010

2. Chattaraman, V., Kwon, W.S., Gilbert, J. E., & Li, S. (2014). **Virtual Shopping Agents: Persona Effects for Older Users**. Journal of Research in Interactive Marketing, 8,2, pp. 144-162.

3. Jackson, J.F.L., Charleston, L.J., & Gilbert, J.E., (2014). **The Use of Regional Data Collection to Inform University Led Initiatives: The Case of a STEM Education SWOT Analysis**, Journal of STEM Education, 15, 1, pp. 11-19.

4. Charleston, L.J., Gilbert, Escobar, B., & Jackson, J.F.L. (2014). **Creating a Pipeline for African American Computing Science Faculty: An Innovative Faculty/Research Mentoring Program Model**, The Journal of Faculty Development, 28, 1, pp. 85-92.

5. Gilbert, J.E., Dunbar, J., Ottley, A., & Smotherman, J.M. (2013). **Anomaly detection in electronic voting systems**. Information Design Journal, 20, 3, pp. 194-206.

6. Eglash, R., Gilbert, J.E., & Foster, E., (2013). **Toward Culturally Responsive Computing Education**, Communications of the ACM, 56, 7, pp. 33-36.

7. Gilbert, J.E. & Johnson, A.E., (2013). **A Study of Admissions Software for Achieving Diversity**, Psychnology Journal, 11, 1, pp. 67-90.

8. Jackson, J.F.L., Charleston, L. J., Gilbert, J.E., & Seals, C., (2013) **Changing Attitudes About Computing Science at Historically Black Colleges and Universities: Benefits of an Intervention Program Designed for Undergraduates**, Journal of African American Studies, 17, 2, pp. 162-173.

9. Ekandem, J.I., Davis, T.A., Alvarez, I., James, M.T., & Gilbert, J.E., (2013) **Evaluating the Ergonomics of BCI Devices for Research and Experimentation**, Ergonomics, 55, 5, 592-598.

10. Chattaraman, V., Kwon, W.S., & Gilbert, J. E. (2013). **Internet use and perceived impact on quality of life among older adults: A phenomenological investigation**. The International Journal of Health, Wellness, and Society, 2 (3), 1-13.

11. Gilbert, J.E., Martin, A.M., Rogers, G., McClendon, J., & Ekandem, J. (2012) **Hey, That's Not Who I Voted For! A Study on Touchscreen Ballot Design**, *ACM Interactions*, 19, 6, pp. 34-39.

12. Shim, S., Kwon, W.-S., Chattaraman, V., & Gilbert, J. E. (2012). **Virtual sales associates for mature consumers: Technical and social support in e-retail service interactions**. Clothing and Textiles Research Journal, 30(3), 232-248, Doi: 10.1177/0887302X12456903

13. Collins, S.N., Deer, C.J., & Gilbert, J.E. (2012) **Chemistry and Hip Hop: Outreach Efforts to Attract Minority Students to the Chemical Sciences**, The Chemical Educator, ISSN: 1430-4171, 17, 12, 175-178.

14. Chattaraman, V., Kwon, W.S., & Gilbert, J. E. (2012) **Virtual agents in retail websites: Benefits of simulated social interaction for older users**, Computers in Human Behavior, Doi: 10.1016/j.chb.2012.06.009.

15. Goggin, S., Byrne, M., & Gilbert, J.E., (2012) **Post-Election Auditing: Effects of Election Procedure and Ballot Type on Manual Counting Accuracy, Efficiency, and Auditor Satisfaction and Confidence**. Election Law Journal: Rules, Politics, and Policy, 11, 1, (March 2012), pp. 36-51.

16. Chattaraman, V., Kwon, W.-S., Gilbert, J. E., & Shim, S. I. (2011). **Virtual agents in e-commerce: Representational characteristics for seniors**. Journal of Research in Interactive Marketing, 5,4, 276-297.

17. Singh, A., Johnson, A., Alnizami, H. & Gilbert, J.E., (2011) **The potential benefits of multi_modal social interaction on the web for senior users**. The Journal of Computing Sciences in Colleges, 27, 2 (December 2011), pp. 135-141.

18. Williams, P.K., Soares, C.V., & Gilbert, J.E., (2012) **A Clustering Rule Based Approach for Classification Problems**, International Journal of Data Warehousing and Mining, 8, 1, pp. 1-23, Doi: 10.4018/jdwm.2012010101.

19. Jackson, J.F.L., Charleston, L.J., Gilbert, J.E., & Seals, C., (2011) **Changing Attitudes About Computing Science at Historically Black Colleges and Universities: Benefits of an Intervention Program Designed for Undergraduates**. *Journal of African American Studies*, pp. 1-12, Doi: 10.1007/s12111-011-9189-7.

20. Thornton, D. & Gilbert, J.E. (2011) **Investigating Player Behavior and Experience in Speech-Enabled Multimodal Video Games.** *The International Journal of Technology, Knowledge and Society*, 7,1, pp. 165-178.

21. Gilbert, J.E., McMillian, Y., Rouse, K., Williams, P., Rogers, G., McClendon, J., Mitchell, W., Gupta, P., Mkpong-Ruffin, I. & Cross, E.V. (2010) **Universal Access in e-Voting for the Blind**. *Universal Access in the Information Society Journal*, 9,4, pp. 357-365.

22. Gilbert, J.E., Martin, A.M., Eugene, W., Alnizami, H., Moses, W. & Morrison, D. (2010) **Driving Transportation Policy through Technological Innovation**. *ACM Interactions*, 17, 4, pp. 42-48.

23. Dawkins, S. & Gilbert, J.E., (2010) **Accessible, Private, and Independent Voting: The Prime III Voting System**. *User Experience*, 9, 2, pp. 16.

24. George, M.S., Soares, C.V., & Gilbert, J.E., (2009) **Combating Ethical Issues in University Admissions Using Technology.** *i-manager's Journal of Educational Technology*, 6,3, pp. 58-63.

25. Gilbert, J.E., Eugene, W., Arbuthnot, K., Hood, S., Grant, M.M., West, M.L. & Swanier, C. (2009) **Culturally Relevant Game Design: A Case Study for Designing Interactive Algebra Lessons for Urban Youth**. *i-manager's Journal of Educational Technology*, 5,3, pp. 54-60.

26. Seals, C., Rouse, K., McMillian, Y., Williams, A., Gilbert, J.E., and Chapman, R. (2009) **Computer Gaming at Every Age: A Comparative Evaluation of Alice,** *i-manager's Journal of Educational Technology*., 5,3, pp. 1-8.

27. Williams, A., Rouse, K., Seals, C.D., & Gilbert, J.E. (2009) **Enhancing Reading Literacy in Elementary Children using Programming for Scientific Simulations**. *International Journal on E-Learning*, 8,1, pp. 57-69.

28. Gilbert, J.E., MacDonald, J., Hill, R., Sanders, D., Mkpong-Ruffin, I., Cross, E.V., Rouse, K., McClendon, J., & Rogers, G. (2008) **Prime III: Defense-in-Depth Approach to Electronic Voting**. *Journal of Information Security and Privacy*, 4,3, pp. 16 – 35.

29. Gilbert, J.E. & Swanier, C. (2008) **Learning Styles: How do they fluctuate?** *Institute for Learning Styles Research Journal*, Volume 1, Fall 2008, pp. 29 – 40.

30. Lodree, A.W., Moore, J.L. & Gilbert, J.E. (2008) **Using Animated Agents for Postsecondary Mathematics**. *Journal of Educational Technology*, 5,1, pp. 31 – 37.

31. Gilbert, J.E. & Lewis, C. (2008) **An Investigation of Computational Holistic Evaluation of Admissions Applications for a Minority Focused STEM Research Program**. *Journal of STEM Education: Innovations and Research*, 9,1, pp. 1-8.

32. Gilbert, J.E. (2008) **Applications Quest: A Case Study on Holistic Admissions**. *Journal of College Admission*, Spring 2008, pp. 12 – 18.

33. Gilbert, J.E., Arbuthnot, K., Hood, S., Grant, M.M., West, M.L., McMillian, Y., Cross, E. V., Williams, P. & Eugene, W. (2008) **Teaching Algebra Using Culturally Relevant Virtual Instructors**. *The International Journal of Virtual Reality*, 7,1, pp. 21-30.

34. Gilbert, J.E., Williams, A. & Seals, C.D. (2007) **Clustering for Usability Participant Selection**. *Journal of Usability Studies*, 3,1, pp. 41 – 53.

35. Gilbert, J.E. & Goss, K., (2007) **A Multiple Approach Is Best**. *Speech Technology*, 12,6, *Information Today*, pp. 40 - 41.

36. Hura, S.L., Polkosky, M.D., & Gilbert, J.E. (2006) **Point, Counterpoint: What Three Experts Say About Speech Usability.** *User Experience*, 5,3, Usability Professionals' Association, pp. 16 – 18.

37. Gilbert, J.E. (2006) **Making a Case for BPC.** *Computer*, 39,3, IEEE Computer Society, pp. 83 – 86.

38. Gilbert, J.E. (2006) **Applications Quest: Computing Diversity.** *Communications of the ACM*, 49,3, ACM, pp. 99 – 104.

39. Zhong, Y. & Gilbert, J.E. (2005) **A Context-Aware Language Model for Spoken Query Retrieval.** *International Journal of Speech Technology*, 8, 2, Springer, pp. 203-219.

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146. Gilbert, J.E. & Eugene, W. (2007). **Building the Future Black Faculty Pipeline**. In *AfroGEEKS: Beyond the Digital Divide*, Edited by Everett, A. and Wallace, A.J. pp. 285-293.

147. Gilbert, J. E. (2000). **Beating The Odds, African Americans in Computer Science.** Chapter 10 in Jones, L. (Ed.) *Brothers of the Academy: Up And Coming Black Scholars Earning Our Way in Higher Education*, Stylus Publishing. pp. 140-148.

Other Publications

148. Camp, T. & Gilbert, J.E. (2010) **Broader Impacts – Should You Care?** *Computing Research News: A Publication of the Computing Research Association*, 22,5, p. 2.

149. Blake, M.B. & Gilbert, J.E., (2010) **Black Computer Scientists in Academe: an Endangered Species?** *The Chronicle of Higher Education, Diversity in Academe,* September 24, 2010, pp. B35-B37.

150. Coney, L., Gilbert, J.E., Neumann, P.G., Nilsson, E., Pincus, J. & Schneier, B., (2008) **E-Deceptive Campaign Practices Report: Internet Technology & Democracy 2.0**, *Electronic Privacy Information Center*, October 20, 2008.

151. Gilbert, J.E. (2008) **Silos of Academe Thwart Diversity on Campuses**, *The Chronicle of Higher Education, Diversity in Academe*, September 26, 2008, pp. B45-B46.

152. Kaushansky, K., Gilbert, J.E., Hura, S. & Witt-Ehsani, S. (2008) **Moving the Conversation Forward**, speechTECHNOLOGY Magazine, May 2008, pp. 31- 35.

153. Gilbert, J.E., Jackson, J. & Seals, C. (2008) **African-American Researchers in Computing Sciences: A Model for Broadening Participation in Computing.** *Computing Research News: A Publication of the Computing Research Association*, 20,3, pp. 2, 23.

154. Gilbert, J.E., & Jackson, J.F.L. (2007). **M7 STEM White Paper**: Final report. Milwaukee, WI: Marquette University.

155. Bloom, J., Gilbert, J.E., Houwing, T., Hura, S., Issar, S., Kaiser, L., Larson, J.A., Leppik, D., Mailey, S., Mane, A., McTernan, F., McTear, M., Pollock, S., Shinn, P., Stifelman, L. & Wilson, D. (2005) **Ten Criteria for Measuring Effective Voice User Interfaces**, speechTECHNOLOGY Magazine, November/December 2005, pp. 31- 35.

156. Larson, J.A., Applebaum, T., Byrne, B., Giangola, J., Gilbert, J.E., Green, R.N., Hebner, T., Houwing, T., Hura, S., Issar, S., Kaiser, L., Kaushansky, K., Kilgore, R., Lai, J., Leppik, D., Mailey, S., Margulies, E., McArtor, K., McTear, M. & Sachs, R., (2005) **Ten Guidelines for Designing a Successful Voice User Interface**, speechTECHNOLOGY Magazine, January/February 2005, pp. 51 - 53.

Patents and Patent Applications

1. Gilbert, J.E. "Nominal Population Metric: Clustering of Nominal Application Attributes," US 8,612,176 B2, December 17, 2013.

Invited Talks/Keynotes

1. (Keynote)
   Gilbert, J.E., **Societal Impacts through Research and Diversity: Who We Are and What We Do**, University of Florida College of Public Health & Health Professions Diversity Day, October 23, 2014.

2. (Keynote)
   Gilbert, J.E., **Worlds Ahead through STEM Research: Your Opportunity to Make an Impact**, Florida International University McNair Scholars Research Conference, Miami, FL, October 17, 2014.

3. (Keynote Panel)
   Gilbert, J.E., **Why I Pursued a PhD and Why You Should Too**, GEM Grad Lab, University of Florida, Gainesville, FL, September 26, 2014.

4. (Keynote Panel)
   Gilbert, J.E., Karasick, M. & Meisel, W., **The Evolution of Computers and Society**, SpeechTEK 2014, New York, NY, August 20, 2014.

5. Gilbert, J.E. & Eugene, W., **The VoterPass Reservation System**, SpeechTEK 2014, New York, NY, August 19, 2014.

6. Gilbert, J.E., **Applications Quest: A New Way of Exploring Diversity in College Admissions**, 2014 Diversity Leadership Retreat, Orlando, FL, July 25, 2014.

7. (Keynote)
   Gilbert, J.E., **Societal Impacts through Research and Diversity: Who We Are and What We Do**, Diversity in the Computational Geosciences Workshop, National Center for Atmospheric Research, Boulder, CO, June 24, 2014.

8. Gilbert, J.E., **Reforming the Testing and Certification Process**, U.S. Election Assistance Commission (EAC) Roundtable Discussion, Silver Spring, MD, June 12, 2014.

9. (Keynote)
   Gilbert, J.E., **Different Pathways, One Journey: The Many Experiences of Black Graduate Students**, National Black Graduate Student Association 26th Annual Conference, Baton Rouge, LA, May 29, 2014.

10. (Keynote)
    Gilbert, J.E. **Computing Science Participation in the Age of Digital Media**, Playful Learning Summit, Clemson University, Clemson, SC, May 17, 2014.

11. Gilbert, J.E., **New Voting Technologies**, The League of Women Voters of South Carolina, State Council Meeting, Columbia, SC, April 26, 2014.

12. Gilbert, J.E., **Inspiring the Next Generation**, Congressional Black Caucus Science and Technology Brain Trust Expanding Minority Participation in Science, U.S. News and World Reports STEM Solutions Conference, Washington, DC, April 25, 2014.

13. (Keynote, Distinguished Lecture)
Gilbert, J.E., **Changing the Landscape: Voting Rights, Technology and Policy**, University of Illinois at Chicago, Chicago, IL, April 17, 2014.

14. (Keynote)
Gilbert, J.E., **Research with Societal Impacts from Voting Rights to School Violence**, Honors Convocation and 16th Annual Research Symposium, Fisk University, Nashville, TN, April 10, 2014.

15. (Keynote)
Gilbert, J.E., **Research with Societal Impacts from Voting Rights to School Violence**, 16th Annual Research Symposium, Fisk University, Nashville, TN, April 9, 2014.

16. Gilbert, J.E., **Enhancing Diversity in Technology (EDIT)**, Morgan Stanley, New York, NY, April 8, 2014.

17. Gilbert, J.E., **Making A Difference in Society Through Research and Innovation**, Virginia State University, Richmond, VA, March 21, 2014.

18. Gilbert, J.E., **Innovation in Voting Accessibility**, FCC Accessibility & Innovation Initiative, Washington, DC, March 11, 2014.

19. Gilbert, J.E., **Societal Impacts of Research, Innovation and Diversity: Changing How Voting Works**, University of the Virgin Islands, St. Thomas Campus, St. Thomas, U.S. Virgin Islands, February 12, 2014.

20. (Keynote)
Gilbert, J.E., **Can You Change the World?**, STEM Men of Color "Access to Knowledge & Empowerment" Symposium, Cornell University, Ithaca, NY, February 1, 2014.

21. Gilbert, J.E., **Prime III: Voting Accessibility and Security in the 21st Century**, University of Florida, Gainesville, FL, January 17, 2014.

22. Gilbert, J.E., **Mentoring the Next Generation of Computing Scholars**, 2014 CE21 PI and Community Meeting, Orlando, FL, January 8, 2014.

23. Gilbert, J.E., **Voiceing: A Hands-Free, Eyes-Free Approach to Texting While Driving**, InnoMobility 2013, Greenville, SC, November 6, 2013.

24. Gilbert, J.E., **Creating the Entrepreneur Pipeline**, FOCUS100 DigitalUndivided, New York, NY, October 5, 2013.

25. Gilbert, J.E., **History in the Making: Innovation, Research, and Diversity**, Auburn University Black Graduate and Professional Student Association, Auburn, AL, September 30, 2013.

26. Gilbert, J.E., **Public Intellectualism: Media Interaction, Social Branding, and Knowledge**, 2013 Conference of Ford Fellows Critical Transformations and Intersections: Knowledge, Community, and Action, Washington, DC, September 27, 2013.

27. Gilbert, J.E., **Looking Ahead: Creating Opportunities for the Future,** 2013 Congressional Black Caucus Science and Technology Brain Trust, Washington, DC, September 20, 2013.

28. Gilbert, J.E., **The Future of Voting Technology**, Presidential Commission on Election Administration Testimony, Cincinnati, OH, September 19, 2013.

29. (Keynote)
Gilbert, J.E., **Applications Quest and Strict Scrutiny in the Post Fisher Era**, 2013 Lucile Kelling Henderson Lecture, University of North Carolina at Chapel Hill, Chapel Hill, NC, September 12, 2013.

30. (Keynote)
Gilbert, J.E., **Societal Impacts Realized Through Research and Diversity**, STARS Celebration Conference, Atlanta, GA, August 16, 2013.

31. Gilbert, J.E., **Building a House for Diversity: A Case In Point Example,** Future Faculty Symposium, Purdue University, West Lafayette, IN, August 7, 2013.

32. (Keynote)
Gilbert, J.E., **The Future of Voting Accessibility & Security**, 2013 Alumni Conference Department of Computer Science and Software Engineering, Miami University, Oxford, OH, April 12, 2013.

33. Gilbert, J.E., **Mentoring Young Faculty to Stay and Excel in the Academy**, Tuskegee University Science and Technology Open House, Montgomery, AL, April 6, 2013.

34. Gilbert, J.E., **Accessibility Research and Elections: Where are we now?**, NIST/EAC Accessible Voting Technology Research Workshop, Gaithersburg, MD, April 1, 2013.

35. Gilbert, J.E., **Electronic Voting and Policy**, University of Georgia Science and Technology/Higher Education Forum, Athens, GA, March 26, 2013.

36. Gilbert, J.E., **Prime III: Accessibility, Security and Usability in Voting**, Oconee County Democratic Party, Seneca, SC, March 16, 2013.

37. (Keynote)
Gilbert, J.E., **Blacks in Higher Education and Civic Responsibility: If Not You, Then Who?**, 25th Annual National Black Graduate Student Conference, Dearborn, MI, March 8, 2013.

38. (Keynote)
Gilbert, J.E., **The Changing Face of the Academy: Mentoring**, ACM SIGCSE 2013, Denver, CO, March 7, 2013.

39. Gilbert, J.E., **Academics and Technologists Look at the Future**, NIST/EAC Future of Voting Systems Symposium, Gaithersburg, MD, February 28, 2013.

40. Gilbert, J.E., **Accessibility and Voting,** Protection and Advocacy for People with Disabilities, Inc., Columbia, SC, January 23, 2013.

41. (Keynote)
Gilbert, J.E., **Technology and It's Role in Civic Engagement**, Rho Delta Lambda Chapter of Alpha Phi Alpha Fraternity, Inc. Annual Martin Luther King, Jr. Memorial Celebration, Anderson, SC, January 19, 2013.

42. Gilbert, J.E., **Universal Design in Electronic Voting: Making Voting More Accessible and Secure**, Purdue University, West Lafayette, IN, October 29, 2012.

43. Gilbert, J.E., **Achieving Historical Diversity: Steps Toward Building a High Quality, Diverse Computing Department**, Purdue University, West Lafayette, IN, October 29, 2012.

44. Gilbert, J.E., **Human-Centered Computing**, Albany State University, Albany, GA, September 27, 2012.

45. Gilbert, J.E., **Best Practices for Veterans Voting: Examining Election Operations, Procedures and Accessibility**, U.S. Election Assistance Commission Roundtable, Washington, DC, September 13, 2012.

46. Gilbert, J.E., **Black Males and STEM,** Challenging the Status Quo: A Forum on Educational Equity and Inclusion for School-Age Black Males, The Congressional Black Caucus Foundation, The Urban Education Collaborative at UNC Charlotte and The Howard University School of Education, Charlotte, NC, September 5, 2012.

47. Gilbert, J.E., **Using Speech to Reduce Distracted Driving**, InnoMobility, Greenville, SC, July 19, 2012.

48. Gilbert, J.E., **Human Factors in Healthcare**, CableLabs Inc., Broomfield, CO, July 18, 2012.

49. (Keynote)
Gilbert, J.E., **Achieving Social Justice in Affirmative Action through Technology**, Technoscience as Activism, Rensselaer Polytechnic Institute, Troy, NY, June 27, 2012.

50. Gilbert, J.E., **Conversation Design for Spoken Language Systems**, i3 iSchool Inclusion Institute of Information Sciences, University of Pittsburgh, Pittsburgh, PA, June 7, 2012.

51. (Keynote)
Gilbert, J.E., **Trailblazers for the Next Generation,** Booker T. Washington Community Center 78th Annual Awards Dinner, Hamilton, OH, April 28, 2012.

52. Gilbert, J.E., **Advanced Learning Technologies and Culturally Relevant Computing**, University of Wisconsin-Madison, Madison, WI, April 20, 2012.

53. Gilbert, J.E., **Broadening Participation in Computing: Breaking Down Stereotypes of Underrepresented Students in the Computational Fields**, University of Wisconsin-Madison, Madison, WI, April 20, 2012.

54. Gilbert, J.E., **Applications Quest: A Data Mining Approach to Diversity in Admissions**, University of Wisconsin-Madison, Madison, WI, April 20, 2012.

55. Gilbert, J.E., **Driver Distraction for Young Connected Drivers**, University of Wisconsin-Madison, Madison, WI, April 19, 2012.

56. (Keynote)
Gilbert, J.E., **Socially Inspired Computing: How Science & Technology Can Change the World!** Benedict College, Columbia, SC, April 3, 2012.

57. Gilbert, J.E., **One Machine, One Vote for Everyone**, TEDx Greenville, Greenville, SC, March 30, 2012.

58. Gilbert, J.E., **Changing the Landscape of Voting and Voter Registration through Universal Design**, University of Maryland Baltimore County (UMBC), Baltimore, MD, March 28, 2012.

59. Gilbert, J.E., **Innovations Promoting Older Adult Use of Technology**, 8th Annual Aging Research Day Aging: From Cell to Society, Greenville Hospital System University Medical Center, Greenville, SC, March 9, 2012.

60. Gilbert, J.E., **Revolutionized Teaching**, TEDxGreenvilleSalon, Greenville, SC, February 29, 2012.

61. (Keynote)
Gilbert, J.E., **Innovation, Mentoring and Society: How One Person Can Make A Difference**, Racial Legacies & Learning XXVII: How To Talk About Race, Miami University Hamilton, Hamilton, OH, February 14, 2012.

62. Gilbert, J.E. & Martinez, D.W., **The Critical Role of Mentoring in Increasing Graduates and Faculty of Color**, Association of American Colleges & Universities Annual Meeting, Washington, DC, January 27, 2012.

63. Gilbert, J.E., **Reducing Driver Distraction for Young Connected Drivers**, Nuance Automotive Forum Detroit 2011, Detroit, MI, November 8, 2011.

64. Gilbert, J.E., **Universal Design in Electronic Voting: One Machine, One Vote for Everyone**, Iowa State University, Ames, IA, October 28, 2011.

65. Gilbert, J.E., **Effective Mentoring**, Southern Region Education Board, Institute on Teaching and Mentoring Junior Faculty Development Conference, Atlanta, GA, October 22, 2011.

66. (Franklin Visiting Scholar Lecture)
Gilbert, J.E., **Increasing the Accessibility of Voting through Universal Design**, University of Georgia, Athens, GA, October 17, 2011.

67. Gilbert, J.E., **Powering the Connected Car with Voice**, SpeechTEK 2011, New York, NY, August 8, 2011.

68. Gilbert, J.E., **Preparing for the Academic Job Market**, Empowering Leadership Alliance, Webinar, June 2, 2011.

69. (Anne Margaret Johnstone Lecture)
Gilbert, J.E., **Prime III: A Universally Designed Electronic Voting System**, University of Maine, Orono, ME, April 18, 2011.

70. Gilbert, J.E., **The African-American Distributed Multiple Learning Styles System: An Ethnocomputing Approach to Teach Algebra**, Morehouse College, Atlanta, GA, March 1, 2011.

71. (Keynote)
Gilbert, J.E., **Courageous Conservations: Taking it to the Next Level with African-American and Latino Males**, Black, Brown & College Bound: Meeting the Challenge of Higher Education, Tampa, FL, February 24, 2011.

72. (Keynote)
Gilbert, J.E., **Holistic Usability Measure: A Holistic Approach to Measuring Interface Usability**, Greenville Spartanburg Anderson Technology Council (GSATC), Greenville, SC, February 9, 2011.

73. (Keynote)
Gilbert, J.E., **African-American Distributed Multiple Learning Styles Systems: Culturally Relevant Learning**, South Carolina Council for African American Studies (SCCAAS) Conference, Columbia, SC, February 5, 2011.

74. Gilbert, J.E., **Innovations in Research through Human-Centered Computing**, Langston University, Langston, OK, November 18, 2010.

75. Gilbert, J.E., **Prime III: The Next Generation of Electronic Voting Research**, IEEE Oklahoma City Section, Oklahoma City, OK, November 17, 2010.

76. (Keynote)
Gilbert, J.E., **voiceTEXT: A Safer Alternative to Texting While Driving**, Consortium for Computing Sciences in Colleges – Southeastern Region, Spelman College, Atlanta, GA, November 12, 2010.

77. Gilbert, J.E., **The Need to Examine and Address the Current Status of Minority Males in Higher Education**, Southern Region Education Board, Institute on Teaching and Mentoring, Tampa, FL, October 29, 2010.

78. (Keynote)
Gilbert, J.E., **Creating Critical Mass: Recruiting and Mentoring a Diverse Research Group**, Colorado School of Mines, Golden, CO, October 28, 2010.

79. Gilbert, J.E., **Using Technology to Achieve Diversity: A New Strategy for Affirmative Action**, Colorado School of Mines, Golden, CO, October 28, 2010.

80. Gilbert, J.E., **Entrepreneurship & the Professoriate**, Colorado School of Mines, Golden, CO, October 28, 2010.

81. Gilbert, J.E., **Hip-Hop, Video Games and Math**. USA Science & Engineering Festival, Meet the Scientists! Washington, DC, October 23, 2010.

82. (Keynote)
Gilbert, J.E., **Pathways to Success through Innovative STEM Research in Human-Centered Computing**, Louis Stokes South Carolina Alliance for Minority Participation Annual Undergraduate Research Conference, Orangeburg, SC, October 15, 2010.

83. Gilbert, J.E., **Human-Centered Computing: People, Technology, Information and Policy**, Johnson C. Smith University Lyceum Series, Charlotte, NC, September 30, 2010.

84. Gilbert, J.E., **Universal Design in Electronic Voting: 1 Machine, 1 Vote for Everyone**, University of North Carolina at Chapel Hill, Chapel Hill, NC, September 24, 2010.

85. Gilbert, J.E., **Why Should You Go to Graduate School?**, North Carolina A&T University, Greensboro, NC, September 23, 2010.

86. (Keynote)
Gilbert, J.E., **Entrepreneurship and the Professoriate: Yes, Professors are Entrepreneurs Too**, STARS Alliance 5th Annual Celebration 2010, ChampionsGate, FL, August 8, 2010.

87. Gilbert, J.E., **Accessible Voting.** U.S. Election Assistance Commission, Washington, DC, August 5, 2010.

88. Gilbert, J.E., **Alphanumeric Recognition of License Tag Data**, SpeechTEK 2010, New York, NY, August 2, 2010.

89. Gilbert, J.E., **TeachEHR: Who's Training the Clinical Workforce?**, Usability in Health IT: Technical Strategy, Research, and Implementation Roundtable, National Institute of Standards and Technology, Gaithersburg, MD, July 13, 2010.

90. Gilbert, J.E., **VoiceTEXT vs. Voice to Text**, York One Academy, York, SC, May 25, 2010.

91. Gilbert, J.E., **Tenure and Promotion: Rules of Engagement**, South East Alliance for Graduate Education and the Professoriate, Atlanta, GA, May 18, 2010.

92. Gilbert, J.E., **Texting While Driving: Is There A Safe Alternative?**, Colorado School of Mines, Golden, CO, May 3, 2010.

93. Gilbert, J.E., **Driver Distraction**, Networked Vehicle Association Conference: Apps on Wheels, Stanford University, San Joses, CA, April 28, 2010.

94. Gilbert, J.E., **Publishing for Success,** NSF Minority Faculty Development Workshop, Massachusetts Institute of Technology, Cambridge, MA, March 23, 2010.

95. Gilbert, J.E., **Broadening Participation in Computing: Service or Research?**, University of North Carolina at Charlotte, Charlotte, NC, March 19, 2010.

96. Gilbert, J.E., **Prime III: Universal Design Research in Electronic Voting,** Georgia Institute of Technology, GVU Brownbag Lecture Series, Atlanta, GA, March 11, 2010.

97. Gilbert, J.E., **Human Centered Computing and Technology Innovation**, Norfolk State University, Norfolk, VA, January 29, 2010.

98. Gilbert, J.E., **Socially Inspired Computing and Innovation: Solving National Problems**, Hampton University, Hampton, VA, January 28, 2010.

99. Gilbert, J.E. & Jackson, J.F.L., **Broadening Participation in Computing**, 8th National Conference on Black Student Achievement, Clemson University, Clemson, SC, January 25, 2010.

100. Gilbert, J.E., **Accessible Voting with Prime III**, San Francisco Voting System Task Force, San Francisco, CA, January 15, 2010.

101. Gilbert, J.E., **Incorporating Universal Design Principles into Electronic Voting**, University of Washington, Seattle, WA, November 10, 2009.

102. Gilbert, J.E., **Diversity Redefined in the New Affirmative Action Era**, University of Washington, Seattle, WA, November 10, 2009.

103. Gilbert, J.E., **The Need to Examine and Address the Current Status of Minority Males in Higher Education**, The COMPACT for FACULTY DIVERSITY, 2009 Institute on Teaching and Mentoring, Arlington, VA, October 23, 2009.

104. Gilbert, J.E., **Why Should You Go To Graduate School?**, Tuskegee University, Tuskegee, AL, October 21, 2009.

105. Gilbert, J.E., **Navigating the Academy for Career, Leadership and Community,** 2009 Conference of Ford Fellows, Beckman Center, National Academies, October 16, 2009.

106. Gilbert, J.E., **Tradeoffs in Electronic E2E Voting Systems**, National Institute of Standards and Technology Workshop on End-to-End Voting Systems, George Washington University, Washington, DC, October 14, 2009.

107. Gilbert, J.E., **Affirmative Action Redefined through Technology**, Kean University, Union, NJ, October 5, 2009.

108. Gilbert, J.E., **Incorporating Universal Design Principles in Electronic Voting**, Lamar University, Beaumont, TX, September 25, 2009.

109. Gilbert, J.E., **Issues in STEM Competitiveness: The Impact of Underrepresentation in Computing Sciences on the African-American Community and the Nation**, Colgate University, Hamilton, NY, September 18, 2009.

110. Gilbert, J.E., **Standards, Security and Accessible Voting.** National Institute of Standards and Technology, Gaithersburg, MD, September 2, 2009.

111. Gilbert, J.E., **VUI Design for Anonymous Name Spelling in Public Environments**, SpeechTEK 2009, New York, NY, August 24, 2009.

112. Gilbert, J.E., **Achieving Diversity in the New Era of Affirmative Action with Technology**, American Association of Black in Higher Education (AABHE) Leadership Institute, Miles College, Birmingham, AL, July 24, 2009.

113. Gilbert, J.E., **Prime III: Universal Accessibility in Voting.** U.S. Election Assistance Commission, Washington, DC, June 2, 2009.

114. Gilbert, J.E., **Software for Admissions That Provides Holistic Diversity and Aheres to all Judicial Decisions on the use of Race/Ethnicity, Gender in Admissions.** 22nd Annual National Conference on Race & Ethnicity in American Higher Education, San Diego, CA, May 29, 2009.

115. Gilbert, J.E., **Security & Technology of Internet Voting**. Alabama League of Women Voters, Birmingham, AL, May 2, 2009.

116. Gilbert, J.E., **Emerging Trends and Entrepreneurship.** Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI), Morgan State University, Baltimore, MD, April 17, 2009.

117. Gilbert, J.E., **Why Should You Go To Graduate School?** Albany State University, Albany, GA, April 10, 2009.

118. Gilbert, J.E., **Applications Quest: Achieving Equity and Diversity in Admissions with Data Mining.** University of Florida, Gainesville, FL, March 23, 2009.

119. Gilbert, J.E., **Broadening Participation in Computing.** Prairie View A&M University, Prairie View, TX, March 12, 2009.

120. Gilbert, J.E., **Broadening Participation in Computing: Research, Graduate School and the Professoriate.** Fort Valley State University, Fort Valley, GA, March 6, 2009.

121. Gilbert, J.E., **The Prime III Voting System Project.** University of Maryland, Baltimore County, Baltimore, MD, February 20, 2009.

122. (Keynote)
Gilbert, J.E., **Computing Diversity in Higher Education in the 21st Century.** Arizona State University, Tempe, AZ, February 18, 2009.

123. Gilbert, J.E., **Hip-Hop Music and Math**. American Association for the Advancement of Science and Science Chicago, 2009 AAAS Annual Meeting, Meet the Scientists at AAAS Family Science Days! Chicago, IL, February 15, 2009.

124. Gilbert, J.E., **Applications Quest: A Computational Solution to Affirmative Action in the 21st Century**. University of Alabama, Tuscaloosa, AL, January 30, 2009.

125. Gilbert, J.E., **The Future of Underrepresented Minority Based Programs**, Alliance for Graduate Education in Mississippi (AGEM) Winter Scholar Symposium, Jackson State University, Jackson, MS, January 23, 2009.

126. Gilbert, J.E., **Modern Day Affirmative Action: Computing Race and Gender Conscious Admissions in the 21st Century**, Princeton University, Princeton, NJ, November 17, 2008.

127. (Wes McJulien Lecture)
Gilbert, J.E., **Advancing Learning through Culture, Technology and Instruction**, 2008 Association for Educational Communications & Technology (AECT), Orlando, FL, November 7, 2008.

128. Gilbert, J.E., **Usable Security in Electronic Voting**, Columbus State University, Columbus, GA, November 5, 2008.

129. Gilbert, J.E., **Prime III: The Intersection Between Usability and Security**, Clemson University, Clemson, SC, October 10, 2008.

130. (Keynote)
Gilbert, J.E., **Excellence in Academia and Beyond**, National McNair Scholars Research Conference and Graduate School Fair, University of Delaware, Newark, Delaware, October 3, 2008.

131. Gilbert, J.E., **Computing in the 21st Century: Innovative Solutions to Real World Problems**. Rochester Institute of Technology, B. Thomas Golisano College of Computing and Information Sciences Dean's Lecture Series, September 26, 2008.

132. Gilbert, J.E., **A New Strategy for Affirmative Action**. National Academies, Washington, DC, September 17, 2008.

133. (Keynote)
Gilbert, J.E., **Changing The World Through Technology**, Spelman College, Atlanta, Georgia, September 8, 2008.

134. (Keynote)
Gilbert, J.E., **From the Classroom to the Boardroom in the Academic World**, BDPA 9th Annual Scholarship and Education Awards, BDPA Southern Minnesota Chapter, Rochester, MN, August 24, 2008.

135. Gilbert, J.E., **Prime III: A Multimodal Approach to Electronic Voting**, SpeechTEK 2008, New York, NY, August 19, 2008.

136. Gilbert, J.E. **Innovation: Where Computing and Societal Problems Meet.** 2008 STARS Celebration, Auburn, AL, August 12, 2008.

137. Gilbert, J.E. Congressional Testimony, Committee on Rules and Administration, **Bipartisan Electronic Voting Reform Act of 2008**, July 30, 2008, Washington, DC.

138. Gilbert, J.E. **Admissions Equity: Reality and Results**. Washington Duke Inn, Durham, NC, June 26, 2008.

139. Gilbert, J.E. **Prime III: Electronic Voting in the 21st Century**. Monmouth University, May 2, 2008.

140. Gilbert, J.E. **Can Holistic Admissions Replace Affirmative Action?** Education Writers Association, 61st Annual Conference, Chicago, IL, April 25, 2008.

141. Gilbert, J.E. **Achieving Diversity in the New Affirmative Action Era**. Virginia Tech, April 22, 2008.

142. Gilbert, J.E. **Shaping the Future of Voting: An Exploration of the Human Factors and HCI Challenges in the Design and Deployment of Prime III**. Virginia Tech, April 22, 2008.

143. (Keynote)
Gilbert, J.E. **Engineering Research and Innovation in the 21st Century**. 34th Annual National Society of Black Engineers Convention, Orlando, FL, March 22, 2008.

144. (Keynote)
Gilbert, J.E. **Entrepreneurship and Innovation in the Academy**. 20th National Black Graduate Student Association Conference, Chicago, IL, March 14, 2008.

145. Gilbert, J.E. **Secure, Equal Access for Everyone in Voting**. Auburn University Elderhostel, March 13, 2008.

146. Gilbert, J.E. **Prime III: A Multimodal Approach to Electronic Voting**. Voice Search Conference, San Diego, CA, March 10, 2008.

147. Gilbert, J.E. **Prime III: Innovations in Electronic Voting**. Information Technology & Innovation Forum, Capitol Hill, Washington, D.C. March 6, 2008.

148. (Keynote)
Gilbert, J.E. **Carter G. Woodson and the Origins of Multiculturalism**. USDA – Natural Resources Conservative Service Black History Observance, Auburn, AL, February 28, 2008.

149. Gilbert, J.E. **Community, Technology and Innovation in the 21st Century**. Tuskegee University, Tuskegee, AL, February 22, 2008.

150. (Keynote)
Gilbert, J.E. **Innovation, Passion and Research: Ingredients for Success**. National Association of Academies of Science and American Junior Academies of Science Banquet, Boston, MA, February 16, 2008.

151. Gilbert, J.E. **Broadening Participation in Computing: AARCS Program**. American Association for the Advancement of Science in Promoting the Success of Minority Graduate Students Session, Boston, MA, February 16, 2008.

152. Gilbert, J.E. **Achieving Diversity Without Preference in the New Affirmative Action Era.** University of Colorado-Boulder, Boulder, CO, February 6, 2008.

153. Gilbert, J.E. **Achieving Diversity Without Preference in the New Affirmative Action Era.** Wayne State University Law School, Detroit, MI, January 23, 2008.

154. Gilbert, J.E. **Community Benefits of Technological Progression and Advancement.** People of Action for Community Enrichment, Opelika, AL, January 19, 2008.

155. Gilbert, J.E. **African-American Researchers in Computing Sciences (AARCS): A Program for Broadening Participation in Computing.** IBM T. J. Watson Research Center, Hawthorne, NY, January 16, 2008.

156. Gilbert, J.E. **Electronic Voting for Senior Citizens.** Osher Lifelong Learning Institute, Auburn, AL, January 14, 2008.

157. Gilbert, J.E. **2008 Disability Services: How to Affect Change in an Election Year Symposium hosted by the Georgia Disability Vote Project at the Center for the Visually Impaired**, Atlanta, GA, January 7, 2008.

158. Gilbert, J.E. **Prime III: A Usable Security Model for Electronic Voting**, Carnegie Mellon University, Pittsburgh, PA, September 12, 2007.

159. Gilbert, J.E., **Preparation for the Professoriate: Pathways, Passion, and Purpose**, PROMISE: Maryland's Alliance for Graduate Education and the Professoriate (AGEP), Baltimore, Maryland, August 17, 2007.

160. Gilbert, J.E. **Prime III: A Multimodal Electronic Voting Platform.** National BDPA Conference, Washington, DC, August 15, 2007.

161. Gilbert, J.E. & Payton, F. **Racioethnic Imbalance in CS and IS: How Do We Change the Face of the Classroom?** National BDPA Conference, Washington, DC, August 15, 2007.

162. Gilbert, J.E. **Prime III: One Machine, One Vote for Everyone.** IBM, Charlotte, NC, June 14, 2007.

163. Gilbert, J.E. **Innovation and Diversity in the 21st Century.** Rensselaer Polytechnic Institute, Troy, NY, April 25, 2007.

164. Gilbert, J.E. **Applications Quest: A Strategy to Replace Affirmative Action & Social Justice.** Fixing the Academy: Tapping into Black Excellence on White Campuses 2007, Johns Hopkins University, Baltimore, MD, April 13, 2007.

165. Gilbert, J.E. **Applications Quest … A Holistic Solution to Application Processing.** American Bar Association Presidential Advisory Council on Diversity in the Profession Eastern Regional Pipeline Workshop, Loyola University-Chicago Law School, Chicago, IL, March 23, 2007.

166. (Keynote)
Gilbert, J. E. **Prime III & The Future of Electronic Voting.** 29th Annual Leroy Roquemore Computer Science Symposium, Southern University, Baton Rouge, LA, March 15, 2007.

167. Cross, E.V. & Gilbert, J. E. **The Prime Voting System: Multimodality & Politics.** AVIOS/SpeechTEK West 2007, San Francisco, California, February 22, 2007.

168. Gilbert, J.E. **Applications Quest: Achieving Diversity in the Proposal 2 Era System**, University of Michigan, Ann Arbor, MI, January 30, 2007.

169. Gilbert, J.E. **The Prime Voting System: A Secure, Multimodal Electronic Voting System**, Northwestern University, Evanston, IL, January 16, 2007.

170. Gilbert, J.E. **Intelligent Instruction with Computer Assisted Pedagogy**, Juxtopia Urban Learning Technology (JULT) Conference, Baltimore, MD, December 2, 2006.

171. Gilbert, J.E. **Race Conscious Policies in Education with Applications Quest**, Jackson State University, Jackson, MS, November 9, 2006.

172. Gilbert, J.E. **Barriers for Underrepresented Groups to STEM: Why Don't You Like Science, Technology, Engineering or Mathematics?**, Jackson State University, Jackson, MS, November 9, 2006.

173. (Keynote)
Gilbert, J.E. **Academic Jobs … The Professoriate**, Southern Region Education Board, Institute on Teaching and Mentoring, Miami, FL, October 27, 2006.

174. (Keynote)
Gilbert, J.E. **Research, Mentoring, Graduate School and the Professoriate**, Bring IT On!, Indiana University, Bloomington, IN, October 20, 2006.

175. Gilbert, J.E., **Applications Quest: Affirmative Action, Race Neutral Admissions, and Holistic Review ... What's Really Fair?**, Indiana University, Bloomington, IN, October 20, 2006.

176. Gilbert, J.E., **Computing Diversity: Affirmative Action and Race Neutral Policies**, Cornell University, Ithaca, NY, September 13, 2006.

177. Gilbert, J.E., **Preparation for the Professoriate: Pathways, Passion, and Purpose**, PROMISE: Maryland's Alliance for Graduate Education and the Professoriate (AGEP), Baltimore, Maryland, August 18, 2006.

178. Gilbert, J.E., **Graduate School for the Working Professional**, 28th Annual National BDPA Conference, Los Angeles, California, August 2, 2006.

179. Gilbert, J.E., Esterman, M., & Geiger, C.D. **The Academic Job Search**, 8th Annual National GEM Consortium Symposium Future Faculty and Professionals Symposium, June 29, 2006, Chicago, Illinois.

180. Gilbert, J.E. **Applications Quest: Using Diversity in Admissions ... Computationally Speaking**, University of Georgia, Athens, GA, June 23, 2006.

181. (Commencement Speaker)
Gilbert, J.E., Hamilton High School Annual Commencement Ceremony, Millett Hall, Oxford, Ohio, June 5, 2006.

182. Gilbert, J.E., **Graduate School and the Professoriate**, Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI), Orlando, FL, May 19, 2006.

183. Gilbert, J.E., **Holistic Review in Admissions: Demonstrating a Computerized Tool**, American Association for the Advancement of Science, Washington DC, May 16, 2006.

184. Gilbert, J.E., Jackson, J.F.L., Sims, P. & Beachum, F. **The State of African-American Men in Milwaukee, Wisconsin: Lets Talk!**, Marquette University, Milwaukee, WI, April 21, 2006.

185. Gilbert, J.E., **Applications Quest: Computing Diversity**, University of South Carolina, Columbia, South Carolina, April 14, 2006.

186. Gilbert, J.E., **The Next Black Ph.D. It's More Than Just Research**, Benedict College, Columbia, South Carolina, April 13, 2006.

187. Gilbert, J.E., **The Next Black Ph.D. It's More Than Just Research**, The National Society of Black Engineers 32nd Annual National Convention, Pittsburgh, PA, March 31, 2006.

188. Gilbert, J.E., **Show Me the Money, Careers in STEM**, Rufus King High School, Milwaukee, WI, March 29, 2006.

189. Gilbert, J.E., **Applications Quest: Computing Diversity**, Marquette University, Milwaukee, WI, March 28, 2006.

190. Gilbert, J.E., **Prime III Ushering in a New Age of Electronic Voting**, Marquette University, Milwaukee, WI, March 27, 2006.

191. Gilbert, J.E., **Preparing for Disaster with Technology**, Alabama Association of Assessing Officials Conference, Opelika, AL, March 1, 2006.

192. Gilbert, J. E. **The Holistic Usability Measure (HUM): Evaluating Spoken Language Systems.** AVIOS/SpeechTEK West 2006, San Francisco, California, January 31, 2006.

193. Gilbert, J.E., **Is The Ph.D. Really Worth?: Transitioning To Graduate School**, Albany State University, Albany, GA, January 28, 2006.

194. Gilbert, J.E., **Broaden Participation in STEM or Else**, Morehouse College, Atlanta, GA, January 17, 2006.

195. Gilbert, J.E., **Emergency Preparedness**, Alabama Municipal Revenue Officers Association and Auburn University Center for Governmental Services, Generating Revenue for Cities Conference, Auburn, AL, December 8, 2005.

196. (Keynote)
Fun-Set Social and Charity Club Beautillion Ball 2005, Huntsville, AL, November 19, 2005.

197. Gilbert, J.E., **The Usability of Usability**, World Usability Day, Auburn University, Auburn, AL, November 3, 2005.

198. Gilbert, J.E., **Applications Quest: Computing Diversity to Address Affirmative Action.** University of North Carolina Charlotte, Charlotte, NC, October 14, 2005.

199. Gilbert, J.E., **Collaborations for Success: Industry & The Academy**, I-85 Corridor Alliance, Auburn University, Auburn University Dixon Hotel & Conference Center, Auburn, AL, September 16, 2005.

200. Gilbert, J.E., **Applications Quest: Using Technology to Address Affirmative Action**, 27th Annual National BDPA Conference, Detroit, MI, August 20, 2005.

201. Gilbert, J.E., **Distributed Listening**, Advanced Speech Technologies Symposium: Emerging Technologies, SpeechTEK Conference, August 1, 2005.

202. Gilbert, J.E., **Applications Quest: Computing Diversity to Address Affirmative Action**. Rice University, Houston, TX, July 29, 2005.

203. Gilbert, J.E., Esterman, M., & Gates, A. **The Academic Job Search and the Tenure-Track Process**, 7th Annual National GEM Consortium Symposium Future Faculty and Professionals Symposium, June 30, 2005, Boston, Massachusetts.

204. Gilbert, J.E., Barrera, E., & Marder, S. **Developing Successful Mentoring Relationships**, 7th Annual National GEM Consortium Symposium Future Faculty and Professionals Symposium, June 30, 2005, Boston, Massachusetts.

205. Gilbert, J.E., **Using Culture and Diversity to Recode the Matrix of the New Millennium Workforce**. Rensselaer Polytechnic Institute, Troy, NY, April 21, 2005.

206. Gilbert, J.E., **How to Choose A Doctoral Mentor and Why This Is Critical to Your Success**. Arizona State University, Phoenix, AZ, April 18, 2005.

207. Gilbert, J.E., **Distributed Listening: Improving Speech Recognition Accuracy**, Virginia Polytechnic Institute and State University, Blacksburg, VA, February 3, 2005.

208. Gilbert, J.E., **Application Quest: Computing Diversity**, Virginia Polytechnic Institute and State University, Blacksburg, VA, February 3, 2005.

209. Gilbert, J.E., **Application Quest: Computing Diversity**, Rensselaer Polytechnic Institute, Troy, NY, January 19, 2005.

210. Gilbert, J.E., **Application Quest: Computing Diversity**, Miami University, Oxford, OH October 29, 2004.

211. Gilbert, J.E., **Ask The Experts, Speech in Government/Public Sector**, SpeechTEK Conference, September 13, 2004.

212. Gilbert, J.E., **Applications Quest: Using Clustering Algorithms to Address Affirmative Action**, 10th Annual Conference for African-American Researchers in the Mathematical Sciences (CAARMS10), June 24, 2004, Berkeley, California.

213. Gilbert, J.E., **Spoken Language Systems Research**, University of Maryland College Park, June 17, 2004, College Park, Maryland.

214. Gilbert, J.E., **Building the Future Black Faculty Pipeline**, AfroGEEKS Conference, University of California Santa Barbara, May 7-8, 2004, Santa Barbara, California.

215. Gilbert, J.E., **Applications Quest: Using Technology to Address Affirmative Action**, Florida A&M University, April 20, 2004, Tallahassee, Florida.

216. Gilbert, J.E., **Speech User Interfaces for Information Retrieval**, University of Maryland, Baltimore County, April 6, 2004, Baltimore, Maryland.

217. Gilbert, J.E., **Global Information Technology**, The 4th Annual African American Leadership Summit, Miami University, February 21, 2004
Oxford, Ohio.

218. Gilbert, J.E. **"Using Technology to Diversify University Campuses"**, Auburn University Africana Studies Lecture Series, 208 Foy Union, January 15, 2004, Auburn University, Alabama.

219. Gilbert, J.E., **Voice LETS**, Criminal Justice Technology Symposium V , Marriott Grand Hotel, December 4, 2003, Point Clear, Alabama.

220. Gilbert, J.E., **Voice elVIAS**, Georgia Institute of Technology – Access Grid Presentation, June 17, 2003, Atlanta, Georgia.

221. Gilbert, J.E., **Going to Graduate School for Computer Science**, Tuskegee University, March 6, 2003, Tuskegee, Alabama.

222. Gilbert, J.E., **Technology for African American Survival: Tech Talk**, The 3rd Annual African American Leadership Summit, Miami University
February 22, 2003, Oxford, Ohio.

223. Gilbert, J.E., **Information Verbalization**, University of Alabama-Birmingham, September 19, 2002, Birmingham, Alabama.

224. Gilbert, J.E., **An Introduction to VoiceXML: Adding Voice To Data**, BDPA 2002 24th Annual National Conference, August 9, 2002, Orlando, Florida.

225. Gilbert, J.E., **African American Distributed Multiple Learning Styles System: A Culture-specific Approach to ELearning**, BDPA 2002 24th Annual National Conference, August 9, 2002, Orlando, Florida.

226. Gilbert, J.E., **Animated Pedagogical Agents**, Southern Polytechnical State University, April 10, 2002, Marietta, Georgia.

227. Gilbert, J.E., **Making Learning Personal With Adaptive Instruction**, University of Houston Clear Lake, April 1, 2002, Houston, Texas.

228. Gilbert, J.E., **Finding Information With Your Voice (Anywhere, Anytime, Any Device)**, University of Houston Clear Lake, April 1, 2002
Houston, Texas.

229. Gilbert, J.E., **Making Learning Personal With Adaptive Instruction**, Vanderbilt University, March 24, 2002, Nashville, Tennessee.

230. Gilbert, J.E., **Technology in the Next Millennium**, The 2nd Annual African American Leadership Summit, Miami University, February 16, 2002, Hamilton, Ohio.

231. Gilbert, J.E., **Browsing the Internet with Voice Portals: A New Wave in Technology**, African American Entrepreneurship Summit, Auburn University, February 14, 2002, Auburn, Alabama.

232. Gilbert, J.E., **African American Distributed Multiple Learning Styles System: A Culture-specific Approach to ELearning**, ACM Richard Tapia Celebration of Diversity in Computing, October 20, 2001, Houston, Texas.

233. Gilbert, J.E., **E-Commerce, E-Culture and the Digital Divide … Where Are We Headed?**, Black Client Workshop, Cincinnati, Ohio, Cincinnati Convention Center, June 8, 2000, Cincinnati, Ohio.

234. Gilbert, J.E., **Selecting Instructional Technology**, Xavier University, September 10, 1999, Cincinnati, Ohio.

235. Gilbert, J.E., **Electronic Commerce**, BDPA Cincinnati Chapter, Greater Cincinnati Urban League, August 11, 1999, Cincinnati, Ohio.

236. Gilbert, J.E., **E-Commerce & Web Branding: A Use For Persuasive Technologies**, 5th Annual Conference for African-American Researchers in the Mathematical Sciences - CAARMS5, University of Michigan, June 22 - 25, 1999, Ann Arbor, Michigan.

237. Gilbert, J.E., **Teaching with Interactive Media Now & in the Future**, Interactive Media Studies Conference '98, Miami University, November 20, 1998, Oxford, Ohio.

238. Gilbert, J.E., **JavaScript**, Greater Cincinnati Library Consortium, Cincinnati State Community College, November 10, 1998, Cincinnati, Ohio.

239. Gilbert, J.E., **Java**, Association for Computing Machinery Miami University Chapter, Miami University, October 21, 1998, Oxford, Ohio.

240. Gilbert, J.E., **JavaScript as a Web-Development Tool**, University of Cincinnati, December 4, 1997, Cincinnati, Ohio.

241. Gilbert, J.E., **Web-based Instruction System for Education with Interactive Video**, Learning With Technology Conference, The Ohio State University, June 19, 1997, Columbus, Ohio

Other Presentations

1. Gilbert, J.E., Munakata Marr, J., Thomas, R.C., El Maghraoui, K., & Lasich, D., **Minority Women: Diversity and Mentoring in the Research Environment**, 11th Annual Conference for the Society of Women Engineers (SWE), Chicago, IL, October 15, 2011.

2. Jackson, J.F.L., Charleston, L., & Gilbert, J.E., **Changing Attitudes about Computing Science at Historically Black Colleges and Universities: Benefits of an Intervention Program Designed for Undergraduates**, 4th Annual Conference on Understanding Interventions that Broaden Participation in Research Careers, Nashville, TN, May 28, 2011.

3. Gilbert, J.E., Burnett, M., Ladner, R., Rosson, M.B., & Davis, J., **Applying the NSF Broader Impacts Criteria to HCI Research**, ACM 2011 CHI Conference on Human Factors in Computing Systems, Vancouver, CA, May 10, 2011.

4. Bang, M., Everett, A., Gomez, K. & Gilbert, J.E., **Research and Practice in Education, Media, and People of Color**, American Education Research Association (AERA), New Orleans, LA, April 7, 2011.

5. Blake, M.B., Camp, T., Gilbert, J.E., Perez-Quinones, M., Williams, A., **Choosing the Administrative Path**, Richard Tapia Celebration of Diversity in Computing, San Francisco, CA, April 5, 2011.

6. Jackson, J.F.L., Gilbert, J.E., Charleston, L.J., & Gosha, K., **Differential Gender Effects of a STEM-Based Intervention: An Examination of the African American Researchers in Computing Sciences Program**, American Education Research Association (AERA), Denver, Colorado, May 4, 2010.

7. Jackson, J., Gilbert, J.E., Walker, J.L., & Williams, A.T., **Changing Attitudes about Computing Science: Benefits of an Intervention Program Designed for African American Undergraduates,** American Association of Blacks in Higher Education (AABHE), Atlanta, GA, March 26, 2010.

8. Burge, J., Gilbert, J.E., & Lopez, P. **Finding the Best Career Choice for You**. Academic Careers Workshops for Underrepresented Participants, Coalition to Diversity Computing (CDC), Houston, TX, March 6, 2010.

9. Gilbert, J.E. **Opportunities in Diversity Research.** Auburn University, Auburn, AL, January 28, 2008.

10. Jackson, J., George, P. & Gilbert, J.E. **Interventions that Show Great Promise for Increasing African American Computing Scientists in Higher Education: Evidence from the African American Researchers in Computing Sciences Program**. 2007 AERA, Chicago, IL, April 10, 2007.

11. Hood, S. & Gilbert, J.E., **Alternative Assessment: Using a Culturally Relevant, Computer-Based Interactive Tool (AADMLSS) to Assess Students' Eighth-Grade Algebra Knowledge**. American Education Research Association (AERA), San Francisco, CA, April 8, 2006.

12. Gilbert, J.E., **Thinking Outside the Box: Engaging Students in Creative Thought**, Auburn University Forum on College Teaching and Learning, Auburn, AL, February 4, 2006.

13. Gilbert, J.E. & York, B., **The Computer Science Academic Job Search**, 2005 Richard Tapia Celebration of Diversity in Computing Conference, Albuquerque, New Mexico, October 21, 2005.

14. Gilbert, J.E., **How to Start a Successful Research Program: A Diverse Perspective**, Texas A&M University Academic Career Workshop Focus: Underrepresented Faculty, College Station, Texas, September 9, 2005.

15. Gilbert, J.E., **How to Navigate the Tenure Process: A Diverse Perspective**, Texas A&M University Academic Career Workshop Focus: Underrepresented Faculty, College Station, Texas, September 9, 2005.

16. Gilbert, J.E., Wilson, D. & Gupta, P., **Evaluating Voice User Interfaces Workshop**, SpeechTEK Conference, August 1, 2005.

17. Jackson, J.F.L., Moore, J.L., Cole, D., McNeal, L., Gilbert, J.E., Williams, B.N., and Ford, D.Y., **The Theory of Reasoned Action: Examining Sociological Factors that Influence Education for African American Males**. American Education Research Association Annual Conference. April 12, 2005, Montreal, Canada.

18. Gilbert, J.E., **Voice User Interface Workshop**, SpeechTEK Conference, September 13, 2004.

19. Gilbert, J.E. & Others, **The Survival of African American Men In The Academy: Rules of Engagement**, Vanderbilt University, Black Culture Center, October 11, 2002, Nashville, Tennessee.

20. (Best Poster Presentation)
Rankins, J., Gilbert, J., Brown, P., Pemberton, C., Kacmar C., McDuffie, E., **I-CAN: An Interactive-Computer Assisted Network for Bridging the Chronic Disease Divide between African-Americans and Caucasians**, ACM Richard Tapia Celebration of Diversity in Computing
October 20, 2001, Houston, Texas.

Honors & Awards

2013 **Featured as a Black Tech Game Changer by NPR on December 12, 2013 under #NPRBlacksInTech on Twitter**

2013 **Featured in People of ACM in the ACM Bulletin on October 3, 2013**

2013 **Auburn University Black Graduate and Professional Student Association creates the Juan E. Gilbert, Ph.D. Distinguished Lecture Series**

2013 **Named an Idea Maker: Ten Tech Innovators in 2013 by the Chronicle of Higher Education**

2013 **Richard A. Tapia Achievement Award**

2013 **Clemson University Research Foundation (CURF) Inventor's Club**

2012 **Federal Communications Commission (FCC) Chairman's Awards for Advancement in Accessibility**

2012 **Named one of the 2012 The Root 100 Black Influencers and Achievers**

2012 **2012 National Center for Women in IT (NCWIT) Undergraduate Research Mentoring Award**

2012 **2012 Hamilton, Ohio Booker T. Washington Community Center Academic Excellence Award**

2012 **2012 Miami University Bishop Medal Alumni Award**

2012 **February 2012 Named "Dr. Juan Gilbert Month" by Hamilton, Ohio City Council**

2012 **Recipient of the Hamilton, Ohio City Council Key to the City**

2012 **Council for Advancement and Support of Education (CASE) District III Grand Award Winner for Audiovisual Communication, "Prime III: The world's first all-accessible, electronic voting system"**

2011 **Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM)**

2011 **Minority Media and Telecommunications Council Broadband and Social Justice Blog People's Hero of the Week**

2011 **Clemson University Board of Trustees 2011 Award for Faculty Excellence**

2010 **Fellow, American Association for the Advancement of Science (AAAS)**

2010 **ACM Distinguished Scientist**

2008-2015 **Named 1 of the 50 Most Important African Americans in Technology**
(eAccess Corp of San Francisco, John William Templeton, president/executive editor)

2011 **Fellow, African Scientific Institute (ASI)**

2010 **Academic Keys Who's Who in Sciences Education**

2010 **Clemson University Board of Trustees 2010 Award for Faculty Excellence**

2009 **Clemson University Board of Trustees 2009 Award for Faculty Excellence**

2010 - 2012 **IEEE Computer Society Distinguished Visitors Program (DVP)**

2009 **Speech Technology Magazine Speech Luminary Award Recipient**

2009 **University of Texas at Austin IC^2 Institute Global Fellow**

2008 **IEEE Computer Society Golden Core Award**

2008 **National Associate of the National Research Council of the National Academies**

2009 **Featured as a Master of Innovation by Black Enterprise Magazine March 2009**

2009 **Black Engineer of the Year Modern Day Technology Leadership Award**

2009 **Auburn University Computer Science & Software Engineering Outstanding Engineering Faculty Award**

2009 **Information Today, Inc. Voice User Interface Design Contest Winner**

2008 **Fellow, Auburn University Center for Governmental Services**

2008 **National Society of Black Engineers Golden Torch Award for Pioneer of the Year**

2008 **BDPA Epsilon Award for Outstanding Technical Contribution**

2008 **Auburn University Distinguished Diversity Researcher Award**

2007 **Total System Services Inc. (T-SYS) Distinguished Professorship**

2007 - 2015 **ACM Distinguished Speaker**

2007 **Honored Member of the Premier International Who's Who Registry of Outstanding Professionals 2007-2008 Edition**

2007 **Minority Access, Inc. National Researcher Role Model Award Recipient**

2007 **Led the First Runner-Up and Best in Class Winner of the First Annual AVIOS Speech Application Contest Team**

2007 **Who's Who in Science and Engineering**

2006 **Total System Services Inc. (T-SYS) Distinguished Associate Professorship**

2006 **Elevated to Senior Membership of the IEEE Computer Society**

2006 **Microsoft Research External Research Fund Recipient**

2006 **Ralph H. Metcalfe, Sr. Chair - Marquette University**

2006 **Featured in City Year New York Martin Luther King, Jr. Mural Painting in Honor of Diversity in Technology**

2006 **Metropolitan Who's Who Registry**

2006 **Who's Who in America**

2006 **Invited as a Presenter at the 2006 National Academy Annual Meeting**

2005 **Invited to the National Academy of Engineering Frontiers of Engineering Symposia at the GE Global Research Center.**

2005 **Named an Honorary Citizen of Huntsville, Alabama by The City Council and Mayor of Huntsville**

2005 **100 Black Men of Greater Auburn/Opelika, Inc. Superior Academic Service Award**

2005 **American Society for Engineering Education Minorities in Engineering Award**

2005 **United Who's Who Executive Registry**

2005 **Auburn University Outstanding Minority Service Award**

2005 **Auburn University Alumni Outstanding Minority Achievement Award**

2005 **Auburn University Computer Science & Software Engineering Outstanding Engineering Faculty Award**

2005 **Black Engineer of the Year Special Recognition Award Recipient**

2004 **Invited to the National Academy of Sciences Beckman Frontiers of Science Symposia**

2003 **Auburn University Alumni Engineering Council Junior Faculty Research Award**

2003 **The Coalition to Diversity Computing Conference Scholarship Winner**

2002 **One of 250 researchers listed on LESTER (Learning Science & Technology Repository)**

2002 Featured on
Minority Scientist Network a publication of the
American Association for the Advancement of Science

2002 Featured in
Who's Who in Engineering Education (WWEE), 2002 edition

2002 (Profiled in Black Issues in Higher Education as a top scholar)
(De)Programming Sterotypes. *Black Issues In Higher Education*. 18, 23, (2002).

2002 **Georgia Institute of Technology FOCUS Fellow**

1999 **Miami University Leadership Commitment Selection**

1999 **ACM/IBM Quest for Java 99 Contest 5th Prize Winner**

1998 **International WHO'S WHO of Information Technology**

1997 **Albert C. Yates Fellowship, University of Cincinnati**

1995 **Dean's Fellowship, The Ohio State University**

1994 **Great Performance Award, NCR Corporation**

1990 **NCR Innovative Thinker's Contest Winner, Miami University**

1988 **NCR Minority Scholarship Award, Miami University**

1988 **Black Student Action Association Service Award, Miami University**

Experience

2014 – Present **University of Florida (Gainesville, FL), Professor & Associate Chair of Research, Computer & Information Science & Engineering Department**

2009 – 2014 **Clemson University (Clemson, SC), Professor & Chair Division of Human-Centered Computing**

2009 **Auburn University (Auburn, AL), Professor**

2005 – 2009 **Auburn University (Auburn, AL), Associate Professor**

2007 – Present **President and Chief Technology Officer, Applications Quest™, LLC.**
-http://www.ApplicationsQuest.com/

2009 – 2012 **Technical Advisor to Everyone Counts Inc.**
-http://www.EveryoneCounts.com/

2006 – Present **Consultant, American Association for the Advancement of Science (AAAS) Center for Advancing Science & Engineering Capacity**
http://php.aaas.org/programs/centers/capacity/01_About/01_ConsultantRoster.php

2000 – 2005 **Auburn University (Auburn, AL), Assistant Professor**

2000 – Present **Brothers of the Academy Institute**
*Webmaster
-http://www.BrothersOfTheAcademy.org/

1998 - 2000 **Miami University (OH), Visiting Instructor, Systems Analysis Department**

1997 **The Ohio State University (Teaching Assistantship)**
*C++ Programming for Engineers(Spring 1997)

1996 – 1997 **Computer Science Adjunct Faculty, Columbus State Community College, Columbus, Ohio**
*Database Programming with Oracle (Summer 1996)
*PC Operating Systems DOS/Windows (Autumn 1996)
*Program Design and Development(Winter-Spring 1997)

1988 – 1995 **NCR Corporation**, Dayton, Ohio
* Application Development and Consulting
* DBA for World Wide Orders System on Teradata Database
* Application Development in Visual C++
* Managed & documented Filepro database
* Installed PC's, printers, & software
* Investigated new system software

1988 – 1991 **Applied Science Department,** Miami University, Oxford OH
*Monitor PC-Network maintenance
*Monitor computer Lab Operations
*Tutor Systems Analysis majors
* Manage Network for engineering students

Memberships

ACM (Association for Computing Machinery) (http://www.acm.org/)

American Association for the Advancement of Science (AAAS)

ACM U.S. Public Policy Committee (USACM) (http://usacm.acm.org/)

Human Factors and Ergonomics Society (HFES)

User Experience Professional's Association (UXPA)

IEEE Computer Society

Human Factors Institute at Clemson University
(http://www.clemson.edu/hfi/)

Institute for Engaged Aging at Clemson University
(http://www.hehd.clemson.edu/Aging/)

American Society for Engineering Education (ASEE)

South Carolina Council for African-American Studies (SCCAAS)

International Artificial Intelligence in Education Society (AIED)

AACE (Association for the Advancement of Computing in Education)

American Education Research Association (AERA)

AVIOS (Applied Voice Input/Output Society)

ACM SIGCAS
Special Interest Group on Computers and Society

ACM SIGCHI
Special Interest Group on Computer-Human Interaction

National Society of Black Engineers (NSBE)

Adaptive Hypertext & Hypermedia

Institute for African American eCulture (iAAEC)

Upsilon Pi Epsilon

BDPA (Black Data Processing Association)

American Association of Blacks in Higher Education (AABHE)

President of Brothers of the Academy Institute 2005 – Present

Kappa Alpha Psi Fraternity Inc.

Service

2014	**Served as a reviewer for Applied Ergonomics Journal**
2014	**Served as a reviewer for Morgan Kaufman Publishers for HCI book**
2014-Present	**USACM E-Voting Subcommittee Chair**
2014	**Served as a NSF Panelist**
2014	**Served as a reviewer for Cyberpsychology, Behavior, and Social Networking Journal**
2014-Present	**American Association for the Advancement of Science (AAAS) Annual Scientific Program Committee Member**
2013-Present	**Serving on the Boys & Girls Clubs of American STEAM Advisory Council**
2014	**Served as a reviewer for the International Journal of Artificial Intelligence in Education (IJAIED)**
2013	**Served as a reviewer for the Journal of STEM Education**
2013	**Served as a reviewer for the NCWIT Undergraduate Research Mentoring Award**
2013	**Served as a reviewer for Communications of the ACM**
2012	**Served as a reviewer for the Center for Culturally Responsive Evaluation and Assessment (CREA) Inaugural Conference**
2012	**ACM 2013 CHI Conference Paper Reviewer**
2012	**American Association for the Advancement of Science (AAAS) Mentor Award Committee Member**
2012 -	**Clemson University School of Computing Graduate Student Association, Co-Advisor**
2012 - 2014	**Anderson District 5 Career Campus, Career and Technology Advisory Council Member**
2012 -	**Associate Partner on Advising Committee for AdeleRobots.com**

2011 – 2012	**Advisory Board Member for AAAS-NSF 2012 Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM)**
2010 – 2014	**NSF Computer & Information Science & Engineering (CISE) Advisory Committee Member**
2010 – 2013	**Member of the American Association for the Advancement of Science (AAAS) Board appointed Committee on Opportunities in Science (COOS)**
2010 – 2013	**American Association for the Advancement of Science (AAAS) Early Career Award for Public Engagement Selection Committee Member**
2011 – 2014	**Serving on Clemson University President's Commission on the Status of Black Faculty and Staff**
2012 -	**BMW Steering Circle Committee, Member**
2012	**Guest Blogger for Communications of the ACM**
2012 - 2013	**Chair, Coalition to Diversity Computing (CDC), joint organization of the ACM, CRA and IEEE-CS**
2011 -	**Clemson University CyberInstitute Steering Committee Chair**
2011	**Editorial Board Member for Special issue on Social Media and Mobile Marketing in Journal of Research in Interactive Marketing**
2011	**Associate Editor for the International Journal of Health, Wellness and Society**
2011	**Served as a reviewer for the Journal of STEM Education: Innovations and Research**
2011	**Ford Foundation Fellowship Panelist**
2011	**Advisory Board for DiverseBusinessNews.com**
2011	**Technical Program Committee Member for Learning Technologies for the Developing World (LT4D) Workshop for the The 11th IEEE International Conference on Advanced Learning Technologies (ICALT 2011)**

2011	**Served as a reviewer for the Personal and Ubiquitous Computing Journal Special Theme Issue on Automotive User Interfaces and Interactive Applications**
2011	**Served as a reviewer for 2012 IEEE International Electric Vehicle Conference**
2010	**Served as a reviewer for the Quality Education Forum Journal**
2011	**Served as a reviewer for Usability Professionals Association (UPA) 2011 Conference**
2010	**Computer Science Education Week Steering Committee Member**
2010	**American Association for the Advancement of Science (AAAS) Mentor Award Selection Committee Member**
2010	**Served on 3 NSF Panels**
2009 -	**Clemson University School of Computing Graduate Recruiting Committee Chair**
2010 -	**Clemson University School of Computing Graduate Affairs Committee**
2010	**Clemson University Executive Vice-President for Research Search Committee Member**
2010	**Clemson University Computing and Information Technology EPSCoR Desktop to Teragrid Search Committee member.**
2010	**Clemson University Search Committee for Director of Access and Equity**
2007 – 2009	**IEEE Computer Society Board of Governors**
2009 - Present	**ACM U.S. Public Policy Committee (USACM) Council Member**
2006 - 2008	**IEEE Computer** **Broadening Participation in Computing Column Editor**
2009 -	**Journal of African American Males in Education** **Advisory Board Member**

2010	**Served as a review for ACM Transaction on Computing in Education**
2010	**Served as a review for IEEE Signal Processing Letters**
2009	**Served on 2 NSF Panels**
2008	**National Academy of Science France – U.S. Kavli Frontiers of Science Symposium Organizing Committee Member**
2008	**Served on the U.S. Election Assistance Commission Interdisciplinary Roundtable on Voluntary Voting Systems Guidelines (VVSG)**
2009	**IEEE International Conference on Multimedia & Expo (ICME 2009) Technical Program Committee**
2008	**College Board and NSF Advanced Placement Computer Science Commission**
2009	**Speech Technology Conference Committee**
2008	**Auburn University Center for Governmental Services Associate Director Search Committee Chair**
2008 – 2012	**CRA-W/CDC Discipline Specific Mentoring Workshop Co-Chair**
2006 – 2009	**Editorial Advisory Board – Speech Technology Magazine**
2008	**Auburn University Outreach Symposium Committee**
2008 – 2009	**Auburn University Black Graduate and Professional Student Association (BGPSA) Faculty Advisor**
2007	**Served on the U.S. Election Assistance Commission Roundtable on Voluntary Voting Systems Guidelines (VVSG)**
2007 – 2009	**Advisory Board Member for The Information Technology and Innovation Foundation's Electronic Voting Initiative**
2007 – Present	**Advisory Board Member for Juxtopia Inc.**
2006 – Present	**Advisory Board Member for the Center for African-American Research and Policy**

2007	**Auburn University Diversity Research Institute Planning Committee Member**
2007 – 2010	**American Education Research Association (AERA) Communications and Outreach Committee Member**
2007	**SpeechTEK 2007 Voice User Interface Workshop Co-Chair VUI Designer as a Profession: Job Qualifications & Career Tracks**
2007	**Reviewer for Journal of STEM Education**
2007	**Reviewer for INTERACT 2007**
2007	**Workshop Committee Co-Chair for the 1st NSF International Workshop on Virtual Instructors, VI-2007, Georgetown University, May 21-22, 2007.**
2007	**Program Committee Member for the 2007 "Fixing the Academy" Tapping Black Excellence on White Campuses Conference, Johns Hopkins University, April 13-14, 2007.**
2006 – 2008	**Advisory Board for the QEM INFLOW Project, a project of the Quality Education for Minorities (QEM) Network supported by the National Science Foundation's Engineering Directorate.**
2006 – 2007	**ACM Southeast Conference 2007 Program Committee**
2006 – 2007	**IEEE Computer Society Technical Committee on Learning Technology - Virtual Instructors Pilot Research Group (VIPRG) Conversational Interface Sub-Committee Chair**
2007 – 2009	**Served on the Auburn University Athletics Department Student Athlete Support Services (SASS) Advisory Board**
2007	**Auburn University Outreach Symposium Committee Member**
2007 - 2009	**Auburn University College of Engineering Graduate Student Recruitment Committee**
2007	**ACM Richard Tapia Celebration of Diversity in Computing Birds of a Feather Co-Chair**
2007	**Reviewer for ACM CHI 2007**
2007	**Fixing the Academy: Tapping Black Excellence on White Campuses Papers Co Chair**

2006	**Reviewer for the International Journal of Interactive Technology and Smart Education**
2006	**Reviewer for IEEE Computer**
2006	**Reviewer for Journal of Women and Minorities in Science and Engineering**
2006 – 2007	**Served on the 2007 Program Committee for the Association of Computer and Information Science/Engineering Departments at Minority Institutions (ADMI)**
2006	**Program Committee Member for InterSpeech Satellite Workshop titled "Dialogue on dialogues: Multidisciplinary Evaluation of Advanced Speech-based Interactive Systems "**
2006	**Chaired the organization committee for the National Academy of Sciences Kavli Frontiers of Science Symposia**
2005 - 2007	**The American Society for Engineering Education (ASEE) Minorities in Engineering Award Committee Member**
2005 – 2009	**Auburn University Title VI Committee Member.**
2006	**Reviewer for the International Journal of Human-Computer Interaction**
2005 - 2010	**Black Data Processing Association (BDPA) Information Technology Institute Academic Chair**
2005	**International Conference on Multimodal User Interfaces (ICMI) Universal Access Program Area Chair**
2005	**ACM Richard Tapia Conference Celebration of Diversity in Computing Served on the Scholarship Committee**
2005	**Served on the organization committee for the National Academy of Sciences Beckman Frontiers of Science Symposia**
October 20-21, 2004	**Served on the Computing Research Association's (CRA) Workshop on Broadening Participation in Computing.**

August 8, 2004	**Served as the High School and College IT Showcase Lead Judge at the 26th Annual National BDPA Conference.**
2004	**On the Editorial Review Board for International Journal on ELearning and the Journal of Interactive Learning Research.**
May 2004 - August 2004	**Abstract Selection Committee for the 2004 SACNAS Conference (Society for Advancement of Chicanos/Latinos and Native Americans in Science), Austin, Texas from October 21-24, 2004.**
February 2004 - Present	**VoiceXML University: VoiceXML Education Exchange Review Board Member (http://www.voicexml.org/resources/vxml_university/index.html)**
April 2004	**International Conference on Computing, Communications and Control Technologies: CCCT'04 Served on the External Paper Review Committee**
March 25, 2004	**The 4th International Conference on Advanced Learning Technologies (ICALT 2004) Aug. 30 - Sep. 1, 2004 Served on the External Paper Review Committee http://lttf.ieee.org/icalt2004/committees.html**
2003	**Served on 3 NSF Proposal Review Panels**
October 15-18, 2003	**ACM Richard Tapia Conference Celebration of Diversity in Computing Served on the Scholarship Committee**
October 1, 2003	**SpeechTEK 2003 Served as Moderator for the Building Brands with Speech Solutions Panel**
Fall 2003	**Served on the Africana Studies Major/Department Proposal Committee for President Walker, lead by Dr. Keenan Grenell, Interim Assistant Provost for Diversity and Multicultural Affairs**
August 22, 2003	**Served as a Review for Systemics, Cybernetics and Informatics 2003**
August 19,	**Participated in the design of the**

2003	**VoiceXML Application Developer** **Exam (developed by The VoiceXML Forum)**
August 13-18, 2003	**BDPA 2003 25th National Annual Conference** **Workshops Deliver Manager/Chair**
August 6, 2003	**Serving as a reviewer for the Journal of Computing in Higher Education**
Spring 2003	**Advised 2 undergraduate seniors at Tuskegee University on their senior project.**
2002 – Present	**Miami University Department of Computer Science & Systems Analysis Advisory Committee Member**
2003	**National Black Data Processing Association Conference Workshop Chair**
2002	**NSF Proposal Review Panel**
October 2002	**McGraw Hill Book Review (For the 2nd time)** **C++ Programming: Lessons and Applications** **by T. B. D'Orazio**
October 2002	**McGraw Hill Book Review** **C++ Program Design** **by Cohoon and Davidson**
June 6, 2002	**Black Data Processing Association & The Black World Today** **Radio Talk Show Guest**
April 2002	**ACM Crossroads Magazine** **HCI Issue Reviewer**
March 2002	**McGraw Hill Book Review** **Applied C: An Introduction and More** **by Alice Fischer, David Eggert & Stephen Ross**
January 2002	**McGraw Hill Book Review** **C++ Programming: Lessons and Applications** **by T. B. D'Orazio**
Summer 2001	Project NIA: **Taught summer course on computers to 7th and 8th graders from Loachapoka Junior High School.**

Doctoral Graduates (Major Professor)

	Graduate Student	Graduation Date	Position
1.	*Hanan Alnizami	December 17, 2014	Intel
2.	+Tamirat Abegaz	November 17, 2014	
3.	*+Aqueasha Martin-Hammond	July 18, 2014	Postdoc, UMBC
4.	+Joshua Ekandem	July 18, 2014	Intel Research Labs
5.	+Kinnis Gosha	April 3, 2013	Assistant Professor, Morehouse College
6.	~+Ignacio Javier Álvarez Martínez	December 18, 2012	Intel Research Labs
7.	*+Christin D. Shelton	May 14, 2012	Consultant
8.	*+Shanee Dawkins	August 25, 2011	Research Scientist at NIST
9.	*+Wanda Eugene	March 23, 2011	Postdoc at University of Florida
10.	+Caio V. Soares	July 28, 2010	Senior Data Scientist, Zynga
11.	*+Yolanda McMillian	June 15, 2010	Assistant Professor, Elizabeth City State University
12.	*+Philicity K. Williams	May 21, 2010	U.S. Department of Defense
13.	Kenneth Rouse	July 21, 2009	Associate Professor, Computer Science at LeTourneau University
14.	+E. Vincent Cross, II	April 24, 2009	Lockhead Martin Advanced Technology Labs
15.	David Thornton	July 14, 2008	Assistant Professor, Jacksonville State University
16.	*+Dale-Marie Wilson	July 12, 2006	Assistant Professor, UNC-Charlotte
17.	Yapin Zhong	September 16, 2003	

Masters Graduates (Major Professor)

	Graduate Student	Graduation Date	Degree
1.	*+Jessica N. Jones	December 2014	M.S.
2.	*+Naja Mack	December 2013	M.S.
3.	+Phillip Hall	December 2013	M.S.
4.	+Jerone Dunbar	December 2013	M.S.
5.	*Alison Nolan	December 2013	M.S.
6.	*+France Jackson	May 2013	M.S.
7.	John Mark Smotherman	December 2012	M.S.
8.	*Lingyan Wang	October 21, 2009	M.S.

9.	*Vasavi Chilamantula	October 21, 2009	M.S.W.E.
10.	*Anjeli Singh	October 20, 2009	M.S.
11.	*+Shanee Dawkins	October 20, 2009	M.S.
12.	*Wanda Moses	August 10, 2009	M.S.
13.	*Yueqin Lin	August 6, 2009	M.S.W.E.
14.	+Jerome McClendon	July 20, 2009	M.S.
15.	Josh Stephens	June 12, 2009	M.S.W.E.
16.	+Gregory Rogers	May 4, 2009	M.S.
17.	+Caio Soares	April 11, 2009	M.S.
18.	Jamey White	July 16, 2008	M.S.W.E.
19.	*Philicity K. Williams	April 9, 2008	M.S.
20.	*Jennifer Garmon	May 7, 2007	M.S.W.E.
21.	*+Andrea Williams	April 17, 2007	M.S.
22.	*Ashley Wachs	April 6, 2007	M.S.
23.	*Kathryn Nobles	April 5, 2007	M.S.
24.	Derek Anderson	April 5, 2007	M.S.W.E.
25.	+Kinnis Gosha	April 2, 2007	M.S.
26.	*+Christin Hamilton	December 6, 2006	M.S.W.E.
27.	Spencer Lee	August 4, 2006	M.S.
28.	*+Alexandria Williams	June 30, 2006	M.S.
29.	Chao Wang	June 9, 2006	M.S.
30.	Sanjith David	May 12, 2006	M.S.W.E.
31.	Billy T. Baker	July 13, 2005	M.S.W.E.
32.	+Andre Murphy	April 8, 2005	M.S.W.E.
33.	*+Michele Williams	April 8, 2005	M.S.W.E.
34.	+E. Vincent Cross, II	January 14, 2005	M.S.W.E.
35.	+Nicholas J. Parks	November 29, 2004	M.S.W.E.
36.	*Tongmin Shen	October 5, 2004	M.S.
37.	*Priyanka Gupta	July 7, 2004	M.S.
38.	*+Bettina Cornelius	July 2, 2004	M.S.
39.	*Kristie Goss	May 5, 2004	M.S.
40.	*Sangeeta Garhyan	May 4, 2004	M.S.
41.	*Laura McDonald	April 12, 2004	M.S.W.E.

42.	*Michelle Howell	November 6, 2003	M.S.W.E.
43.	+Adeoye O Adeyemo	July 17, 2003	M.S.W.E.
44.	*Yifang Gu	July 16, 2003	M.S.W.E.
45.	Yu Zhang	July 16, 2003	M.S.W.E.
46.	*+Tanecia K. Simmons	June 16, 2003	M.S.W.E.
47.	*Weihong Hu	May 21, 2003	M.S.
48.	*+Dale-Marie Wilson	December 5, 2002	M.S.
49.	*Xiaoyan Qi	October 25, 2002	M.S.W.E.
50.	*Yuehua Lin	July 26, 2002	M.S.
51.	Dackral Phillips	July 9, 2002	M.S.
52.	*Nupura Kolwalkar	June 26, 2002	M.S.W.E
53.	Haiyu Qi	May 30, 2002	M.S.W.E

Postdoctoral Researchers Advised

	Postdoc Researcher and Institution	Dates
1.	+Edward Dillon (U. of Alabama)	2013 -
2.	*+Wanda Eugene (Auburn University)	2013 -
3.	+Jamie Macbeth (UCLA)	2013 - 2014
4.	*+Deidra Morrison (Northwestern University)	2009 – 2011
5.	+Shaun Gittens (U. of Maryland College-Park)	2007 – 2008

'*' – female; '+' – minority; '~' – co-advisor

Kyla A. McMullen
University of Florida; E530 CSE Bldg
PO Box 116120; Gainesville, FL 32611-6120

202-670-2116
http://www.kylamcmullen.com
kyla@cise.ufl.edu

Education

- **The University of Michigan** — Ann Arbor, MI
  Ph.D Computer Science and Engineering — *May 2007 - May 2012*
  - Dissertation: Interface Design Implications for Recalling the Spatial Configuration of Virtual Auditory Environments
    Advisor: Gregory H. Wakefield, Ph.D.
- **The University of Michigan** — Ann Arbor, MI
  M.S. Computer Science and Engineering — *2005 - 2007*
  - Concentration: Interactive Systems
- **The University of Maryland, Baltimore County** — Catonsville, MD
  B.S. Computer Science — *2001 - 2005*
  - Graduated Magna Cum Laude
  - Major GPA - 4.0

Research Interests

- Utilizing spatial audio rendering techniques to sonify positional data
- Discovering critical interface design techniques for developing virtual auditory environments
- Using virtual spatial audio to augment assistive technology for persons with visual impairments
- Enhancing immersion and realness in virtual worlds using spatial audio

Research Experience

- **Naval Submarine Medical Research Laboratory (NSMRL)**
  Psychoacoustics Summer Intern — *July 2009 - August 2009*
  - Created experiments to assess dual task performance for submarine operators
  - Implemented analysis tools to assess dual task performance
  - Explored the use of a spatial audio interface for sonar navigation
- **University of Michigan, Computer Science and Electrical Engineering**
  Ph.D Student — *June 2008 - present*
  - Dissertation Topic: Interface Design Implications for Recalling the Spatial Configuration of Virtual Auditory Environments
- **University of Michigan, Computer Science and Electrical Engineering**
  Ph.D Student — *May 2006 - June 2008*
  - Preliminary Research: Relationship Learning Software: Design and Assessment

Publications

- Ongsarte, A., Jiang, Y., **McMullen, K**. (2015 - in press) Assessment of Electronic Write-In Voting Interfaces for Persons with Visual Impairments. The Proceedings of HCI International 2014, 17th International Conference on Human-Computer Interaction, 2-7 August 2014, Los Angeles, California, USA.
- Wan, Y., Zare, A., **McMullen, K**. (2014). Evaluating the Consistency of Subjectively Selected Head-Related Transfer Functions (HRTFs) Over Time. AES Conference on Spatial Audio, 27 August 2014, Helsinki, Finland.
- **McMullen, K**. (2014). The Potential for Spatial Audio to Convey Information in Virtual Environments. In IEEE VR Workshop on Sonic Interactions for Virtual Environments, 29 March 2014, Minneapolis, MN.
- Zare, A., **McMullen, K**., Gardner-McCune, C. (2014). Design of an Accessible and Portable System for Soccer Players with Visual Impairments. In CHI'13 Extended Abstracts on Human Factors in Computing Systems, 26 April - 1 May 2014, Toronto, Ontario. ACM.
- **McMullen, K**, Wakefield, G. (2014). 3D Sound Memory in Virtual Environments. IEEE Symposium on 3D User Interfaces (3DUI), 29-30 March 2014, Minneapolis, Minnesota.
- **McMullen, K**, Wakefield, G. (2013). The Effects of Attenuation Modeling on Spatial Sound Search. The Proceedings of the International Conference on Auditory Displays (ICAD), 6-10 July 2013, Lodz University of Technology, Poland.
- **McMullen, K**., Wakefield, G. (2013). Effects of Plane Mapping on Sound Localization in a Virtual Auditory Environment. The Proceedings of HCI International 2013, 15th International Conference on Human-Computer Interaction, 21-26 July 2013, Las Vegas, Nevada, USA.
- Daily, S., Gilbert, J., Eugene. W., Gardner-McCune, C., **McMullen, K**., Hall, P., Remy, S., Woodard, D., Roy, T.(2013), Alternate Pathways to Careers in Computing: Recruiting and Retaining Women Students. American Society of Engineering Education: Computing & Information Technology Division.
- **McMullen, K**., Roginska, A., Wakefield, G. (2012). Subjective Selection of Head-Related Transfer Functions (HRTFs) based on Spectral Coloration and Interaural Time Differences (ITD) Cues. Audio Engineering Society (AES), 26-29 October 2012, San Francisco, USA.
- Roginska, A., Wakefield, G., **McMullen, K**. (2011). Searching for Sources from a Fixed Point in a Virtual Auditory Environment. The Proceedings of the International Conference on Auditory Displays (ICAD), 20-24 June 2011, Budapest, Hungary.
- Roginska, A., Wakefield, G., Santoro, T., **McMullen, K**.(2010). Effects of Interface Type on Navigation in a Virtual Spatial Auditory Environment. The Proceedings of the International Conference on Auditory Displays (ICAD), 9-15 June 2010, Washington, DC.
- **McMullen, K**., Wakefield, G. (2009). Relationship Learning Software: Design and Assessment. The Proceedings of HCI International 2009, 13th International Conference on Human-Computer Interaction, 19-24 July 2009, San Diego, CA, USA. Heidelberg, Germany: Springer.
- Eugene, W., Hatley, L., **McMullen, K**., Brown, Q., Rankin, Y., & Lewis, S. (2009). This Is Who I Am and This Is What I Do: Demystifying the Process of Designing Culturally Authentic

Technology. The Proceedings of HCI International 2009, 13th International Conference on Human-Computer Interaction, 19-24 July 2009, San Diego, CA, USA. Heidelberg, Germany: Springer.

Funding

- **McMullen, K.**, Corporate Gift, Bit Cauldron, 2/5/15, $16,433.92.
- Gilbert, J.E., **McMullen, K.**, Remy, S.L., & Eugene, W., 4D Interactions for Cable Television, CableLabs, 7/1/2013 - 6/30/2014, $80,000.
- Gilbert, J.E., **McMullen, K.** , & Martin, J., User Experiences with Streaming Video, 3D Audio and Holistic Usability, Intel IXR, 6/1/2013 - 5/31/2014, $50,000.

Invited Talks

- **Congressional Black Caucus Annual Legislation Conference** — September 26, 2014
  Washington Convention Center — *Washington, DC*
  - Title: STEM Education and Employment for African Americans
- **NextProf Conference** — September 25, 2013
  The University of Michigan — *Ann Arbor, MI*
  - Title: Life in Academia Panel
- **Youth Technology Camp** — August 14, 2013
  Black Data Processing Associates National Conference — *Washington, DC*
  - Title: A Matter of National Security
- **High School Computer Competition** — June 8, 2013
  Black Data Processing Associates — *Columbia, SC*
  - Title: Winning the Future: Education and Innovation
- **Willie Hobbs Moore Luncheon** — April 4, 2013
  The University of Michigan — *Ann Arbor, MI*
  - Title: Nobody told me the road would be easy
- **AGEP 2013 Research Symposium** — April 6, 2013
  The University of Michigan — *Ann Arbor, MI*
  - Title: Winning the Future: Education, Innovation, and Transparency
- **Undergraduate Research Conference** — February 22, 2013
  Wayne State University — *Detroit, MI*
  - Title: Research that Drives Innovation

Teaching and Mentorship Activities

- **Computer and Information Science and Engineering, University of Florida**
  Assistant Professor — *August 2014 to present*

- Designed a course to be taught on virtual spatial audio
- Developed a research program
- Recruited and encouraged under-represented students to pursue PhDs in Computer Science

- **School of Computing, Clemson University**
  Assistant Professor *January 1, 2013 to July 31, 2014*
  - Designed and instructed a course on virtual spatial audio
  - Taught introduction to programming to students with computer science and nontechnical majors
  - Developed a research program
  - Recruited and encouraged under-represented students to pursue PhDs in Computer Science

- **The College of Engineering, Wayne State University**
  Lecturer *Fall 2011, Winter 2012*
  - Designed and instructed a required Computer Literacy course (1100 students)
  - Designed and instructed a Human-Computer Interaction course
  - Managed Graduate Teaching Assistants to aid in instruction

- **The College of Engineering, University of Michigan**
  Graduate Student Instructor *Winter, 2011, Fall 2010, Fall 2009*
  - Created lab lesson plans and PowerPoint slides, reinforcing programming concepts
  - Taught three lab sessions each week (6 hours total)
  - Met with students in office hours (6) each week to help with programming assignments and concepts

- **Rackham Graduate School, University of Michigan**
  Summer Institute Graduate Student Mentor *May 2010 - August 2010*
  - Mentored 1st year PhD students in Engineering and Physical Science
  - Created and ran seminars and workshops geared towards graduate student success
  - Met with students to address individual needs concerning their transition into graduate school

- **Rackham Graduate School, University of Michigan**
  AGEP Peer Mentor *2008 - 2009*
  - Assisted first year Ph.D students with their transition into graduate school
  - Helped first year Ph.D students identify skills and resources critical to their success in graduate school
  - Met monthly with students to address their issues or concerns regarding graduate school

- **Women in Science and Engineering, University of Michigan**
  WISE *2007 - 2008*
  - Assisted first and second year women Ph.D students in the Computer Science Division
  - Met monthly with students to address their issues or concerns regarding concerns specific to the department

Industry Experience

- **IBM Inc. Research Triangle Park, NC**
  WPLC Performance Analyist *June - August 2005*
  - Ran analyses using LoadRunner software to determine the throughput, resource usage, bottlenecks, and transaction response time of the Portal Document Manager.

- Debugged scripts used to simulate virtual users.
- Performed Data Table Verification.
- Created Graphs and Data Tables included in IBM Confidential Reports.
- Documented various procedures and practices (setting up servers, running scenarios, etc) performed by my team for future reference.
- Made a flow chart that modeling Virtual User Scenarios

- **eOriginal Inc.**
  Plug-Ins Team - Software Engineering Intern *February 2005 - May 2005*
  - Designed Message Center Interface that allows Administrators to confirm or reject a certified print request from a client
  - Conducted an analysis of code from previous software release and made necessary changes to be put in the new release to conform with Software Engineering principles
  - Identified and corrected bugs in Command Center Software

- **IBM Research Thomas J Watson Center**
  Mathematical Analysis Department Intern *May - August 2004*
  - Developed a Java tool that parses the daily web logs to derive "Deep Thunder" website statistics. This tool traces each visitor's IP address and location and stores it along with other data used in statistical analysis.
  - This data was then converted into several Gnuplot graphs according to the geographic region of interest. It is currently being used to identify potential clients.

- **General Electric Financial Assurance**
  Information Technology Intern *June - August 2002*
  - Received Six Sigma Quality Training
  - Designed and Produced a webpage to retrieve information in a Microsoft Access Database as well as an SQL database which is now being used to shorten the amount of time developers spend asking Change Control Workers what jobs, procedures, and programs to include in their Pan APT Move request when changes are made in the system.
  - Designed the Monthly Statistics Webpage for the Lynchburg IT Department, which included graphs as well as information concerning the Six Sigma Quality that was achieved for the month.

Honors & Awards

Diverse Issues In Higher Education - 2015 Emerging Scholar 2015
Google Inc. - Travel Grant to Attend Grace Hopper 2014 2014
National Black Data Processing Associates - Professional Achievement Award 2013
The MUSES and GradSWE - Trailblazer Award for Achievement 2013
Center for Engineering Diversity and Outreach - PhD Conferred Achievement Award 2013
College of Engineering - Outstanding Graduate Student Instructor Award 2011
Edward A. Bouchet Graduate Honor Society 2011
College of Engineering Leadership Award Nominee 2009
Scholar Power PhD Student Achievement Award 2009
Martin Luther King Jr. Spirit Award Nominee 2009
The Office of Naval Research Future Engineering Faculty Fellow 2006
Rackham Merit Fellowship 2005
Magna Cum Laude 2005
Computer Science and Electrical Engineering Distinguished Student Award 2005
GEM Fellowship 2004
Phi Kappa Phi Honor Society 2004
Ronald E McNair Scholar 2003
Golden Key International Honor Society 2003
NSBE Torchbearer 2002
General Electric Lloyd Trotter African American Forum Scholar 2001
Robert and Jane Meyerhoff Scholar 2001

University / Community Service

Alliance for Graduate Education and the Professoriate - Peer Mentor 2008-2009
Society of Minority Engineers and Scientists - Graduate Component - President 2007-2008
Women in Science and Engineering - Peer Mentor 2007-2008
IBM STEM Entry Point Camp - Volunteer Teacher 2007
Detroit Area Pre-College Engineering Program - Teaching Aide 2007
Movement of Underrepresented Sisters in Engineering and Science - Vice President . . 2006-2007
Society of Minority Engineers and Scientists - Graduate Component - Vice President . 2006-2007
The Office of Naval Research Future Engineering Faculty Fellow 2006

Lisa Anthony Curriculum Vitae

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CURRENT POSITION

Assistant Professor 2013-present
Department of Computer & Information Science & Engineering, University of Florida, Gainesville FL

RESEARCH INTERESTS

Human-computer interaction, human-centered computing; child-computer interaction; pen, touch, and gesture interaction and recognition; natural user interaction; multimodal interaction; mobile computing; surface computing; educational games; context-sensitive computing.

TEACHING INTERESTS

Human-computer interaction history, methods and research; linking human-computer interaction and computer science; interface and interaction design, tools and methods; mobile development; interaction on small screens; pen, touch, and gesture interaction and recognition.

EDUCATION

Ph.D., Human-Computer Interaction, Carnegie Mellon University 2002-2008
Thesis Title: Developing Handwriting-based Intelligent Tutors to Enhance Mathematics Learning
Committee: Kenneth R. Koedinger (co-chair), Jie Yang (co-chair), Jennifer A. Mankoff, Tom M. Mitchell, Mark D. Gross

M.S., Computer Science, Drexel University 1997-2002
Thesis Title: Evolving Board Evaluation Functions for a Complex Strategy Game
Advisor: William C. Regli

B.S., Computer Science, Drexel University 1997-2002
Official concentrations in Human-Computer Interaction, Software Engineering, and Artificial Intelligence

ACADEMIC POSITIONS

Research Assistant Professor, Information Systems Department, University of Maryland Baltimore County, Baltimore MD 2013

Post-Doctoral Research Associate, Information Systems Department, University of Maryland Baltimore County, Baltimore MD 2011-2012

PUBLICATIONS

-- Journal Articles

[J.5] **Anthony, L.,** Brown, Q., Nias, J. and Tate, B. To appear. Children (and Adults) Benefit From Visual Feedback during Gesture Interaction on Mobile Touchscreen Devices. *International Journal of Child-Computer Interaction*, to appear.

[J.4] **Anthony, L.**, Brown, Q., Tate, B., Nias, J., Brewer, R., and Irwin, G. 2014. Designing Smarter

Touch-Based Interfaces for Educational Contexts. *Journal of Personal and Ubiquitous Computing: Special Issue on Educational Interfaces, Software, and Technology*, Volume 18, Issue 6, p.1471-1483**.**

[J.3] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2012. A Paradigm for a Handwriting-Based Intelligent Tutor. *International Journal of Human-Computer Studies*, Volume 70, Issue 11, November 2012, p.866-887*.*

[J.2] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2008. Toward Next-Generation Intelligent Tutors: Adding Natural Handwriting Input. *IEEE Multimedia* Volume 15, Issue 3, July 2008, p.64-68.

[J.1] **Anthony, L.**, Regli, W.C., John, J.E., and Lombeyda, S.V. 2001. An Approach to Capturing Structure, Behavior and Function of Artifacts in CAD. *Transactions of the ASME, the Journal of Computing and Information Science in Engineering*, Volume 1, Issue 2, June 2001, p.186-192.

-- Refereed Conference Papers and Notes

[C.14] Vatavu, R.-D., **Anthony, L.**, and Wobbrock, J.O. 2014. Gesture Heatmaps: Understanding Gesture Performance with Colorful Visualizations. *Proceedings of the ACM International Conference on Multimodal Interaction (ICMI'2014)*, Istanbul, Turkey, 13 Nov 2014, p.172-179. Acceptance rate 39%.

[C.13] Vatavu, R.-D., **Anthony, L.**, and Wobbrock, J.O. 2013. Relative Accuracy Measures for Stroke Gestures. *Proceedings of the ACM International Conference on Multimodal Interaction (ICMI'2013)*, Sydney, Australia, 11 Dec 2013, p.279-286. Acceptance rate 37%.

[C.12] **Anthony, L.**, Brown, Q., Nias, J., and Tate, B. 2013. Examining the Need for Visual Feedback during Gesture Interaction on Mobile Touchscreen Devices for Kids. *Proceedings of the International Conference on Interaction Design and Children (IDC'2013)*, New York, NY, 26 June 2013, p.157-164. Acceptance rate 33%.

[C.11] **Anthony, L.**, Vatavu, R.-D., and Wobbrock, J.O. 2013. Understanding the Consistency of Users' Pen and Finger Stroke Gesture Articulation. *Proceedings of Graphics Interface (GI'2013)*, Regina, Canada, 29 May 2013, p.87-94. Acceptance rate 38%.

[C.10] **Best Paper Award** **Anthony, L.**, Kim, Y., and Findlater, L. 2013. Analyzing User-Generated YouTube Videos to Understand Touchscreen Use by People with Motor Impairments. *Proceedings of ACM SIGCHI Conference on Human Factors in Computing Systems (CHI'2013)*, Paris, France, 30 Apr 2013, p.1223-1232. Acceptance rate 20%.

[C.9] **Anthony, L.**, Brown, Q., Nias, J., Tate, B., and Mohan, S. 2012. Interaction and Recognition Challenges in Interpreting Children's Touch and Gesture Input on Mobile Devices. *Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces (ITS'2012)*, Cambridge, MA, 14 Nov 2012, p.225-234. Acceptance rate 29%.

[C.8] **Best Paper Award** Vatavu, R.-D., **Anthony, L.**, and Wobbrock, J.O. 2012. Gestures as Point Clouds: A $P Recognizer for User Interface Prototypes. *Proceedings of ACM International Conference on Multimodal Interaction (ICMI'2012)*, Santa Monica, CA, 24 Oct 2012, p.273-278. Acceptance rate non-student full papers 21%.

[C.7] **Anthony, L.** and Wobbrock, J.O. 2012. $N and Protractor: a Fast and Accurate Multistroke Recognizer. *Proceedings of Graphics Interface (GI'2012)*, Toronto, Canada, 29 May 2012, p.117-120. Acceptance rate 38%.

[C.6] **Anthony, L.** and Wobbrock, J.O. 2010. A Lightweight Multistroke Recognizer for User Interface Prototypes. *Proceedings of Graphics Interface (GI'2010)*, Ottawa, Canada, 02 Jun 2010, p.245-

252. Acceptance rate 39%.

[C.5] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2007. Benefits of Handwritten Input for Students Learning Algebra Equation Solving. *Proceedings of the International Conference on Artificial Intelligence and Education (AIEd'2007)*, Los Angeles, CA, 12 Jul 2007, p.521-523. Acceptance rate 29%.

[C.4] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2006. Towards the Application of a Handwriting Interface for Mathematics Learning. *IEEE Conference on Multimedia and Expo (ICME'2006)*, Toronto, Canada, 12 Jul 2006, p.2077-2080. Acceptance rate 51%.

[C.3] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2005. Evaluation of Multimodal Input for Entering Mathematical Equations on the Computer. *ACM Conference on Human Factors in Computing Systems (CHI'2005)*, Portland, OR, 6 Apr 2005, p.1184-1187. Acceptance rate 25%.

[C.2] **Anthony, L.**, Corbett, A., Wagner, A.Z., Stevens, S.M., and Koedinger, K.R. 2004. Student Question-Asking Patterns in an Intelligent Algebra Tutor. *Intelligent Tutoring Systems Conference (ITS'2004)*, Maceio, Brazil, 30 Aug 2004, p.455-467. Acceptance rate 39%.

[C.1] Shapirshteyn, Y., Foster, C.V., John, J.E., **Anthony, L.**, Regli, W.C. 2000. Building Internet-Based Virtual Environments for Collaborative Design. *Co-Designing Conference*, Coventry, UK, 11 Sep 2000, p.117-122.

-- Refereed Conference Posters

[P.5] Rust, K., Malu, M., **Anthony, L.**, and Findlater, L. 2014. Understanding Child-Defined Gestures and Children's Mental Models for Touchscreen Tabletop Interaction. *Proceedings of the International Conference on Interaction Design and Children (IDC'2014)*, Aarhus, Denmark, 18 Jun 2014, p.201-204. Acceptance rate 43%.

[P.4] Brewer, R., **Anthony, L.,** Brown, Q., Irwin, G., Nias, J., and Tate, B. 2013. Using Gamification to Motivate Children to Complete Empirical Studies in Lab Environments. *Proceedings of the International Conference on Interaction Design and Children (IDC'2013)*, New York, NY, 25 Jun 2013, p.388-391. Acceptance rate 49%.

[P.3] **Anthony, L.**, Prasad, S., Hurst, A., and Kuber, R. 2012. A Participatory Design Workshop on Accessible Apps and Games with Students with Learning Disabilities. *Proceedings of the 13th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2012)*, Boulder, CO, 22 Oct 2012, p.253-254. Acceptance rate not available.

[P.2] Carrington, P., Kuber, R., **Anthony, L.**, Hurst, A., and Prasad, S. 2012. Developing an Interface to Support Procedural Memory Training using a Participatory-Based Approach. *Proceedings of British Computer Society Conference on Human-Computer Interaction (BCS HCI 2012)*, Birmingham, UK, 13 Sep 2012, p. 333-338. Acceptance rate 40%.

[P.1] Ganesan, S. and **Anthony, L.** 2012. Using the Kinect to Encourage Older Adults to Exercise: A Prototype. *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2012)*, Austin, TX, 5 May 2012, p.2297-2302. Acceptance rate 48%.

-- Refereed Workshop Papers

[W.11] **Anthony, L.** and Brown, Q. 2013. Learning from HCI: Understanding Children's Input Behaviors on Mobile Touchscreen Devices. Paper for *"Human-Computer Interaction and the Learning Sciences" workshop, International Conference on Computer Supported Collaborative Learning (CSCL'2013)*, Madison, WI, 15 June 2013.

[W.10] Brown, Q., **Anthony, L.**, Nias, J., Tate, B., Brewer, R., and Irwin, G. 2013. Towards Designing

Adaptive Touch-Based Interfaces. *Proceedings of the ACM SIGCHI 2013 Third Mobile Accessibility Workshop (MOBACC'2013)*, Paris, France, 28 Apr 2013.

[W.9] Brown, Q., **Anthony, L.**, Brewer, R., Irwin, G., Nias, J., and Tate, B. 2013. Challenges of Replicating Empirical Studies with Children in HCI. *Proceedings of the ACM SIGCHI 2013 RepliCHI Workshop (RepliCHI'2013)*, Paris, France, 27-28 Apr 2013, p.54-58.

[W.8] Luo, L., Taib, R., **Anthony, L.**, and Lai, J. 2013. Further Investigating Pen Gesture Features Sensitive to Cognitive Load. *Proceedings of the ACM IUI 2013 Workshop on Interacting with Smart Objects (ISO'2013)*, Santa Monica, CA, 19 Mar 2013.

[W.7] Brown, Q. and **Anthony, L.** 2012. Toward Comparing the Touchscreen Interaction Patterns of Kids and Adults. *Proceedings of the ACM SIGCHI Workshop on Educational Software, Interfaces and Technology (EIST'2012)*, Austin, TX, 05-06 May 2012.

[W.6] **Anthony, L.**, Carrington, P., Chu, P., Kidd, C., Lai, J., and Sears, A. 2011. Gesture Dynamics: Features Sensitive to Task Difficulty and Correlated with Physiological Sensors. *Proceedings of the ACM ICMI 2011 Workshop on Inferring Cognitive and Emotional States from Multimodal Measures (MMCogEmS'2011)*, Alicante, Spain, 17 Nov 2011.

[W.5] **Anthony, L.** 2011. Technical and Privacy Challenges of Multimodal Dynamic Adaptive Systems. *Proceedings of the ACM SIGCHI Workshop on Dynamic Accessibility (WODA'2011)*, Vancouver, Canada, 08 May 2011.

[W.4] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2011. Handwriting Interaction for Math Tutors: Lessons for HCI in Education. *Proceedings of the ACM SIGCHI Workshop on Child-Computer Interaction (UI Technologies and their Impact on Educational Pedagogy'2011)*, Vancouver, Canada, 07 May 2011.

[W.3] Regli, S.H., Tremoulet, P.D., Samoylov, A., Sharma, K., Stibler, K., and **Anthony, L.** 2010. Medical Intelligence Informatics. *Proceedings of the ACM SIGCHI First International Workshop of Interactive Systems in Healthcare (WISH'2010)*, Atlanta, GA, 10 Apr 2010, p.145-148.

[W.2] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2007. Adapting Handwriting Recognition for Applications in Algebra Learning. *Proceedings of the ACM Workshop on Educational Multimedia and Multimedia Education (EMME'2007)*, Augsburg, Germany, 28 Sep 2007, p.47-56.

[W.1] Foster, C.V., Hayes, E., McWherter, D., Peabody, M., Shapirsteyn, Y., **Anthony, L.**, and Regli, W.C. 2001. Discovering Knowledge in Design and Manufacturing Repositories. *International Joint Conferences on Artificial Intelligence (IJCAI) Workshop on Knowledge Discovery from Distributed, Heterogeneous, Dynamic, Autonomous Data Sources*, Seattle, WA, ed. V. Honavar, 06 Aug 2001, p.40-42.

-- Theses

[T.2] **Anthony, L.** 2008. *Developing Handwriting-based Intelligent Tutors to Enhance Mathematics Learning.* Ph.D. thesis, Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University. December 2008. (Technical Report CMU-HCII-08-105.)

[T.1] **Anthony, L.** 2002. *Evolving Board Evaluation Functions for a Complex Strategy Game.* Master's thesis, Department of Computer Science, Drexel University. December 2002.

-- Book Chapters

[B.1] **Anthony, L.**, Sharma, K., Stibler, K., Regli, S.H., Tremoulet, P. D., Gilbertson, D.G., and Gerhardt, R.T. 2010. Enabling Pre-Hospital Documentation via Spoken Language

Understanding on the Modern Battlefield. In *Advances in Human Factors and Ergonomics in Healthcare (Proceedings of the International Conference on Applied Human Factors & Ergonomics - AHFE'2010)*, ed. V.G. Duffy, CRC Press, p.642-651.

-- Refereed Panels, Workshops, Events Organized

[Z.1] **Anthony, L.**, Kane, S., and Hurst, A. 2012. Accessibility in the iSchools: Not Just for People with Disabilities? Alternative event organized at *iConference 2012*, Toronto, Canada.

-- Other Articles, Tech Reports, Letters, etc.

[O.7] **Anthony, L.**, Carrington, P., Chu, P., Kidd, C., Lai, J., and Sears, A. 2011. Detecting Events of Interest with Physiological Sensors in a Real-World Email Search Task. *Technical Report UMBC-IS-TR-007*, 10 Oct 2011.

[O.6] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2009. Interspersing Annotated Worked Examples in Algebra Problem Solving. Presented as part of the *Annual Conference of the European Association for Research on Learning and Instruction (EARLI'2009)*, Symposium entitled, "In Vivo Experimentation on Worked Examples Across Domains," Salden, R.J.C.M. and Koedinger, K.R., eds., Amsterdam, the Netherlands, 26 Aug 2009.

[O.5] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2008. How Handwriting Input Helps Students Learning Algebra Equation Solving. *Technical Report CMU-HCII-08-100*, 1 Mar 2008.

[O.4] Adcock, J., Pickens, J., Cooper, M., **Anthony, L.**, Chen, F., and Qvarfordt, P. 2008. FXPAL Interactive Search Experiments for TRECVID 2007. *Proceedings of the NIST TRECVID 2007 Workshop*, 1 Mar 2008.

[O.3] **Anthony, L.**, Yang, J., and Koedinger, K.R. 2006. Entering Mathematical Equations Multimodally: Results on Usability and Interaction Patterns. *Technical Report CMU-HCII-06-101*, 15 Mar 2006.

[O.2] **Anthony, L.**, Regli, W.C., John, J.E., and Lombeyda, S.V. 2001. CUP: A Computer-Aided Conceptual Design Environment for Assembly Modeling. *Technical Report DU-MCS-01-05*, 01 Sep 2001.

[O.1] **Anthony, L.**, Cicirello, V.A., John, J.E., Qin, X., Shapirshteyn, Y., Zaychik, V., and Regli, W.C. 2000. The Engineering Design Repositories Project. *National Science Foundation Design and Manufacturing Grantees Conference*, Vancouver, BC, Canada, 03 Jan 2000.

GRANTS AND GIFTS

[G.5]	**HCC: SMALL: COLLABORATIVE: Mobile Gesture Interaction for Kids: Sensing, Recognition, and Error Recovery - Participant Support** Sub-award from Bowie State University (National Science Foundation (NSF), CISE IIS award #1218664)	$1,500	2015
[G.4]	**Gift, Wacom Inc.**	$2,796	2014
[G.3]	**Gift, Intel Corporation**	$2,990	2014
[G.2]	**HCC: SMALL: COLLABORATIVE: Mobile Gesture Interaction for Kids: Sensing, Recognition, and Error Recovery** [Collaborative Proposal, PI with Quincy Brown (Bowie State University)] National Science Foundation (NSF), CISE IIS awards #IIS-1218395 / 1433228 and IIS-1218664 UMBC / UF portion: $234,258	$498,046	2012-2015

[G.1] **Participatory Design Workshop on Accessible Apps & Games** $5,100 2011
[Co-PI with Sapna Prasad (Landmark College), Ravi Kuber (UMBC), Amy Hurst (UMBC)]
Alliance for Access to Computing Careers (AccessComputing@UW, National Science Foundation (NSF), CISE BPC awards #CNS-0540615, CNS-0837508, CNS-1042260)

PAPER AWARDS

Best of 2013, ACM Computing Reviews 2013
http://computingreviews.com/recommend/bestof/notableitems_2013.cfm

Best Paper Award, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) [top 1%] 2013

Best Paper Award, ACM International Conference on Multimodal Interaction (ICMI) 2012

FELLOWSHIPS, PRIZES, AND AWARDS

Special Recognition for Exceptional Reviewing, ACM Conference on Designing Interactive Systems (DIS) 2014

NSF Scholarship, Anita Borg Institute Grace Hopper Celebration of Women in Computing 2012

NSF Travel Grant, ACM International Conference on Multimodal Interaction (ICMI) 2005

NSF Graduate Research Fellowship, National Science Foundation (NSF) 2002-2005

Honors Program, Drexel University 1998-2002

Dean's List, Drexel University College of Arts & Science 1997-2002

Delaware Valley Technical Recruiters Network Annual Award for Computer Science, Drexel University 2001

National Outstanding Undergraduate, Computing Research Association 2000

Summer Undergraduate Research Fellowship, Grant 70-NAN-B0H0057, "Knowledge-Based Design," National Institute of Standards and Technology (NIST) 2000

James W. Lindemer Endowed Scholarship, Drexel University 2000

Senior First Honors Award, Drexel University 2000

Research Fellowship, AT&T Labs Internet Platforms Technology Organization (IPTO) 2000

Research Experience for Undergraduates Supplement under DMI-9713718, Design Classification for Hybrid Generative / Variant Process Planning, National Science Foundation (NSF), Directorate for Engineering (ENG), Division of Design, Manufacturing and Industrial Innovation (DMI) 1999

Award for Outstanding Industry, Leadership, and Academics in Computer Science, Drexel University 1999

Harry E. Muchnic Scholarship, Drexel University 1999

INVITED TALKS AND PRESENTATIONS

-- External

[E.39] "Understanding, Designing, and Developing Natural User Interactions for Children" Nov. 7-8, 2014
Invited Keynote Speaker, "Designing the Digital Future: A Human-centered Approach to Informatics," Obermann Center for Advanced Studies, University of Iowa, Iowa City, Iowa

[E.38]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, National Information Communications Technology of Australia (NICTA), Sydney, Australia	Dec. 16, 2013
[E.37]	"Relative Accuracy Measures for Stroke Gestures" **Paper Presentation**, ACM International Conference on Multimodal Interaction, Sydney, Australia (*Acceptance rate 20%.*)	Dec. 11, 2013
[E.36]	"Examining the Need for Visual Feedback during Gesture Interaction on Mobile Touchscreen Devices for Kids" **Paper Presentation**, Interaction Design & Children 2013 Conference, New York NY	Jun. 26, 2013
[E.35]	"Analyzing User-Generated YouTube Videos to Understand Touchscreen Use by People with Motor Impairments" **Paper Presentation**, ACM SIGCHI Conference, Paris, France	Apr. 30, 2012
[E.34]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Department of Computer & Information Science & Engineering, University of Florida, Gainesville FL	Mar. 29, 2013
[E.33]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Department of Computer Science and Engineering, University of Nevada, Reno, Reno NV	Mar. 8, 2013
[E.32]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, HCIL Brown Bag Seminar, College of Information Studies, University of Maryland College Park, College Park MD	Feb. 28, 2013
[E.31]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Department of Information Systems, New Jersey Institute of Technology, Newark NJ	Jan. 24, 2013
[E.30]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Computer Science Department, Princeton University, Princeton NJ	Dec. 10, 2012
[E.29]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Department of Library and Information Science, School of Communication and Information, Rutgers University, New Brunswick NJ	Nov. 27, 2012
[E.28]	"Interaction and Recognition Challenges in Interpreting Children's Touch and Gesture Input on Mobile Devices" **Invited Speaker**, User Interface Tea, Computer Science and Artificial Intelligence Laboratory (CSAIL), Massachusetts Institute of Technology, Cambridge MA	Nov. 14, 2012
[E.27]	"Interaction and Recognition Challenges in Interpreting Children's Touch and Gesture Input on Mobile Devices" **Paper Presentation**, ACM International Conference on Interactive Tabletops and Surfaces, Cambridge MA	Nov. 14, 2012
[E.26]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Human-Centered Computing Division, School of Computing, Clemson University, Clemson SC	Nov. 2, 2012
[E.25]	"Gestures as Point Clouds: A $P Recognizer for User Interface Prototypes" **Paper Presentation**, ACM International Conference on Multimodal Interaction, Santa Monica CA	Oct. 24, 2012
[E.24]	"Understanding, Designing, and Developing Natural User Interactions for Children"	Oct. 22,

	Invited Talk, Donald Bren School of Information and Computer Sciences, University of California, Irvine, Irvine CA	2012
[E.23]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Department of Computer Science and Engineering, Texas A&M University, College Station TX	Oct. 15, 2012
[E.22]	"Understanding How Children Use Touchscreens" **Presentation**, Grace Hopper Celebration of Women in Computing, Baltimore MD (*Acceptance rate 13%.*)	Oct. 3, 2012
[E.21]	"Understanding, Designing, and Developing Natural User Interactions for Children" **Invited Talk**, Department of Computer Science Seminar, University of Manitoba, Winnipeg, Canada	July 5, 2012
[E.20]	"$N-Protractor: A Fast and Accurate Multistroke Recognizer" **Paper Presentation**, Graphics Interface 2012 Conference, Toronto, Canada	May 29, 2012
[E.19]	"Towards Comparing Touchscreen Interaction Patterns of Kids and Adults" **Paper Presentation**, ACM SIGCHI Workshop on Educational Interfaces, Software, and Technology, Austin TX	May 5, 2012
[E.18]	"Engaging Users via Alternative Input Modalities for Learning and Gaming" **Invited Talk**, Division of Science, Information Arts and Technology, University of Baltimore, Baltimore MD	Feb. 2, 2012
[E.17]	"Gesture Dynamics: Features Sensitive to Task Difficulty and Correlated with Physiological Sensors" **Paper Presentation**, ACM ICMI Workshop on Inferring Cognitive and Emotional States from Multimodal Measures, Alicante, Spain	Nov. 17, 2011
[E.16]	"Technical and Privacy Challenges of Multimodal Dynamic Adaptive Systems" **Paper Presentation**, ACM SIGCHI Workshop on Dynamic Accessibility, Vancouver, Canada	May 8, 2011
[E.15]	"Handwriting Interaction for Math Tutors: Lessons for HCI in Education" **Paper Presentation**, ACM SIGCHI Workshop on Child-Computer Interaction, Vancouver, Canada	May 7, 2011
[E.14]	"Enabling Pre-Hospital Documentation via Spoken Language Understanding on the Modern Battlefield" **Paper Presentation**, AHFE 2010 Conference on Applied Human Factors & Ergonomics in Healthcare, Miami FL	Jul. 19, 2010
[E.13]	"A Lightweight Multistroke Recognizer for User Interface Prototypes" **Paper Presentation**, Graphics Interface 2010 Conference, Ottawa, Canada	Jun. 2, 2010
[E.12]	"Interspersing Annotated Worked Examples in Algebra Problem Solving" **Symposium Presentation**, EARLI 2009 Biennial Conference for Research on Learning and Instruction, Amsterdam, the Netherlands	Aug. 26, 2009
[E.11]	"Adapting Handwriting Recognition for Applications in Algebra Learning" **Demonstration**, ACM Multimedia Workshop on Educational Multimedia and Multimedia Education, Augsburg, Germany	Sep. 28, 2007
[E.10]	"Adapting Handwriting Recognition for Applications in Algebra Learning" **Paper Presentation**, ACM Multimedia Workshop on Educational Multimedia and	Sep. 28, 2007

Multimedia Education, Augsburg, Germany

[E.9] "Developing Handwriting-based Intelligent Tutors to Enhance Mathematics Learning" — Aug. 22, 2007
Invited Talk, User Sciences and Experiences Research Group, IBM Almaden, San Jose CA

[E.8] "Benefits of Handwritten Input for Students Learning Algebra Equation Solving" — Jul. 12, 2007
Poster Presentation, Artificial Intelligence in Education Conference, Los Angeles CA

[E.7] "How Handwriting Helps Learning: Evidence from a User Study in Algebra Equation Solving" — Oct. 13, 2006
Poster Presentation, NSF Science of Learning Centers Satellite Symposium at the Society for Neuroscience Annual Meeting, Atlanta GA

[E.6] "Toward the Application of a Handwriting Interface for Mathematics Learning" — Jul. 12, 2006
Paper Presentation, IEEE International Conference on Multimedia and Expo, Toronto, Canada

[E.5] "Evaluation of Multimodal Input for Entering Mathematical Equations on the Computer" — Apr. 6, 2005
Paper Presentation, ACM SIGCHI Conference, Portland OR

[E.4] "Student Questions in Problem Solving: Evidence of Student Orientation" — Sep. 2, 2004
Panelist, Intelligent Tutoring Systems Conference, Maceio, Brazil

[E.3] "Student Question-Asking Patterns in an Intelligent Algebra Tutor" — Aug. 30, 2004
Paper Presentation, Intelligent Tutoring Systems Conference, Maceio, Brazil

[E.2] "Building Internet-Based Virtual Environments for Collaborative Design" — Sep. 11, 2000
Paper Presentation, Co-Designing Conference, Coventry, UK

[E.1] "Conceptual Design of Assemblies" — Sep. 10, 1999
Paper Presentation, ASME Design & Technical Conference, Las Vegas NV

-- Internal

[I.19] "Introduction and Research Opportunities" — Aug. 28, 2014
Research Presentation, Digital Arts and Sciences (DAS) Program 2014-2015 Student Welcome Meeting, University of Florida, Gainesville FL

[I.18] "Introduction and Research Opportunities" — Aug. 27, 2014
Research Presentation, CISE Faculty Showcase, University of Florida, Gainesville FL

[I.17] "Introduction and Research Opportunities" — Nov. 12, 2013
Research Presentation, CISE Graduate Programs Information Session, University of Florida, Gainesville FL

[I.16] "Introduction and Research Interests" — Oct. 1, 2013
Research Presentation, CISE Industrial Advisory Board Meeting, University of Florida, Gainesville FL

[I.15] "Introduction and Research Opportunities" — Aug. 30, 2013
Research Presentation, Digital Arts and Sciences (DAS) Program 2013-2014 Student Welcome Meeting, University of Florida, Gainesville FL

[I.14] "Introduction and Research Opportunities" — Aug. 23, 2013
Research Presentation, CISE Faculty Showcase, University of Florida, Gainesville FL

[I.13]	"Cultivating Collaborations for Research Success: Colleagues and Publications" **Post-Doctoral Peer Seminar**, University of Maryland Baltimore County, Baltimore MD	Dec. 5, 2012
[I.12]	"Developing Handwriting-based Intelligent Tutors to Enhance Mathematics Learning" **Thesis Defense**, Carnegie Mellon University, Pittsburgh PA	Oct. 9, 2008
[I.11]	"Developing Handwriting-based Intelligent Tutors to Enhance Mathematics Learning" **Thesis Proposal**, Carnegie Mellon University, Pittsburgh PA	May 22, 2006
[I.10]	"Adding Handwriting Input to Intelligent Tutoring Systems for Algebra" **Research Presentation**, HCII PhD Lunch Seminars, Carnegie Mellon University, Pittsburgh PA	Mar. 6, 2006
[I.9]	"Exploration of the Effects of Handwriting on Learning in Algebra Equation Solving" **Poster Presentation**, Pittsburgh Science of Learning Center NSF Site Visit, Carnegie Mellon University, Pittsburgh PA	June 8, 2006
[I.8]	"Improving Mathematics Learning Online Through the Use of Handwriting Input" **Poster Presentation**, Human-Computer Interaction Institute 12th Anniversary, Carnegie Mellon University, Pittsburgh PA	Apr. 20, 2006
[I.7]	"Evaluation of Multimodal Input for Entering Mathematical Equations on the Computer" **Poster Presentation**, Pittsburgh Science of Learning Center Advisory Board Visit, Carnegie Mellon University, Pittsburgh PA	Dec. 13, 2005
[I.6]	"Evaluation of Multimodal Input for Entering Mathematical Equations on the Computer" **Poster Presentation**, Pittsburgh Science of Learning Center NSF Site Visit, Carnegie Mellon University, Pittsburgh PA	May 16, 2005
[I.5]	"Phase I: Evaluation of Multimodal Input for Entering Mathematical Equations on the Computer" **Poster Presentation**, Pittsburgh Science of Learning Center Advisory Board Visit, Carnegie Mellon University, Pittsburgh PA	Feb. 25, 2005
[I.4]	"Multimodal Interfaces for Solving Equations: Handwriting + Speech + Learning" **Research Presentation**, Communication Requirement, Carnegie Mellon University, Pittsburgh PA	Aug. 26, 2004
[I.3]	"ALPS: Active Learning in Problem Solving, and the Questions Students Ask" **Research Presentation**, Communication Requirement, Carnegie Mellon University, Pittsburgh PA	Aug. 21, 2003
[I.2]	"Undergraduate Research Experiences" **Invited Talk**, DragonWeek, Drexel University, Philadelphia PA	Sep. 20, 2000
[I.1]	"The Conceptual Design Project" **Poster Presentation**, Research Day, Drexel University, Philadelphia PA	Sep. 8, 2000

TEACHING

-- Instructor / Co-Instructor

5. CAP 4053 Artificial Intelligence for Games Spring 2015
Department of CISE, University of Florida

4. CIS 4930 IND/CIS 6930 IND Interaction Design Fall 2014
Department of CISE, University of Florida

3. CAP 4053 Artificial Intelligence for Games Spring 2014
Co-Instructor with Douglas E. Dankel II, Department of CISE, University of Florida

2. CIS 4930 NUI / CIS 6930 NUI Natural User Interface Fall 2013
Department of CISE, University of Florida

1. 05-291 / 15-291 Human-Computer Interaction for Computer Scientists Spring 2007
Co-Instructor with Carolyn Penstein Rosé, Amy Hurst, and Karen Tang, Human-Computer Interaction Institute, Carnegie Mellon University

-- Teaching Assistant

1. 05-410 / 05-610 Introduction to Human-Computer Interaction Methods Fall 2005
Instructors: Chris Neuwirth and John Zimmerman, Human-Computer Interaction Institute, Carnegie Mellon University

-- Guest Lecturer

10. Lecture on Gestural Technologies and Gesture Interaction Spring 2015
CEN 4721C / CAP 5100 Human-Computer Interaction
Instructor: Benjamin Lok, Department of CISE, University of Florida

9. Lecture on Understanding, Designing, and Developing NUIs for Children Spring 2015
CS 220 Human-Computer Interaction
Instructor: Orit Shaer, Computer Science Department, Wellesley College (external, invited)

8. Lecture on Considering Usability during Game Design Spring 2015
DIG 3713C Game Design Practices I
Instructor: Marko Suvajdzic, Digital Worlds Institute, University of Florida

7. Lecture on UI Design for Small Screens and Mobile Interactions Fall 2014
CNT 5517 / CIS 4930 Mobile and Pervasive Computing
Instructor: Sumi Helal, Department of CISE, University of Florida

6. Lecture on Gestural Technologies and Gesture Interaction Spring 2013
IS 698 Rehabilitation Games
Instructor: Ravi Kuber, Information Systems Department, UMBC

5. Lecture on Alternative Interaction (Multimodal) Technologies Spring 2012
IS 303 Human Factors in Computer System Design
Instructor: Anita Komlodi, Information Systems Department, UMBC

4. Lecture on Considering Usability during Game Design Spring 2012
COSC 470 Game Development Project II
Instructor: Anastasia Salter, Division of Science, Information Arts & Technology, University of Baltimore

3. Lecture on Alternative Interaction (Multimodal) Technologies Fall 2011
IS 303 Human Factors in Computer System Design,
Instructor: Anita Komlodi, Information Systems Department, UMBC

2. Lecture on Gestural Technologies and Gesture Interaction Fall 2011
IS 760 Human Computer Interaction
Instructor: Shaun Kane, Information Systems Department, UMBC

1. Lecture on Gestural Technologies and Gesture Interaction Fall 2011
IS 698 Rehabilitation Games
Instructor: Ravi Kuber, Information Systems Department, UMBC

MENTORSHIP AND ADVISING

-- PhD and MS Student Thesis Advisors (*indicates I funded this student)

3. **Jeremiah Blanchard (PhD program in Computer Engineering, pre-candidacy)**, University of Florida (Co-Chair: Joseph Wilson) — ongoing (Jan. 2015)
2. ***Phillip J. Hall (PhD program in Human-Centered Computing, pre-candidacy)**, University of Florida — ongoing (Jan. 2015)
1. ***Alex Shaw (PhD program in Computer Engineering, pre-candidacy)**, University of Florida — ongoing (Jan. 2015)

-- PhD and MS Student Committees (non-advising roles)

3. **Andrew Robb (PhD Candidate in Computer Engineering)**, University of Florida — Proposal: Fall 2014
   "Mixed-Agency Teams and their Effect on Social Presence and Behavior during In-Situ Team Training" (Chair: Benjamin Lok)
2. **Liangke Zhao (MS Candidate in Computer Science)**, University of Florida — Defense: Spring 2015
   "Inverse Mapping Models: Real-time 3D reconstruction of deformable objects with known skeletal geometry" (Chair: Anand Rangarajan)
1. **Ruijin Wu (PhD in Computer Engineering)**, University of Florida — Defense: July 2014
   "Sampling Geometry Entity: Root finding, precise surface rendering and configuration space analysis" (Chair: Jorg Peters)

-- Graduate Research Assistants Supervised (*indicates I funded this student)

12. ***Nikita Dagar (MS in Computer Science, 2016)**, University of Florida — ongoing (Jan. 2015)
    Touch and Gesture Interaction Differences for Children & Adults
11. ***Juthika Das (MS in Computer Science, 2016)**, University of Florida — ongoing (Nov. 2014)
    Touch and Gesture Interaction Differences for Children & Adults
10. ***Qingchuan (Bruce) Zhao (MS in Computer Engineering, 2015)**, University of Florida — 2014-2015 (12 mos.)
    Extensions of the $-family of Stroke Gesture Recognizers
9. ***Sagar Parmar (MS in Computer Science, 2015)**, University of Florida — 2014 (5 mos.)
    Touch and Gesture Interaction Differences for Children & Adults
8. ***Akshay Ramesh Holla (MS in Computer Engineering, 2014)**, University of Florida — 2014-2015 (14 mos.)
    Touch and Gesture Interaction Differences for Children & Adults
7. ***Germaine Irwin (PhD candidate in Human-Centered Computing)**, University of Maryland Baltimore County — 2012-2013 (12 mos.)
    Touch and Gesture Interaction Differences for Children & Adults
6. **Patrick Carrington (PhD candidate in Human-Centered Computing)**, University of Maryland Baltimore County — 2011-2012 (12 mos.)

Posture-Sensing Chair: Classification from Labeled Data

5. **Samyukta Ganesan (MS in Human-Centered Computing, 2012)**, University of Maryland Baltimore County — 2012 (6 mos.)
   Kinect Exercise Games for Older Adults
4. **Peng Chu (PhD candidate in Information Systems)**, University of Maryland Baltimore County — 2011 (6 mos.)
   Multimodal Stress Detection Data Collection
3. **Jianwei (Vivian) Lai (PhD candidate in Information Systems)**, University of Maryland Baltimore County — 2011 (4 mos.)
   Multimodal Stress Detection Data Collection
2. **Thomas Bolster (BA in Psychology, 2005; Master's of Human-Computer Interaction, 2009)**, Carnegie Mellon University — 2005 (4 mos.)
   Lab Learning Study Data Collection
1. **Andrea Knight (Master's of Human-Computer Interaction, 2005)**, Carnegie Mellon University — 2004 (3 mos.)
   Math Input Study Data Collection

-- Undergraduate Research Assistants Supervised (*indicates I funded this student)

12. **Nathan deKrey (BS in Mechanical Engineering, Computer Science Minor, 2016)**, University of Florida — ongoing (Jan. 2015)
    EGN4912: Whole-Body Interaction Differences for Children & Adults
11. ***Callum Jago (BS in Computer Engineering, 2018)**, University of Florida — ongoing (Jan. 2015)
    EGN4912: Touch and Gesture Interaction Differences for Children & Adults
10. ***Annie Luc (BS in Computer Science, 2018)**, University of Florida — ongoing (Nov. 2014)
    EGN4912: Touchscreen Exhibits for Science Museum Learning
9. ***Brittany Craig (BS in Mathematics and Computer Science, 2016)**, St. Catherine University, Minneapolis-St.Paul, MN — 2014 (3 mos.)
   CRA DREU Program, Full Time Intern, Summer 2014
   Touch and Gesture Interaction Differences for Children & Adults, Kinect Exercise Games for Older Adults
8. ***Danielle Sikich (BS in Computer Science, 2015)**, Western Oregon University, Monmouth, OR — 2014 (3 mos.)
   CRA DREU Program, Full-Time Intern, Summer 2014
   Touch and Gesture Interaction Differences for Children & Adults, Kinect Exercise Games for Older Adults
7. ***Sydney Richardson (BS in Digital Arts and Sciences, 2015)**, University of Florida — 2014 (7 mos.)
   EGN4912: Touch and Gesture Interaction Differences for Children & Adults, Kinect Exercise Games for Older Adults
6. ***Julia Woodward (BS in Digital Arts and Sciences, 2017)**, University of Florida — ongoing (Jan. 2014)
   EGN4912: INIT Lab Manager, Touch and Gesture Interaction Differences for Children & Adults
5. ***Femi Williams (BS in Information Systems, 2014)**, University of Maryland Baltimore Country — 2013 (4 mos.)
   Touch and Gesture Interaction Differences for Children & Adults
4. ***Felix Bui (BS in Information Systems, 2013)**, University of Maryland Baltimore — 2013

Country (4 mos.)
Touch and Gesture Interaction Differences for Children & Adults

3. ***Luis Queral (BS in Interdisciplinary Studies, 2013)**, University of Maryland Baltimore Country 2012-2013 (4 mos.)
Touch and Gesture Interaction Differences for Children & Adults

2. **Patrick Carrington (BS in Information Systems, 2011)**, University of Maryland Baltimore Country 2011 (3 mos.)
Multimodal Stress Detection Data Collection

1. **Keisha How (BS in Computer Science, 2008)**, Carnegie Mellon University 2006 (3 mos.)
Microsoft Tablet PC Recognizer Implementation and Evaluation

-- UF CISE Senior Projects (CIS4914) Supervised

5. **Ben Clark (BS in Computer Science, 2015), Jacob Cukjati (BS in Computer Science, 2015), Sze-Lok Pun (BS in Computer Science, 2015)**, University of Florida Spring 2015
CIS4914 Senior Project: TBD

4. **David Bai (BS in Computer Science, 2015)**, University of Florida Spring 2015
CIS4914 Senior Project: TBD

3. **Richard Leon (BS in Computer Science, 2015)**, University of Florida Spring 2015
CIS4914 Senior Project: TBD

2. **Melissa Chelsea Pinka (BS in Computer Science, 2014)**, University of Florida Spring 2014
CIS4914 Senior Project: A Virtual, User-Created Scavenger Hunt on the University of Florida Campus for Mobile Devices

1. **Zelisha Siclait (BS in Computer Science, 2014)**, University of Florida Spring 2014
CIS4914 Senior Project: An Asynchronous Drawing and Messaging Application for Mobile Devices

-- Independent / Individual Studies Supervised

6. **Joanna Wong (BS in Information Systems, 2013)**, University of Maryland Baltimore County Spring 2013
IS 400 Individual Study in Information Systems (Research): Touch and Gesture Interaction Differences for Children & Adults

5. **Germaine Irwin (PhD candidate in Human-Centered Computing)**, University of Maryland Baltimore County Spring 2013
HCC 801 Independent Study for Doctoral Students: Touch and Gesture Interaction Differences for Children & Adults

4. **Robin Brewer (PhD candidate in Human-Centered Computing)**, University of Maryland Baltimore County Fall 2012
HCC 801 Independent Study for Doctoral Students: Touch and Gesture Interaction Differences for Children & Adults

3. **Shreya Mohan (BS in Information Systems, 2013)**, University of Maryland Baltimore County Spring 2012
IS 400 Individual Study in Information Systems (Research): Touch and Gesture Interaction Differences for Children & Adults

2. **Patrick Carrington (PhD candidate in Human-Centered Computing)**, University of Maryland Baltimore County Spring 2012

HCC 801 Independent Study for Doctoral Students: Posture-Sensing Chair: Classification from Labeled Data

1. **Samyukta Ganesan (MS in Human-Centered Computing, 2012)**, University of Maryland Baltimore County — Fall 2011
   IS 700 Independent Study in Information Systems: Kinect Exercise Games for Older Adults

INDUSTRY EXPERIENCE AND INTERNSHIPS

Senior Member, Engineering Staff, User-Centered Interfaces Group, Lockheed Martin Advanced Technology Laboratories (LM ATL), Cherry Hill NJ — 2008-2010

Applied advanced user interface technologies such as multimodal interaction and context-sensitive systems to the needs and requirements of the military end user. Led user-centered design and development for multiple projects, including a mobile spoken-language field reporting system for front-line medics and a heads-up display for distributed patrol team situational awareness. LM ATL is a research and development laboratory specializing in government contracts. [Publications: C.6, W.3, B.1]

Summer Graduate Intern, Fuji-Xerox Palo Alto Laboratory (FXPAL), Palo Alto CA — Summer 2007

Conducted requirements analysis, expert interviews, and contextual inquiry of video searching tasks to inform the design of a collaborative information seeking system. Designed, developed, and evaluated rapid-serial-visual-presentation (RSVP) interface for collaborative video search. System used in 2007 NIST Text Retrieval Conference Video Retrieval Evaluation (TRECVID) competition. [Publication: O.4]

Summer Undergraduate Intern, OpenCASCADE, Matra DataVision, Palaiseau France — Summer 2001

Self-directed investigation of OpenCASCADE's 3D solid modeling kernel and application framework for building user interfaces to databases of 3D artifacts. Liaison between OpenCASCADE and Geometric & Intelligent Computing Laboratory (GICL) at Drexel. Trained Drexel student peers to use framework.

NIST Summer Undergraduate Research Fellow (SURF), Design Process Group, National Institute of Standards & Technology (NIST), Gaithersburg MD — Summer 2000

Designed and developed web interface to allow users to query online repository of 3D solid models of engineering design components. Dynamic query interface allowed guided exploration of valid search criteria for NIST Design Repositories Project. [Publication: O.1]

SERVICE AND MEMBERSHIPS

-- University

1. Departmental

Member, PhD Program Recruiting Committee (University of Florida—CISE) — 2014-2015

Member, Departmental Hiring Committee (University of Florida—CISE) — 2014-2015

Coordinator, PhD Thesis Defense Toasts (Carnegie Mellon University—HCII) — 2006-2007

Coordinator, PhD Biweekly Lunch Seminars (Carnegie Mellon University—HCII) — 2005-2007

Member, Admissions Committee (Carnegie Mellon University—HCII) — 2003

Member, Mathematics and Computer Science Society (Drexel University) — 1997-2002

Assistant Webmaster, Mathematics and Computer Science Department (Drexel University) — 1997-1998

2. College or Divisional

Faculty Advisor, Game Makers' Guild (student organization) — 2015

Faculty Coordinator, Computer Science Day for Women in Science & Engineering (WiSE) "Spring Girlz Camp" events — 2014-2015

Judge, University of Florida Graduate Student Research Day 2013-2014

Member, School of Computer Science Graduate Women Mentoring Program (Carnegie Mellon University) 2007-2008

Program Committee, Opportunities for Undergraduate Research in Computer Science (Carnegie Mellon University) 2007

Member, Women@SCS Graduate Student Council (Carnegie Mellon University) 2002-2008

Member, School of Computer Science Dec/5, Inc. (Carnegie Mellon University) 2002-2003

-- Professional

1. Conference Committees

AAAI: AAAI Conference on Artificial Intelligence 2013
- 2013: Program Committee Member [reviewing only]

CHI: ACM SIGCHI Conference on Human Factors in Computing Systems 2014-2015
- 2015: Interactivity Program Committee Member [reviewing only]
- 2014: Student Research Competition Program Committee Member [reviewing only]

ICMI: ACM International Conference on Multimodal Interfaces 2011, 2013, 2015
- 2015: Publication Co-Chair [proceedings management]
- 2013: Publication Co-Chair [proceedings management]
- 2011: Program Committee Member [reviewing only]

IDC: ACM SIGCHI Conference on Interaction Design and Children 2013-2015
- 2015: Program Committee Member [reviewing only]
- 2014: Program Committee Member [reviewing only]
- 2013: Program Committee Member [reviewing only]

IUI: International Conference on Intelligent User Interface 2014-2015
- 2015: Program Committee Member [reviewing only]
- 2014: Program Committee Member [reviewing only]

GI: Graphics Interface 2013-2014
- 2014: Program Committee Member [full member]
- 2013: Program Committee Member [full member]

MM: ACM Multimedia 2010
- 2010: Program Committee Member [reviewing only]

2. Reviewing

AIEd: International Conference on Artificial Intelligence in Education 2007

CHB: Computers and Human Behavior (journal) 2014

CHI: ACM SIGCHI Conference on Human Factors in Computing Systems 2008-2014

CSUR: ACM Computing Surveys 2013

DIS: ACM Conference on Designing Interactive Systems 2010, 2014

EICS: ACM SIGCHI Symposium on Engineering Interactive Computing Systems 2013

GI: Graphics Interface 2011-2012

HCI: Human-Computer Interaction (journal) 2010

ICMI: International Conference on Multimodal Interfaces 2008, 2011-2014

IJDAR: International Journal of Document Analysis and Recognition (journal)	2007, 2009
IJHCS: International Journal of Human-Computer Studies (journal)	2012-2014
ITS: International Conference on Intelligent Tutoring Systems	2008
IUI: International Conference on Intelligent User Interfaces	2013
IWC: Interacting with Computers (journal)	2012-2014
MobileHCI: ACM SIGCHI International Conference on Human-Computer Interaction with Mobile Devices and Services	2012-2013
MM: ACM Multimedia	2010
Pervasive: International Conference on Pervasive Computing	2011
Tabletop: ACM International Conference on Interactive Tabletops and Surfaces	2010, 2012
TEI: International Conference on Tangible, Embodied, and Embedded Interaction	2014-2015
TOCHI: ACM Transactions on Computer-Human Interaction	2014
Ubicomp: ACM SIGCHI International Conference on Ubiquitous Computing	2012
UIST: ACM Symposium on User Interface Software and Technology	2006, '08, '11-12

3. Other Professional Service

NCWIT: National Council on Women in Information Technology Award for Aspiration Reviewer	2013-2015

4. Student Volunteer

IJCAI: International Joint Conferences on Artificial Intelligence	2001

5. Professional Memberships

ACM: Association for Computing Machinery	2000-present
SIGCHI: ACM Special Interest Group in Computer-Human Interaction	2010-present
EICS: ACM SIGCHI Symposium on Engineering Interactive Computing Systems (ACM SIGCHI Community)	2013-present
IUI: International Conference on Intelligent User Interfaces (ACM SIGCHI Community)	2013-present

-- Community

Volunteer, Philadelphia Animal Welfare Society (PAWS)	2010-2013
Volunteer, Philadelphia Clean Air Council	2009-2010
Organizing Member, Technology Night for Girls	2005-2006

REFERENCES

Available upon request.