New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

## 1. Program Description and Purpose

Provide a narrative overview of the proposed program that includes the following:

a) Provide a brief description of the program as it will appear in the institution’s catalog.

Fundamental to Human-Centered Computing (HCC) is a focus on humans as individuals and in social contexts, and their behavior with technology. With roots in multiple areas of computing, arts, and social sciences, HCC blends strength from these varied disciplines to understand the way in which people use technology.

Students of this degree will be at the intersection of computer advancements and understanding human behavior with technology. Topics of consideration include the design, evaluation and implementation of interactive computing systems and the understanding of ways in which such systems can transform our lives. With a blending of content from Computing, Psychology, and Design, HCC blends core theoretical and applied human-technology concepts in a contemporary interdisciplinary curricular model.

Given the growing reliance on computing in our daily lives, technology no longer is the exclusive realm of tech-savvy users; industry has recognized the need to make software and devices that are usable and desirable. This degree will prepare students for careers in industry or graduate study, offering options to specialize in different areas of HCC depending on individual student interests in computing, design, or psychology.

b) List educational and (if appropriate) career outcomes. Describe any specific curricular features that incorporate rigorous academic and career preparation.

1. Program Goal: “Students will study how people interact with technology”
   a. Educational Outcomes - Graduates will be able to:
      i. Gather user, client, and system needs/data and translate into technical and aesthetic specifications and requirements.
      ii. Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility.
      iii. Develop and assess prototypes that meet the aesthetic and functional requirements of a client.
      iv. Evaluate user interfaces and user experiences, through a variety of techniques and methodologies.
      v. Communicate via written reports, visualizations, and presentations.
      vi. Describe emerging technologies and explore possibilities for their use.
   b. Career Outcomes – Graduates will:
      i. Be employable in a position requiring mastery of concepts and application skills in Human-Centered Computing.
      ii. Become leaders in their organization.
      iii. Work effectively as a team member in their organization.
      iv. Become lifelong learners in their discipline.
c) **Describe how the program fits with and advances the institution’s mission, vision, values and reputation.**

**Vision:** *RIT will lead higher education in preparing students for innovative, creative, and successful careers in a global society.*

**Mission:** *RIT’s mission is to provide a broad range of career-oriented educational programs with the goal of producing innovative, creative graduates who are well-prepared for their chosen careers in a global society.*

The RIT community engages and motivates students through stimulating and collaborative experiences. We rigorously pursue new and emerging career areas. We develop and deliver curricula and advance scholarship and research relevant to emerging technologies and social conditions.

*Our community is committed to diversity and student centeredness and is distinguished by our innovative and collaborative spirit. Internal and external partnerships expand our students’ experiential learning.*

*RIT is committed to mutually enriching relationships with alumni, government, business, and the world community. Teaching, learning, scholarship, research, innovation, and leadership development for promoting student success are our central enterprises.*

The HCC program is an excellent example of a cross disciplinary degree that will prepare students for an innovative, creative and globally aware career. There is growing reliance on computing in our daily lives; technology, devices and interfaces are pervasive. Industry has recognized the need to make software and devices that are usable, predictive and desirable. This degree will prepare students for careers in industry or graduate study, offering options to specialize in different areas of HCC depending on individual student interests in computing, design, or psychology.

The students produced within the HCC degree will have innovative insights into human behavior with relation to computing. Studying the various disciplines (computing, psychology, design) while learning the methods of research and testing gives the students inventive ways of looking at social contexts within society. Developing prototypes while exploring emerging technical areas will enable the students to do extensive testing to assess the success/technical feasibility of their chosen solution. Students will obtain a background understanding of human information processing and of quantitative and qualitative research methods and testing, applying these skills to the technology of today.

A hallmark of this B.S. degree will be the participation of students in the development and evaluation of new interaction experiences through co-ops, student and/or faculty initiated research, and a final year project. The year long senior project course, taken in conjunction with students in the Computing and Information Technologies undergraduate degree as well as students in the Web & Mobile Computing undergraduate degree, is designed enhance teamwork, cutting across disciplines and even borders. The students based on the Rochester campus will be put on teams with students in our Dubai and Croatia campuses, placing students in situations of working in a global community with their future peers. The HCC students focus will not only be on developing the interfaces of these projects, but also the usability and accessibility for a wide range of users.
d) Describe the justification and documented need for this program and how this program contributes to RIT’s strategic plan priorities and key result areas.

This program continues RIT’s tradition of technical education in fields of importance to industry and society. The proposed program is designed to capitalize on the existing expertise in the multiple participating departments, leveraging their existing portfolio of courses to create a deeper field of study.

This HCC B.S. degree will add to the RIT portfolio of professional degrees. It will be distinguished from existing degree programs in the colleges by providing students methods, computing, and / or psychology expertise that is not currently available, in combination. The HCC degree will supplement learning for students with those interests, allowing them to gain valuable skills in research methods, psychology, and to enter jobs that require this additional skill set. This degree will prepare students for careers in industry or graduate study, offering options to specialize in different areas of HCC depending on individual student interests in computing, design, or psychology.

While many other universities offer a graduate degree in the field of human computer interface (e.g., DePaul, Georgia Tech, University of Washington) and several universities offer minors or concentrations at the undergraduate level (e.g., Virginia Tech, Univ. of Illinois), there are very few undergraduate degree programs in this field. RIT will join a very small group of universities (NJIT, CMU) that combine the fields of psychology, design, and computing to produce graduates that are capable of designing not just graphical user interfaces, but transforming the way we interact with technology. A key aspect of the RIT degree, not seen in other programs, will be the inclusion of accessibility as a design consideration.

The Human-Centered Computing (HCC) undergraduate program will contribute to the achievement of the university’s key result areas in the following manner;

- Be renowned for student success- The multi-disciplinary, multi-national capstone experience that occurs in the senior year includes work that builds on their core subjects. These capstone projects are likely to be exhibited at ‘Imagine RIT’ and other events. The diversity of skills the graduate acquires will be an outstanding fit with the current and future needs in the field of user-centered computing.
- Maximize opportunities for scholarship- students will be encouraged and academically prepared to perform scholarly work with the faculty of all three participating departments.
- Execute operational excellence- Operational excellence is defined in this context as efficient use of resources and employment potential and placement. Initially this degree will add only a slight additional teaching burden to the resources already allocated for teaching, as a majority of the courses already exist. As enrollments grow, additional sections and resources will be required. However only a small number of these sections will be dedicated solely to this degree program.
- Achieve the highest level of stakeholder satisfaction- The HCC undergraduate program is aimed at students seeking to advance their education, cultivating an overlap of curricular areas that didn’t exist in concert before. The participating departments have created a new experience for the students, where the overlap in interdisciplinary areas add strength to each other. Faculty, experienced in instruction and course design, were recruited to look for these areas of intersection, maximizing the learning experience of students, achieving satisfaction with the courses individually and the program as a whole.
e) Describe curricular features that address emerging disciplines and related student and faculty scholarship, research and creativity.

Through HCC, RIT has an opportunity to build a large-scale collaborative endeavor across departments, colleges, and even geographical locations to pursue teaching and research in human computer interaction, language processing in computing, information design, interactivity in new media, and non-traditional users through accessibility. The proposed degree program is designed to create opportunities for students to explore user behavior techniques and methodologies to pose novel questions and solutions, and to develop the kinds of expertise to apply new knowledge and skills in the digital-based culture and markets in which we live.

Given our institution’s established history of career-focused curriculum and cooperative education opportunities, RIT is uniquely poised to satisfy both the demands of our students for interdisciplinary education and the modern workplace for creative and adaptive graduates. The first two years of the proposed HCC curriculum balances general liberal arts courses with courses in computing, design and psychology with new human-centered computing core courses. This combination builds technical capability while giving the students a well-rounded perspective; the HCC core courses will make explicit the similarities and differences in user ability, user behavior and computational approaches to problem solving. In the third and fourth years students develop a specialization in an area of their choice and complete two semesters of co-op opportunities to connect their classroom knowledge to the needs of the workplace. RIT already possesses the necessary infrastructure, including both faculty expertise and computer facilities, to deliver this curriculum. Additionally, curricular partnerships are now in place between the three colleges to accommodate students’ interdisciplinary and collaborative needs.

RIT has a history of faculty and student scholarship in Human-Centered Computing fields. In addition to faculty-led research in the areas of human computer interaction, collaborative technology, accessibility, geographic information systems, wearable computing, and other emerging fields, there is a vibrant community of students with interest in human-centered computing projects, including a student chapter of the Association for Computing Machinery’s special interest group on Computer-Human Interaction. With an interdisciplinary perspective, the Human-Centric Multi-Modal Modeling Group unites researchers across several colleges at RIT who combine methodologies of human-centered design, visual perception, imaging science, and computational linguistics to study the influence of perceptual expertise and domain knowledge on complex visual tasks. In addition, RIT has long been a leader in the field of accessibility, and there has been exciting recent growth in the number of faculty and research projects focused on technologies for people with a variety of capabilities, including older adults, people who are deaf and hard-of-hearing, and people with visual impairments. With the significant faculty scholarship in these areas, students will have the opportunity to participate in research projects, conduct independent studies in cutting-edge topics, and develop their creative and independent research skills. With courses and concentrations available in these fields, students will be well prepared to take advantage of these hands-on scholarly and creative opportunities.

f) Excepting general education requirements, describe and list documented curricular interconnections and integration between this program and other disciplines, programs and colleges at the University (e.g., minors, concentrations, BS/MS options).

At its heart, HCC is an evolving discipline, addressing the implementation, design, and user understanding of rapidly emerging technologies. A recent survey of HCC educators revealed that the greatest needs within the profession are for an understanding of methods, encompassing both design and empirical methods for product
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testing [ACM SIGCHI 2012 Report of Education Activities]. This emphasis underscores the need to develop critical analytical skills, the ability to frame problems, and knowledge of appropriate methodologies. Professionals must be able to critically analyze and evaluate a variety of user designs, requiring expertise in both methods that quantify effectiveness as well as methods that evaluate user abilities and experiences. The program, therefore, will promote the development of skills appropriate for evaluating the usability, effectiveness, and desirability of interaction experiences. To address these, course competencies will come from instruction in:

- **Computing (GCCIS):** Foundations of HCI, prototyping/rapid development, usability testing, user-centered design methods, web tools and development, interface programming, user interface design, accessibility, social and ethical dimensions of computing, information visualization, software design principles, social computing, immersion and the media interface and innovation.

- **Design (CIAS):** Digital media, design, layout, typography and web interactions, enabling students to apply design processes into simulations and prototypes for interactive projects.

- **Psychology (COLA):** Cognitive psychology (memory and attention; decision making and problem solving), research methods / statistics, social psychology, and perception (color, form and object perception).

This is an interdisciplinary program in nature. Faculty from computing, new media design and psychology were involved in the planning and will be delivering the courses and doing the research with the student population. The program requires an imperative collaboration between GCCIS, CIAS and COLA. The intersection between computing, design and psychology is paramount in the students understanding of human subjects as they interact digitally.

The program contains 4 core Psychology courses in the first two years. These courses are intended to give the students grounding in the psychology of subjects - computing users, their behaviors and why they exhibit the traits that they do - while learning the fundamentals of research.

During the first two years, students will be taking a year of digital design – learning the fundamentals of design, the tools of designers and the design process. While they study design, they will be applying these concepts to the Web realm as they study the technology of Web design and differing form factors (mobile). They will also be studying the ethics involved in computing and solving problems in technology.

In the third and fourth years, students can pick two concentration tracks from several choices. Concentrations will come in the form of accessibility, psychology, design, front-end development and instructional technology. Students will be required to participate in 2 co-op requirements starting at the end of their sophomore year and finishing before their senior year, giving the students an opportunity to work with clients.

During their final year, students will be required to take a Senior Project course. This course will be populated with all of the other students in the Information Sciences & Technologies Department. These multidisciplinary teams will include students who have spent their college careers studying mobile development, web application development, database development and networking and system administration. These teams will be given a year long ‘real world’ assignment, learning not only how to elicit information from clients but also how to work in teams with peers of varying, but analogous foci.
g) Describe the role of faculty in the program’s design.

Faculty within the Departments of Information Sciences & Technologies, Psychology, and New Media Design believe the HCC undergraduate program will be a strong complement to existing programs, utilize all of the expertise and ability of the faculty, provide a viable, educational opportunity for students interested in the field, and be a unique offering among US universities. While the IST Department has taken the lead in coordination of this new degree, the faculty all three departments have worked collaboratively to define the program and develop the courses. These courses will be taught by the each department’s faculty who have the capacity and expertise to teach in the computing, design and psychology disciplines.

h) Input of External partners

Below are the external partners we queried about the degree to gain their insight and support. They provided feedback of how this degree program will provide and serve the educational objectives of the student population – as well as the future job market. The letters are included in Appendix D.

External partners were selected on the basis of their academic and professional standing in human-centered computing fields, and they include representatives from both academic and industrial settings. Several of the external partners are well-known and highly-cited researchers in the field of human-computer interaction, including winners of best-paper awards at the ACM SIGCHI Conference on Human Factors in Computing Systems and other professional honors. Several external partners have first-hand experience in undergraduate and graduate academic programs in computer science and human computer interaction, including leadership roles in these programs (e.g., director or prior department chair) with involvement in the acceptance of students to advanced programs of study. Other external partners have risen to key leadership roles with hiring responsibility in the industrial sector, and they are able to offer valuable insight on the career options available to future graduates of the Bachelor of Science degree program in Human-Centered Computing.

The feedback from the external partners was reviewed and folded into this degree proposal. Specifically, the curricular suggestions we implemented:

- Emphasis in the design courses will not be tool based but rather about the techniques and methods that designers use.
- Ensuring that the students would have a solid background in programming, from the Mobile, Web and generic points of view.
- Programming for different devices (smart phones, tablets, etc.) will be approached from the start in the 2 specific programming courses (ISTE-120 & ISTE-121) as well as the Web & Mobile courses (ISTE-140 & ISTE-240)
- Concern about qualitative methods is addressed. It is our view that the program presents students with the opportunity to learn the methods and behavioral measures used in experimental psychology. The senior capstone will require HCC majors to work with colleagues in other IST disciplines and Psychology or Design, and methods appropriate to the projects will be put in practice. These will require student ‘get the right design’ as well as ‘designing right’ as they develop solutions.
i) Provide enrollment projections for Year 1 through Year 5

Enrollment management has projected the following enrollment (see Appendix B) for more detail:

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2. Program Courses and Schedule
a) Using Table 1a for undergraduate programs list all required and elective courses in the program and show how a typical student would progress through the program.

Table 1a: Undergraduate Program Schedule
- Indicate academic calendar type: _X_Semester ___Quarter ___Trimester ___Other (describe)
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Copy/expand the table as needed to show additional terms
### New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

#### Program Courses and Schedule

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<tr>
<th>Term: Fall 1</th>
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<td>ISTE-262 Foundations of HCC</td>
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**Coop 1 (After Sophomore year)**

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**Coop 2 (before Senior Year)**

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</table>

### Program Totals:

| Credits: | 120 | Liberal Arts & Sciences: | 60 | Major: | 48 | Elective & Other: | 12 |
Notes

- The P-5 (Natural Science Inquiry) course must be a lab science
- Both Scientific perspectives (P-5 & P-6) require a minimum 3 credit course. The student could choose one of the 4 credit courses for either (or both), but it is not required.

Concentrations

Students matriculated in this degree will select two three-course concentrations representing eighteen semester hours of work (nine each). Concentrations and corresponding courses are listed below.

Design
- NMDE-201 Elements II
- NMDE-203 Interactive II
- NMDE-302 GUI

Psychology
- PSYC - 330 Memory & Attention
- PSYC - 331 Language & Thought
- PSYC - 332 Decision Making, Judgment & Problem Solving

Front End Development
- ISTE-340 Client Programming
- ISTE-454 Mobile Application Development I
- ISTE-456 Mobile Application Development II

Accessibility
- ISTE-362 Access & Assistive Technology (new)
- ISTE-462 Research in Accessibility (new)
- ISTE-464 Accessibility through the Lifespan (new)

Instructional Technology
- ISTE-392 Fund Instruct Tech
- ISTE-394 Interactive Courseware
- PSYC-235 Learning & Behavior

Natural Language Processing Concentration:
- ENGL 351 Language Technology
- ENGL 481 Introduction to Natural Language Processing
- ENGL 582 Advanced Topics in Computational Linguistics

Special Topics

A three course, nine-semester hour special topics concentration is available to selected students who wish to pursue an in-depth study of an area not present in the program’s concentration offerings. The student will develop a special concentration proposal with the faculty advisor. The head of the academic unit will review the proposal and will approve or deny the request.
b) See Table 1a for RIT General Education Framework courses

c) For every required course provided by a department other than the program’s home department, provide a memo of support in Appendix C from that department, which includes an estimate of incremental costs for offering additional sections or new courses for the proposed program.

d) If the program will be offered through a non-traditional schedule (e.g., off-campus, on-line, etc.), provide a brief explanation of the schedule, including its impact on financial aid eligibility.

e) For existing courses that are part of the major, submit a copy of the current catalog description.

CORE:

**CLA-PSYC-101 Introduction to Psychology**
Introduction to the field of psychology. Provides a survey of basic concepts, theories, and research methods. Topics include: thinking critically with psychological science; neuroscience and behavior; sensation and perception; learning; memory; thinking, language, and intelligence; motivation and emotion; personality; psychological disorders and therapy; and social psychology. Required course for psychology majors.

**CLA-PSYC-223 Cognitive Psychology**
This course examines how people perceive, learn, represent, remember and use information. Contemporary theory and research are surveyed in such areas as attention, pattern and object recognition, memory, knowledge representation, language acquisition and use, reasoning, decision-making, problem solving, creativity, and intelligence. Applications in artificial intelligence and human/technology interaction may also be considered.

**CLA-PSYC-250 Research Methods I**
This course will serve as an introduction to research methods in Psychology, with the goal of understanding research design, analysis and writing. Topics include examining the variety of methods used in psychology research, understanding research ethics, developing empirical hypotheses, designing experiments, understanding statistical concepts, interpreting results, and writing research and review papers in APA style. This course is offered in sequence with PSYC-251.

**CLA-PSYC-251 Research Methods II**
This course will serve as an advanced research methods course in Psychology, and will build on the foundational knowledge presented in Research Methods I. Topics and tasks for this course include designing single and multi-factor experiments, interpreting correlational research, completing statistical analyses appropriate to design, completing and analyzing an IRB application, understanding observational and survey research, and presenting results in APA style. This course is offered in sequence with PSYC-250 (Research Methods I).

**COS-STAT-145 Introduction to Statistics I**
This course will study the statistical methods of presenting and analyzing data. Topics include descriptive statistics and displays, random sampling, the normal distribution, confidence intervals, and hypothesis testing. The statistical software MINITAB is used to reinforce these principles and to introduce the use of technology in statistical analysis. This is a general introductory statistic course and is intended for a broad range of programs.
COS-STAT-146 Introduction to Statistics II
This course is an elementary introduction to the topics of regression and analysis of variance. The statistical software package Minitab will be used to reinforce these techniques. The focus of this course is on business applications. This is a general introductory statistics course and is intended for a broad range of programs. (COS-STAT-145)

GCCIS-ISTE-110 Ethics in Computing (FY WI)
Computing and the Internet are now integral parts of our lives. In this course, we consider and discuss how ethical theories and principles can inform and provide guidance about interactions and uses of computing technologies. Topics include the development interpretation, and application of ethical theory, moral values, personal responsibility, codes of conduct, ethics in the real and virtual worlds, intellectual property, and information security. This is a Writing Intensive (WI) course. Students are provided with guidance and opportunities for improving informal and formal writing skills. Grades received on writing assignments will constitute a significant component of the final course grade.

GCCIS-ISTE-120 Computer Problem Solving – Info Domain I
A first course in using the object-oriented approach to solve problems in the information domain. Students will learn to model hierarchical information structures using XML, to design software solutions using the object-oriented approach, to visually model systems using UML, to implement software solutions using a contemporary programming language, and to test these software solutions. Additional topics include thinking in object-oriented terms, and problem definition. Programming projects will be required.

GCCIS-ISTE-121 Computer Problem Solving – Info Domain II
A second course in using the object-oriented approach to solving problems in the information domain. Students will learn: basic design principles and guidelines for developing graphical user interfaces, and use of the Event Model to implement graphical interfaces; algorithms for processing data structures; multithreading concepts and use of the Multithreading Model to design and implement advanced processing methods. Additional topics include the relational model of information organization, and the Client-Server model. Individual implementation projects are required. A team implementation exercise is used to provide students an opportunity to apply basic software development and project management practices in the context of a medium-scale project. (ISTE-120)

GCCIS-ISTE-140 Web & Mobile I
This course provides students with an introduction to Internet and Web technologies, and to development on Macintosh/UNIX computer platforms. Topics include Internet transport protocols and security methods, XHTML and CSS, multimedia, Web page design and Web site publishing. Emphasis is placed on fundamentals, concepts and standards. Additional topics include the user experience, mobile design issues, and copyright/intellectual property considerations. Exercises and projects are required.

GCCIS-ISTE-240 Web & Mobile II
This course builds on the basics of web page development that are presented in Web & Mobile I and extends that knowledge to focus on theories, issues, and technologies related to the design and development of web sites. An overview of web design concepts, including usability, accessibility, information architecture, and graphic design in the context of the web will be covered. Introduction to web site technologies, including HTTP, web client and server programming, and dynamic page generation from a database also will be explored. Development exercises are required. (ISTE-120, ISTE-140;)

GCCIS-ISTE-252 Foundations of Mobile
This course is an introduction to designing, prototyping, and creating applications and Web Apps for mobile devices. These devices include a unique set of hardware and communications capabilities, incorporate novel interfaces, are location aware, and provide persistent connectivity. Topics covered include user interaction patterns, connectivity, interface design, software design patterns, and application architectures. Programming projects are required. (ISTE-240).

**GCCIS-ISTE-500 Senior Development Project I**
The first course in a two-course, senior level, system development capstone project. Students form project teams and work with sponsors to define system requirements. Teams then create architectures and designs, and depending on the project, also may begin software development. Requirements elicitation and development practices introduced in prior coursework are reviewed, and additional methods and processes are introduced. Student teams are given considerable latitude in how they organize and conduct project work. (completion of co-op requirement)

**GCCIS-ISTE-501 Senior Development Project II**
The second course in a two-course, senior level, system development capstone project. Student teams complete development of their system project and package the software and documentation for deployment. Usability testing practices introduced in prior coursework are reviewed, and additional methods and processes are introduced. Teams present their developed system and discuss lessons learned at the completion of the course. (ISTE-500)

**CONCENTRATIONS:**

**NMDE-201 New Media Design Elements II**
Information design for static, dynamic and interactive multimedia integrates content with visual indicators. Legibility and clear communication of information and direction is important to the success of any user interface design. This course integrates imagery, type, icons, actions, color, visual hierarchy, and information architecture as a foundation to design successful interactive experiences.

**NMDE-203 New Media Interactive II**
This course extends previous interactive design and development experience and skills to emphasize interactive design principles and development. The emphasis in this course will be on the creative process of planning and implementing an interactive project across multiple platforms. Students will concentrate on information architecture, interactive design, conceptual creation, digital assets, visual design and programming for interactions.

**NMDE-302 New Media Design Graphical User Interface**
This course examines the user-centered and iterative design approaches to application and interactive development with a focus on interface design, testing and development across multiple devices. Students will research and investigate human factors, visual metaphors and prototype development to create effective and cutting edge user interfaces.

**CLA-PSYC-235 Learning & Behavior**
This course covers topics in learning such as non-associative learning, classical conditioning, instrumental conditioning, stimulus control of behavior, reinforcement, generalization and discrimination, and observational learning. Topics on learning and behavior in non-human animals may also be covered.

**CLA-PSYC-330 Memory & Attention**
This course reviews current research in the areas of memory and attention. This course will consider such memory topics as: the classic three stores theory of memory and Baddeley’s model of working memory, information processing, implicit and explicit memory, principles of forgetting, developmental changes in memory, skill memory, autobiographical memory, eyewitness memory, and the neural bases of memory. Attention topics covered in this course will include: Selective and divided attention, search and vigilance, signal detection theory, and neural correlates of attention.

CLA-PSYC-331 Language & Thought
This course is intended for students in the Cognitive Processing track. This course examines the structure of human language and its relationship to thought, and surveys contemporary theory and research on the comprehension and production of spoken and written language. In addition, we will discuss categorization, representation of knowledge, expertise, consciousness, intelligence, and artificial intelligence. Topics on language and thought in non-human animals may also be covered.

CLA-PSYC-332 Decision, Judgments, & Problem Solving
This course explores judgment and decision-making and problem-solving processes and focuses on the social and cognitive aspects of complex information processing. Major topics include normative, descriptive (heuristics and biases), and naturalistic approaches to decision-making, as well as selective perception, memory and hindsight biases, framing effects, heuristics, social influences, group processes and human error. Formal, normative models of decision-making considered include the prospect theory, expected utility theory, and Bayes’ Theorem. Problem solving will be examined from perspectives of formal, computational methods as well as intuition and creativity. Experimental methods in the research of judgment and decision-making and problem-solving and applications in design of systems and decision aids will receive special attention.

GCCIS-ISTE-340 Client Programming
This course will explore the analysis, design, development, and implementation of client-side programming in the context of Internet technologies, mobile devices, Web-based client systems and desktop applications. Students will learn to design and build usable and effective interactive systems, clients, and interfaces. Key features addressed will include browser and platform compatibility, object reusability, bandwidth and communications issues, development environments, privacy and security, and related technologies and APIs. Programming is required. (ISTE-240)

GCCIS-ISTE-454 Mobile Application Development I
This course extends the material covered in the Foundations of Mobile Design course and provides students with a team-based experience of creating interesting applications and web apps for small-size form factor mobile devices such as smartphones. These devices are exceptionally portable, have unique sets of hardware and communications capabilities, incorporate novel interfaces, are location aware, and provide persistent connectivity. Students are encouraged to make creative use of these unique device characteristics and operating properties to develop innovative applications. Programming projects are required. (ISTE-252; ISTE-341 or instructor permission)

GCCIS-ISTE-456 Mobile Application Development II
This course extends the Mobile Application Development I experience to medium-size form factor mobile devices such as slates and tablets. Compared to smartphones, these devices have much larger screen areas, and have the potentials for more processing power, higher capacity memories, additional sensors, and higher capacity batteries. Students are encouraged to make creative use of these increased display and computing resources to develop innovative applications. Programming projects are required. (ISTE-454 or instructor permission)

GCCIS-ISTE-392 Fundamentals of Instructional Technology
Instructional Technology encompasses the basic processes for developing and delivering instruction. Instructional Systems Design (ISD) is a well-established methodology for describing knowledge and skills and developing instructional systems to effectively conveying knowledge. This course enables the student to be able to plan, organize, and systematically develop instructional materials. The course uses an ISD model to analyze, design, deliver, and evaluate instruction.

GCCIS-ISTE-394 Interactive Courseware
Computer software that teaches is referred to as courseware. This course is a continuation of Fundamentals of Instruction Technology (ISTE-392), and serves as a transition from general instructional design principles to the actual application of these principles in a computer-based environment. Although the basic principles of instructional design hold true in all media environments, using these teaching and learning principles is somewhat different when developing instruction that will be delivered by computer. This course teaches procedures that already have been successful in the design and development of courseware. (ISTE-392, ISTE-121 or equivalent programming background)

CLA-ENGL-351 Language Technology
We will explore the relationship between language and technology from the invention of writing systems to current natural language and speech technologies. Topics include script decipherment, machine translation, automatic speech recognition and generation, dialog systems, computational natural language understanding and inference, as well as language technologies that support users with language disabilities. We will also trace how science and technology are shaping language, discuss relevant artificial intelligence concepts, and examine the ethical implications of advances in language processing by computers. Students will have the opportunity to experience text analysis with relevant tools. This is an interdisciplinary course and technical background is not required.

CLA-ENGL-481 Introduction to Natural Language Processing
This course provides theoretical foundation as well as hands-on (lab-style) practice in computational approaches for processing natural language text. The course will have relevance to various disciplines in the humanities, sciences, computational, and technical fields. We will discuss problems that involve different components of the language system (such as meaning in context and linguistic structures). Students will additionally collaborate in teams on modeling and implementing natural language processing and digital text solutions. We will program in Python and use the Natural Language Toolkit and related tools (such as Weka). Required previous coursework: Language Technology or a programming class (or a similar course with instructor’s consent).

CLA-ENGL-582 Advanced Topics in Computational Processing
Study of a focus topic of increased complexity in computational linguistics. The focus topic varies each semester. Students will develop skills in computational linguistics analysis in a laboratory setting, according to professional standards. A research project plays a central role in the course. Students will engage with relevant research literature, research design and methodology, project development, and reporting in various formats. Prerequisite: Introduction to Natural Language Processing or instructor’s consent.

f) For all new courses, provide course outlines in the major using RIT’s New or Revised Course Outline Form (Form is available in Appendix A of proposed guidelines and also on Academic Affairs Website). Course outlines should include a course description, course credit, objectives, topics, student outcomes, texts/resources and basis for determining grades.
Please see appendix A for the complete course outlines of the following courses.

Core:

**NMDE-111 New Media Design Digital Survey I**
This project-based course is an investigation of the computer as an illustrative, imaging, and graphical generation tool. It develops foundational design skills in raster and vector image creation, editing, compositing, layout and visual design for online production. Emphasis will be on the application of visual design organization methods and principles for electronic media. Students will create and edit images, graphics, layouts and typography to form effective design solutions for online delivery.

**NMDE-112 New Media Design Digital Survey II**
Through formal studies and perceptual understanding, including aesthetics, graphic form, structure, concept development, visual organization methods and interaction principles, students will design graphical solutions to communication problems for static and interactive projects. Students will focus on creating appropriate and usable design systems through the successful application of design theory and best practices. Assignments exploring aspects of graphic imagery, typography, usability and production for multiple digital devices and formats will be included.

**ISTE-262 Foundations of HCC**
This course explores how the fields of psychology, digital design, and computing converge in the design, development, and evaluation of new technologies that people find effective and enjoyable to use. Students will investigate the field of human-computer interaction (HCI), with a focus on how users' various sensory, motor, and cognitive abilities are essential to their successful use of technology. Students will be exposed to modern research methods and paradigms in field of human-computer interaction, including predictive modeling, heuristic evaluation, interpretive methods, and experimental user testing. Students will learn key design principles and guidelines and apply them to analyze existing designs and conduct a design process that is centered on human users of technology.

**ISTE-264 Prototyping & Usability Testing**
This course will explore how modern human centered computing design and evaluation methodologies can be effectively used to create high-quality and usable technologies for a variety of users. Students will learn how an initial design can be evaluated and improved through the use of prototyping and user evaluations. Students will investigate a variety of high- and low-fidelity prototyping techniques, plan an iterative design process for an application, conduct an evaluation of a prototype, and analyze the results of user testing to drive a design process. Programming is required.

**ISTE-266 Designing for Accessibility**
This course will explore the design, evaluation, and use of computing and information technologies to benefit people with disabilities and older adults. Students will learn how to analyze the accessibility of existing software or websites, and they will learn how to design technology that can be effectively, enjoyably, and efficiently used by people with diverse sensory, motor, and cognitive abilities. Students will learn about cutting-edge ways in which science and technology has provided assistance and accessibility for people with disabilities. Students will learn how to investigate the needs of users with disabilities, design technologies according to universal design or
accessibility principles, interpret key accessibility regulations and guidelines, and include people with disabilities in the design and evaluation of new technologies. Programming is required.

Concentrations:

**ISTE-362 Access & Assistive Technology**
Students will gain hands-on experience and knowledge about a wide variety of accessibility and assistive technology available for people with disabilities. Students will understand the design principles underlying this technology and how the features and capabilities of assistive technology can be tailored to a particular individual’s needs and capabilities. Students will learn about how new technologies and research in accessibility can be made available for users, and they will learn how to design websites and software that work effectively with a user’s own technology. Specific technologies discussed in the course may include, e.g.: alternative input devices, communication devices, and screen readers and magnifiers for people with visual impairments. Programming is required.

**ISTE-462 Research in Accessibility**
Students will dive into cutting edge research in the field of computer accessibility and assistive technology; they will read, present, and discuss research literature from major conferences and journals in the field. Students will learn about recent developments and ongoing research efforts in accessibility, and they will learn how to synthesize the results from research publications. Students will learn how to identify high quality research and how to critique this work to identify areas for improvement or future research directions. Students will learn the elements of a high-quality research publication, and they will explore and gain expertise in a particular topic in the field of accessibility in depth.

**ISTE-464 Accessibility Through The Lifespan**
Students will explore how accessibility and assistive technologies intersect with aging throughout the lifespan, with a particular focus on the early and later stages of human development, including: educational contexts (for children or young adults) and effective design strategies for promoting accessibility for older adults with diverse capabilities. Students will learn key legal regulations that govern special education and accessibility in educational contexts, including the provision of assistive technologies and the accessibility of instructional technologies. Students will also explore typical changes in ability and impairments that relate to the human aging process, and they will investigate how to design usable and engaging technology for the growing population of older adults. Students will come to understand the concepts and needs of younger and older users firsthand through, e.g., guest speakers or personal interactions.
3. Faculty

a) Provide information on Full-time faculty, Part-time faculty and Faculty to be hired in the Program using Tables 2, 3, and 4. 

Note: Full faculty Curricula Vitae must be included in Appendix F.

Table 2: Current Faculty, Full-Time

- Provide information on faculty members who are full-time at the institution and who will be teaching each course in the major field or graduate program. *Include and identify the Program Director.

<table>
<thead>
<tr>
<th>Faculty Member Name and Title/Rank at Institution (include and identify Program Director)</th>
<th>Expected Program Course Assignments</th>
<th>Percent of Teaching Time to Program</th>
<th>Highest and Other Applicable Earned Degrees and Disciplines (include College/University)</th>
<th>Additional Qualifications: list related certifications/licenses; professional experience in field, scholarly contributions, other academic affiliations</th>
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### New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

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<tr>
<th>Instructor</th>
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<th>Course Names</th>
<th>Credits</th>
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<th>Experience/Qualifications</th>
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<tbody>
<tr>
<td>Ashbrook, Dan</td>
<td>ISTE-264, ISTE-266</td>
<td>Prototyping &amp; Usability Testing, Designing for Accessibility</td>
<td>20%</td>
<td>PhD Computer Science, Georgia Institute of Technology</td>
<td>Senior Researcher, Samsung Labs. Senior Researcher II, Nokia Research Center.</td>
</tr>
<tr>
<td>Beaton, Cathy</td>
<td>ISTE-110</td>
<td>Ethics in Computing (First Year Writing Intensive)</td>
<td>10%</td>
<td>MS Information Technology Education, Dalhousie University</td>
<td>Multiple publications in accessibility, primarily in Deaf/Hard of Hearing.</td>
</tr>
<tr>
<td>Bogaard, Dan</td>
<td>ISTE-340</td>
<td>Client Programming</td>
<td>10%</td>
<td>MS Information Technology, RIT</td>
<td>Eisenhart Award for Outstanding Teaching – 2011. Multiple publications in accessibility &amp; web security.</td>
</tr>
<tr>
<td>French, Bryan</td>
<td>ISTE-454, ISTE-456, ISTE-452</td>
<td>Mobile Application Development I, Mobile Application Development II, Foundations of Mobile</td>
<td>20%</td>
<td>MS Computer Science, RIT</td>
<td>15+ years of industry experience developing web and mobile applications.</td>
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<tr>
<td>Gears, Deb</td>
<td>ISTE-262, ISTE-362</td>
<td>Foundations of HCC, Access &amp; Assistive Technology</td>
<td>20%</td>
<td>PhD Information Systems, Nova Southeastern University</td>
<td>Multiple publications on behaviors exhibited in Wikis.</td>
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<tr>
<td>Name</td>
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<td>Experience/Recognitions</td>
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<tr>
<td>-Associate Professor</td>
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<tr>
<td>Kang, Jai</td>
<td>ISTE-120 Comp Prob Solving – Info Domain I</td>
<td>20%</td>
<td>PhD Operations Research, SUNY Buffalo</td>
<td>Multiple scholarly works in Database, the Cloud and Data Warehousing.</td>
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<tr>
<td>-Associate Professor</td>
<td>ISTE-121 Comp Prob Solving–Info Domain II</td>
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<tr>
<td>LaBelle, Deb</td>
<td>ISTE-454 Mobile Application Development I</td>
<td>10%</td>
<td>PhD Information Science and Technology, Drexel University</td>
<td>Multiple scholarly works in pedagogy and including females into technological degrees.</td>
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<tr>
<td>-Lecturer</td>
<td>ISTE-456 Mobile Application Development II</td>
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<td></td>
<td>ISTE-252 Foundations of Mobile</td>
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<tr>
<td>Lasky, Jeffrey</td>
<td>ISTE-500 Senior Development Project I</td>
<td>10%</td>
<td>MS Information Systems, University of Minnesota</td>
<td>Multiple scholarly works in technology &amp; healthcare as well as software quality measurements &amp; methodologies.</td>
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<tr>
<td>-Professor</td>
<td>ISTE-501 Senior Development Project II</td>
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<tr>
<td>Vullo, Ron</td>
<td>ISTE-140 Web I</td>
<td>20%</td>
<td>PhD Science Education, SUNY Buffalo</td>
<td>Multiple scholarly works in simplifying web applications.</td>
<td></td>
</tr>
<tr>
<td>-Associate Professor</td>
<td>ISTE-240 Web II</td>
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<tr>
<td>Yacci, Michael</td>
<td>ISTE-392 Fund Instruct Tech</td>
<td>20%</td>
<td>PhD Instructional Design, Development, and Evaluation, Syracuse University</td>
<td>Eisenhart Award for Outstanding Teaching – 1999 Multiple scholarly works in Active Learning &amp; Knowledge Management.</td>
<td></td>
</tr>
<tr>
<td>-Professor</td>
<td>ISTE-394 Interactive Courseware</td>
<td></td>
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</tr>
<tr>
<td>Zilora, Steve</td>
<td>ISTE-500 Senior Development Project I</td>
<td>10%</td>
<td>M.S. Computer Science, New Jersey Institute of Technology</td>
<td>Multiple scholarly works in pedagogy. 25+ years of industrial experience developing applications.</td>
<td></td>
</tr>
<tr>
<td>-Associate Professor</td>
<td>ISTE-501 Senior Development Project II</td>
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New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

<table>
<thead>
<tr>
<th>Name</th>
<th>Courses</th>
<th>Credit Hours</th>
<th>Degree Requirements</th>
<th>Specialization/Research Area</th>
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<tbody>
<tr>
<td>Tina Sutton</td>
<td>PSYC-223 Cognitive Psychology, PSYC 331–Language &amp; Thought</td>
<td>10%</td>
<td>PhD Cognitive Psychology, University at Albany, State University of New York</td>
<td>2nd language learning and mastery, emotion perception in hearing and the deaf.</td>
</tr>
<tr>
<td>Andrew Herbert</td>
<td>PSYC 330–Memory &amp; Attention</td>
<td>10%</td>
<td>PhD Psychology, University of Western Ontario</td>
<td>PostDoctoral fellow in Optometry and Vision Science, Publishing on attention, eye-tracking and perceptual aging.</td>
</tr>
</tbody>
</table>
New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

Table 3: Current Faculty, Part-Time

Provide information on faculty members who are part-time at the institution and who will be teaching each course in the major field or graduate program.

There are no current, part-time faculty.

Table 4: Faculty to be Hired

- If faculty must be hired in the proposed program, specify the title/rank of each new position, the number of new positions, full-time or part-time status, a listing of the expected course assignments for each position, and the expected hiring date.
- Position descriptions and/or announcements may also be submitted.
- Prior to offering the assigned courses, the Department must be notified that a faculty meeting the requirements has been hired.
- These proposed faculty should be reflected in Task 5, Table 5, New Resources

Full-time Faculty

<table>
<thead>
<tr>
<th>Title/Rank of Position</th>
<th># of New Positions</th>
<th>Minimum Qualifications (including degree and Discipline area)</th>
<th>Expected course Assignments</th>
<th>Expected Hiring Date (mm/dd/yy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer</td>
<td>1</td>
<td>MS in a computing-related field with significant work in web and mobile computing</td>
<td>ISTE-454 Mobile Application Development I  ISTE-456 Mobile Application Development II  ISTE-252 Foundations of Mobile  ISTE-240 Web &amp; Mobile II  ISTE-340 Client Programming</td>
<td>Fall 2017</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>1</td>
<td>PhD in a computing- or design-related field with significant work in accessibility and user interaction</td>
<td>ISTE-262 Foundations of HCC  ISTE-362 Access &amp; Assistive Technology  ISTE-464 Accessibility through the Lifespan</td>
<td>Fall 2016</td>
</tr>
<tr>
<td>Lecturer</td>
<td>1</td>
<td>BFA in an interactive or graphic design-related field with significant work in web and mobile user experience and</td>
<td>NMDE-111 New Media Design Digital Survey I  NMDE-112 New Media Design</td>
<td>.05 FTE for FY15-16 &amp; FTE FY16-17, 1.0 FTE for FY17-18</td>
</tr>
</tbody>
</table>
### Part-time Faculty

<table>
<thead>
<tr>
<th>Title/Rank of Position</th>
<th># of New Positions</th>
<th>Minimum Qualifications (including degree and Discipline area)</th>
<th>Expected course Assignments</th>
<th>Expected Hiring Date (mm/dd/yy)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

*There is no need for part-time faculty.*
4. Financial Resources and Instructional Facilities
   
   a) Summarize the instructional facilities and equipment needed to ensure the success of the program including:

   1. Space – Summarize space needs and incremental costs. Please review Division of Academic Affairs Policy and Procedures for Allocation and Utilization of Space (available on Academic Affairs Website) and complete Allocation for Space Request Form found in Appendix E.

   All space needs are fulfilled with existing facilities within the Department of Information Sciences and Technologies.

   2. If this program will share lab or studio space/equipment with other programs, please note that here and provide documentation of agreement in Appendix C.

   Not Applicable.

   3. Equipment (renewal / replacement costs and schedule)

   Within the program financial projections, $53,000 for computer equipment is required in the first year and another $100,000 in the third year.

   4. Computer facilities

   All Computer Facility needs are fulfilled within the Department of Information Sciences and Technologies.

   5. Other space and equipment

   Not Applicable.

   b) Complete Table 5 after consultation with RIT Finance and Administration and the preparation by them of the new program financial projections (see Appendix G). These projections include incremental resources needed including personnel (faculty and support personnel [administrative, secretarial, technical, teaching/research assistants]), General Education sections needed, library, equipment, laboratories, supplies and expenses; capital expenditures.
Table 5: New Resources

List the costs of the **new** resources that will be engaged specifically as a result of the new program (e.g., a new faculty position or additional library resources). New resources for a given year should be carried over to the following year(s), with adjustments for inflation, if they represent a continuing cost.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>152,294</th>
<th>428,648</th>
<th>574,043</th>
<th>569,234</th>
<th>589,100</th>
<th>2,313,319</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>4,720</td>
<td>9,550</td>
<td>13,920</td>
<td>18,240</td>
<td>18,690</td>
<td>65,120</td>
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<tr>
<td>Equipment</td>
<td>6,000</td>
<td>6,150</td>
<td>6,304</td>
<td>6,461</td>
<td>6,623</td>
<td>31,538</td>
</tr>
<tr>
<td>Laboratories</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Supplies &amp; Expenses</td>
<td>9,339</td>
<td>58,904</td>
<td>47,938</td>
<td>25,785</td>
<td>27,454</td>
<td>170,419</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>10,600</td>
<td>52,363</td>
<td>54,830</td>
<td>30,600</td>
<td>30,600</td>
<td>178,693</td>
</tr>
<tr>
<td>Other</td>
<td>65,721</td>
<td>148,665</td>
<td>254,787</td>
<td>278,369</td>
<td>288,526</td>
<td>1,037,069</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>248,674</strong></td>
<td><strong>705,280</strong></td>
<td><strong>951,821</strong></td>
<td><strong>929,689</strong></td>
<td><strong>960,963</strong></td>
<td><strong>3,796,457</strong></td>
</tr>
<tr>
<td><strong>AUDIT</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
5. Library Resources

a) Summarize the analysis of library resources for this program by the collection librarian and program faculty. Include an assessment of existing library resources and their accessibility to students.

The library reviewed the proposal and determined that the proposed B.S. in Human-Centered Computing program will have a minimal impact on the library’s services and collections. The new program is making no requests for new books, new journal titles, or new database subscriptions. The RIT Libraries’ current interdisciplinary collection of journals, books, and databases already supports the M.S. program in Human Computer Interaction, as well as programs in New Media Design and Psychology.

b) Describe the institution’s response to identified needs and its plan for library development.

There are no additional needs for library development.

Note: Include a supporting letter from appropriate RIT librarian in Appendix C that addresses 5a; and 5b) above and includes a summary of present holdings and a list of required new acquisitions with cost estimate.
6. Admissions and Enrollment

a) List all program admissions requirements for the proposed program

   - **Undergraduate programs**: SAT, ACT, high school GPA, transfer GPA, TOEFL score for international students, special requirements (e.g., portfolio).

   - Admission for high school graduates will be consistent with the policies and practices of Undergraduate Admissions within the Division of Enrollment Management.
     - The projections are based upon an assessment of the College Board’s Student Search Service data using the following parameters to determine the level of interest in the student market: Combined PSAT scores at 110 or higher, high school grades of B+ or higher, and high school class rank in the top quartile of the graduating class. Entering transfer students would generally present a GPA of 3.0 or higher for admission.
   - Borderline transfer student applications can be reviewed by the Program Coordinator. A minimum of a 3.0 GPA is desired in pertinent coursework.
   - International students: As per RIT policy D2, ‘The U.S. Government expects international students to prove competency in the English language prior to their acceptance to an American college or university. In keeping with this expectation, students whose native language is not English and who’s secondary or higher education was completed in a non-native English speaking country must take a test of English language proficiency. Students must achieve the following minimum scores prior to consideration for admission: 550 paper-based or 79 internet-based on the Test of English as a Foreign Language (TOEFL), or 6.5 on the International English Language Testing System (IELTS) or 58 on the Pearson Test of English-Academic.’

b) Describe the process for evaluating exceptions to admission requirements

   Admission to this BS program will be consistent with the policies and practices of Undergraduate admissions within the Division of Enrollment Management.

c) How will institution encourage enrollment by persons from groups historically described as underrepresented in the discipline or occupation?

   Within the Information Sciences & Technologies Department, the HCI MS degree has shown enrollment of 44% women. This number is far above the recruitment numbers of women in computing throughout GCCIS. The interdisciplinary foundation of this degree, drawing from Design and Psychology, both of which attract significant numbers of female undergraduates, will serve to ensure diversity of enrollment in terms of gender.
New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

7. Academic Support Services
Summarize the academic support services available to help students succeed in program. Please include a summary of the advising system to be used in this program, including a list of professional staff advisors and faculty and the anticipated ratio of advisors to students.

Included in the support staff within the department is ¼ of a full time academic advisor. This advisor is available to meet with students in person, by telephone, email or through other types of communication such as Skype for the purpose of advising. An advising plan will be developed for each accepted student reflecting the timeline to graduation the student believes is realistic for them to pursue. This plan will be updated periodically to reflect the student’s current circumstances. Faculty are available online and in person for career counseling as requested by students. The HCC program will adhere to the GCCIS Student Success model regarding advising, retention, and support.
8. External Review of Graduate Programs

If the proposal is a graduate degree program below the doctoral level, submit a copy of an evaluation of the program by a recognized expert in the field who has been approved in advance by the State Education Department. In addition, submit the institution’s response to the evaluation and highlight how the proposal was modified in response to the reviewer’s comments. (Confer with Senior Associate Provost about choosing external reviewer and gaining NYSED approval).

Not Applicable

9. Credit for Experience

If this program will grant substantial credit for learning derived from experience, describe the methods of evaluating the learning and the maximum number of credits allowed.

Not Applicable
10. Program Assessment and Improvement

Summarize the plan for program level outcomes assessment including how data from assessment will inform program improvement. See Academic Program Assessment/Program Level Outcomes Assessment plan.

1. Program Level Outcomes Assessment: Provide the program’s outcomes assessment plan, displaying:
   a. Program Objectives
   b. Anticipated program outcomes
   c. For each program level outcome include:
      ▪ assessment method/measure to be used
      ▪ criteria
      ▪ achievement level
      ▪ benchmark
      ▪ assessment schedule data collection
      ▪ plan for reviewing, disseminating and acting upon results to inform, program improvement

2. Indicate on Program Level Assessment Plan how program outcomes map to RIT’s Academic Profile Essential Learning Outcomes:
   https://www.rit.edu/academicaffairs/academicprogrammgmnt/sites/rit.edu.academicaffairs.academicprogrammgmnt/files//images/rit_academic_program_profile_05-20-2010.pdf

3. Accreditation and Program Review
   a. List any external organizations (excepting NYSED and Middle States) that will evaluate/accredit the program (e.g., accrediting agency, professional society).
   b. How frequently will the accreditation evaluation occur?
   c. Indicate how the program has been designed to meet the criteria of that accrediting agency by providing a comparison of the requirements of the accrediting agency with those of the program.
   d. Indicate plan for ongoing & formal periodic academic program review
# Program Level Outcomes Assessment Plan

**Program Name/College:** Human-Centered Computing, GCCIS/COLA/CIAS  
**College Contact for Program Assessment:** Michael Yacci

<table>
<thead>
<tr>
<th>Program Goals</th>
<th>Student Learning Outcomes</th>
<th>Academic Program Profile</th>
<th>Data Source/Measure Curriculum Mapping</th>
<th>Benchmark</th>
<th>Timeline</th>
<th>Data Analysis Key Findings</th>
<th>Use of Results Action Items and Dissemination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please List program-level goals</td>
<td>Students will be able to: (task, capability, knowledge, skills, and dispositions) Use measurable verbs.</td>
<td>Alignment to the five RIT essential outcomes - check all that apply</td>
<td>Assessment opportunity (course/experience) method/measures, assignment/ rubric)</td>
<td>Standard, target, or achievement level (usually a %) Statement of student Success</td>
<td>Identify when and how data are collected, aggregated, and analyzed</td>
<td>Identify who is responsible and list key findings</td>
<td>Identify how results are used and shared. List any recommendations or action items</td>
</tr>
</tbody>
</table>
| Gather user, client, and system needs/data and translate into technical and aesthetic specifications and requirements. | Work with clients through face-to-face or mediated communication channels to determine client needs | Critical Thinking  
Ethical Reasoning  
Integrative Literacies  
Global Interconnectedness  
Creative/Innovative Thinking | ISTE-500 Senior Project Needs assessment and Design Document | 80% of students will create requirements document that conforms to professional standards for documentation and project planning | Requirements document is scored using rubric. Year 1 of 2-year assessment cycle. Course is sampled once during cycle. | Program Coordinator | HCC Faculty meeting. Results posted on Taskstream. |
| Design interfaces and interactions  
Based on research, aesthetic, and accessibility design principles | Use current computer-based tools to design interactions and program web-based interfaces | Critical Thinking  
Ethical Reasoning  
Integrative Literacies  
Global Interconnectedness  
Creative/Innovative Thinking | NMDE-111 New Media Digital Design Design Project I | 80% of students will achieve competency on project that is functional, follows interface design principles and meets aesthetic requirements | Project is scored using rubric addressing aesthetic standards, functionality. Year 2 of 2-year assessment cycle. Course is sampled once during cycle. | Program Coordinator | HCC Faculty meeting. Results posted on Taskstream. Results to be shared with Digital Design instructors |
| Develop and assess prototypes that meet the aesthetic and | Given a set of functional and aesthetic requirements for | Critical Thinking  
Ethical Reasoning  
Integrative Literacies  
Global Interconnectedness | ISTE-264 Prototyping & Usability Testing Project Develop Prototypes. | 80% of students will achieve an average of 80% competency | Project is scored using rubric addressing aesthetic | Program Coordinator | HCC Faculty meeting. Results posted on Taskstream |
<table>
<thead>
<tr>
<th>Requirement</th>
<th>Course</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional requirements of a client.</td>
<td>PSYC-251 Research Methods II Project</td>
<td>3</td>
<td>Develop a series of prototypes that successively approximate the final project as described in the requirements.</td>
</tr>
<tr>
<td>Evaluate user interfaces and user experiences, through a variety of techniques and methodologies.</td>
<td>ISTE-262 Foundations of HCC Written project</td>
<td>3</td>
<td>Design experiments to determine the effect of interface design variables within computing systems.</td>
</tr>
<tr>
<td>Students can use qualitative and survey techniques to investigate a given interface issue</td>
<td>ISTE-501 Senior Development Project</td>
<td>3</td>
<td>Qualitative project will include data collection questionnaire development.</td>
</tr>
<tr>
<td>Utilize effective written, visual, and oral professional communication skills</td>
<td>ISTE-501 Senior Development Project</td>
<td>3</td>
<td>Write professional project reports that conform to common business standards of clarity, conciseness, and vocabulary.</td>
</tr>
</tbody>
</table>
## New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

<table>
<thead>
<tr>
<th>Use visualization techniques and presentation design techniques in the design and delivery of project progress reports</th>
<th>Student will achieve 80% acceptable ratings on oral progress reports.</th>
<th>Instructor assessment via rubric and student (peer) evaluation. Year 1 of 2-year assessment cycle. Course is sampled once during cycle.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe emerging technologies and explore possibilities for usage</td>
<td>Describe current computing technologies and trends, and create scenarios for their use</td>
<td>ISTE-266 – Design for Accessibility Class project describes scenarios for potential computing systems and potential users.</td>
<td>80% of students will achieve competency on scenario project</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Program Coordinator</td>
</tr>
</tbody>
</table>
11. New/Emerging Field and Allied Health Areas (Undergraduate Degree Programs)
If the proposal for an undergraduate degree falls into any of the following categories, submit a copy of an evaluation* of the program by a recognized expert in the field who has been approved in advance by the State Education Department.

Not applicable

12. Transfer to Baccalaureate Programs
If the program will be promoted as preparing students for transfer to a baccalaureate program, provide a copy of an articulation agreement with at least one institution.

Not applicable

13. Application for Distance Education
If 50% or more of the program will be offered in distance education format, you must complete the Application for Distance Education

Not applicable
Appendices A-J on succeeding pages:

- Appendix A – New or Revised Course Outline Form
- Appendix B – Enrollment and Market Analysis
- Appendix C – Internal Letters of Support
- Appendix D – Program Need and marketability: Evidence and Letters of Support
- Appendix E – Space Allocation/Renovation Request
- Appendix F – Full Faculty CV’s
- Appendix G – Cost Model: Revenue / Cost Projections / Expenses
APPENDIX A

New or Revised Course Outline Form(s)
You will find the COF’s for the listed courses below included in subsequent pages.

Core:

NMDE-111 New Media Design Digital Survey I
NMDE-112 New Media Design Digital Survey II
ISTE-262 Foundations of HCC
ISTE-264 Prototyping & Usability Testing
ISTE-266 Designing for Accessibility

Concentrations:

ISTE-362 Access & Assistive Technology
ISTE-462 Research in Accessibility
ISTE-464 Accessibility Through The Lifespan
New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

ROCHESTER INSTITUTE OF TECHNOLOGY
COURSE OUTLINE FORM

COLLEGE OF IMAGING ARTS AND SCIENCES

School of Design-New Media Design Dept.

NEW COURSE: CIAS-NMDE-111-NewMediaDesignDigitalSurveyI

1.0 Course Designations and Approvals

<table>
<thead>
<tr>
<th>Required course approvals</th>
<th>Approval request date</th>
<th>Approval granted date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Unit Curriculum Committee</td>
<td>September 10, 2014</td>
<td>September 10, 2014</td>
</tr>
<tr>
<td>College Curriculum Committee</td>
<td>September 24, 2014</td>
<td>September 24, 2014</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional designations:</th>
<th>Is designation desired?</th>
<th>*Approval request date</th>
<th>**Approval granted date</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education:</td>
<td>No X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing Intensive:</td>
<td>No X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honors</td>
<td>No X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.0 Course information:

<table>
<thead>
<tr>
<th>Course title:</th>
<th>New Media Design Digital Survey I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit hours:</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisite(s):</td>
<td>none</td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td>none</td>
</tr>
<tr>
<td>Course proposed by:</td>
<td>Adam Smith</td>
</tr>
<tr>
<td>Effective date:</td>
<td>Fall 2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact hours</th>
<th>Maximum students/section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>2</td>
</tr>
<tr>
<td>Lab</td>
<td>3</td>
</tr>
<tr>
<td>Studio</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>

2.a Course Conversion Designation*** (Please check which applies to this course).
*For more information on Course Conversion Designations please see page four.

<table>
<thead>
<tr>
<th>Semester Equivalent (SE) Please indicate which quarter course it is equivalent to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester Replacement (SR) Please indicate the quarter course(s) this course is replacing:</td>
</tr>
<tr>
<td>X New</td>
</tr>
</tbody>
</table>
2.b Semester(s) offered (check “X”)

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
<th>Other</th>
</tr>
</thead>
</table>

All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:

2.c Student Requirements

<table>
<thead>
<tr>
<th>Students required to take this course: (by program and year, as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCCIS-Human Centered Design BS – Year 1, LAS-Digital Humanities BS – Year 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Students who might elect to take the course:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCCIS-Mobile&amp;App. Development BS (TBD), GCCIS-IGME-NMID-BS</td>
</tr>
</tbody>
</table>

*In the sections that follow, please use sub-numbering as appropriate (eg. 3.1, 3.2, etc.)*

3.0 Goals of the course (including rationale for the course, when appropriate):

3.1 Introduce the fundamental creative principles for generating digital content and designs that communicates concise and impactful visual messages.
3.2 Understand the technical principles and tools of digital graphics.
3.3 Introduce principles and methods of visual organization, design and graphic analysis.
3.4 Develop skills that allow the student to decide the best options to generate and output content for digitally based imagery and design.
3.5 Develop visual solutions using observational drawing, sketching, image manipulation as well as photographic techniques and imagination.
3.6 Develop solutions that reflect semiotic concerns of effective communication including aesthetic considerations, appropriate concept development and pragmatic concerns.
3.7 Understand the ethics and copyright issues of digital graphics.

4.0 Course description

**Course Number:** NMDE-111  
**Name of Course - Long Title:** New Media Design Digital Survey I  
**Name of Course - Short Title:** NMD Digital Survey I  
**Pre-requisites:** None  
**Class 2, Lab 3, Credit 3** (F, S)

This project-based course is an investigation of the computer as an illustrative, imaging, and graphical generation tool. It develops foundational design skills in raster and vector image creation, editing, compositing, layout and visual design for online production. Emphasis will be on the application of visual design organization methods and principles for electronic media. Students will create and edit images, graphics, layouts and typography to form effective design solutions for online delivery.

5.0 Possible resources (texts, references, computer packages, etc.)

5.1 Online educational resources (i.e. Lynda.com, Cineversity.com, psdTuts.com)  
5.2 Instructor Handouts and Video Tutorials  
5.3 Computer with appropriate software and Internet access  
5.4 Applicable textbooks (Beyond Photoshop, The Illustrator Wow, Teaching Design)
6.0 Topics (outline): (General questions about the use of capital letters)

6.1 Fundamentals of images
   6.1.1 Vector vs. Raster
   6.1.2 Resolution and size
   6.1.3 Color space and bit-depth (RGB)
   6.1.4 Introduction to raster software work area
   6.1.5 Sketching, drawing and the relation to commercial media
   6.1.6 Bezier Curves, Paths and Anchor Points
   6.1.7 Working with objects and art boards
   6.1.8 Color space and bit-depth (RGB vs. CMYK)
   6.1.9 Introduction to Illustrator work area

6.2 Image capture and saving
   6.2.1 Fundamentals of photography (lighting, depth, color, subject, perspective, time)
   6.2.2 Introduction to camera controls (f-stop, shutter, megapixels)
   6.2.3 How to take photographs (image capture assignment)
   6.2.4 Correcting and enhancing digital photographs (RAW and PS tools)
   6.2.5 Image compressions and file formats for online and storage
   6.2.6 Working with advanced image correcting and enhancing tools

6.3 Image creation and manipulation
   6.3.1 Advanced imaging styles
   6.3.2 Using layers to enhance and combine images
   6.3.3 Advanced imaging styles
   6.3.4 Templates, drawing and tracing
   6.3.5 Brushes and symbols
   6.3.6 Blends, Gradients and Meshes
   6.3.7 Transparencies
   6.3.8 Process for image creation

6.4 Creating graphic elements
   6.4.1 Elements and principles of Graphic Design
   6.4.2 Introduction to layout and grids
   6.4.3 Introduction to Typography
   6.4.4 Introduction to design for interaction
   6.4.5 Online graphics and patterns
   6.4.6 Digital output best practices

6.5 Design and imaging principles
   6.5.1 Selecting, purchasing and using copyright free images for design
   6.5.2 Learning from other artists and designers vs. appropriation
   6.5.3 Ethics, copyright and user responsibilities and liabilities
   6.5.4 Conceptualizing image-based design solutions
   6.5.5 Sketching, drawing and the relation to commercial media
   6.5.6 Use of type in relation to image
   6.5.7 New Media and advertising
   6.5.8 UI and app icons
7.0 Intended course learning outcomes and associated assessment methods of those outcomes (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Demonstrate content creation methods using image and graphical manipulation.</td>
<td>Project</td>
</tr>
<tr>
<td>7.2 Demonstrate effective design solutions using complex imagery, layout and typographical elements.</td>
<td>Project</td>
</tr>
<tr>
<td>7.3 Evaluate the use and effectiveness of imaging, visual design solutions and aesthetic qualities.</td>
<td>Critique</td>
</tr>
<tr>
<td>7.4 Understand and display creative and conceptualization skills through research and documentation.</td>
<td>Presentation</td>
</tr>
<tr>
<td>7.5 Demonstrate visual solutions and content creation for editorial design problems.</td>
<td>Project</td>
</tr>
<tr>
<td>7.6 Apply visual design elements, principles, imagery and layouts to interactive creative problems.</td>
<td>Project</td>
</tr>
<tr>
<td>7.7 Generate effective visual graphics for user interface elements and icons.</td>
<td>Project</td>
</tr>
</tbody>
</table>

8.0 Program outcomes and/or goals supported by this course

8.1 Develop skills and an understanding of processes to solve communication problems through the generation digital imagery and design.

8.2 Apply formal design theory, methodology and practice through the examination of contemporary and historical design.

8.3 Understand the research and interaction design principles needed to organize and display information and multimedia content.

9.0

<table>
<thead>
<tr>
<th>General Education Learning Outcome Supported by the Course, if appropriate</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

10.0 Other relevant information (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)

10.1 Smart classroom for lecture, projector system, Computer Lab with appropriate software and Internet access; supported by GGCIS.
New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

ROCHESTER INSTITUTE OF TECHNOLOGY
COURSE OUTLINE FORM

COLLEGE OF IMAGING ARTS AND SCIENCES

School of Design-New Media Design Dept.

NEW COURSE: CIAS-NMDE-112-NewMediaDesignDigitalSurveyII

1.0 Course Designations and Approvals

<table>
<thead>
<tr>
<th>Required course approvals:</th>
<th>Approval request date:</th>
<th>Approval granted date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Unit Curriculum Committee</td>
<td>September 24, 2014</td>
<td></td>
</tr>
<tr>
<td>College Curriculum Committee</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional designations:</th>
<th>Is designation desired?</th>
<th>*Approval request date:</th>
<th>**Approval granted date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education:</td>
<td>No X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing Intensive:</td>
<td>No X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honors</td>
<td>No X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.0 Course Information:

<table>
<thead>
<tr>
<th>Course title:</th>
<th>New Media Design Digital Survey II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit hours:</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisite(s):</td>
<td>NMDE-111-New Media Design Digital Survey I</td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td>none</td>
</tr>
<tr>
<td>Course proposed by:</td>
<td>Adam Smith</td>
</tr>
<tr>
<td>Effective date:</td>
<td>Fall 2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact hours</th>
<th>Maximum students/section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom</td>
<td>2</td>
</tr>
<tr>
<td>Lab</td>
<td>3</td>
</tr>
<tr>
<td>Studio</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
</tr>
</tbody>
</table>

2.a Course Conversion Designation*** (Please check which applies to this course).
*For more information on Course Conversion Designations please see page four.

<table>
<thead>
<tr>
<th>Semester Equivalent (SE) Please indicate which quarter course it is equivalent to:</th>
<th>Semester Replacement (SR) Please indicate the quarter course(s) this course is replacing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>X New</td>
<td></td>
</tr>
</tbody>
</table>
New Academic Program Proposal for a Bachelor of Science Degree Program in Human-Centered Computing

2.b Semester(s) offered (check “X”)

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
<th>Other</th>
</tr>
</thead>
</table>

All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:

2.c Student Requirements

<table>
<thead>
<tr>
<th>Students required to take this course</th>
<th>Students who might elect to take the course:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GCCIS-Human Centered Design BS – Year 2, LAS-Digital Humanities BS – Year 2</td>
<td>GCCIS-Mobile&amp;App, Development BS (TBD), GCCIS-IGME-NMID-BS</td>
</tr>
</tbody>
</table>

In the sections that follow, please use sub-numbering as appropriate (eg. 3.1, 3.2, etc.)

3.0 Goals of the course (including rationale for the course, when appropriate):

3.1 Develop a stronger understanding of the principles and methods of visual organization, design and graphic analysis.
3.2 Illustrate effective processes of the creative workflow as well as appropriate levels of design focused craftsmanship, literacy and technology.
3.3 Learn how to identify and translate data into static and interactive visual display systems across multiple outputs.

4.0 Course description

- **Course Number:** NMDE-112
- **Name of Course - Long Title:** New Media Design Digital Survey II
- **Name of Course - Short Title:** NMD Digital Survey II
- **Pre-requisites:** NMDE-111-New Media Design Digital Survey I
- **Class, Lab, Credit:** 3, 3, 3 (F,S)

Through formal studies and perceptual understanding, including aesthetics, graphic form, structure, concept development, visual organization methods and interaction principles, students will design graphical solutions to communication problems for static and interactive projects. Students will focus on creating appropriate and usable design systems through the successful application of design theory and best practices. Assignments exploring aspects of graphic imagery, typography, usability and production for multiple digital devices and formats will be included.

5.0 Possible resources (texts, references, computer packages, etc.)

5.1 Typography Design: Form and Communication, and online resources
5.2 Cary Library Fieldtrip and Guest Lecture
5.3 Instructor Handouts
5.4 Adobe Illustrator, Photoshop, InDesign, Internet access
5.5 Digital Resources and Tutorials (Lynda.com)
5.6 Books (Graphic Design Education)
## 6.0 Topics (outline):

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Design, defined</td>
<td></td>
</tr>
<tr>
<td>6.2 Design Elements and Principles</td>
<td></td>
</tr>
<tr>
<td>6.2.1 Gestalt principles</td>
<td></td>
</tr>
<tr>
<td>6.2.2 Unity, conflict, dominance, pattern, attention, harmony, balance, gradation</td>
<td></td>
</tr>
<tr>
<td>6.2.3 Line, form, value, color, texture, shape, size, direction</td>
<td></td>
</tr>
<tr>
<td>6.2.4 Alignment, hierarchy, proximity, contrast, repetition</td>
<td></td>
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<tr>
<td>6.2.5 Color theory</td>
<td></td>
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<tr>
<td>6.3 Creative process</td>
<td></td>
</tr>
<tr>
<td>6.3.1 Problem identification</td>
<td></td>
</tr>
<tr>
<td>6.3.2 Design research</td>
<td></td>
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<tr>
<td>6.3.3 Inspiration/mood boards</td>
<td></td>
</tr>
<tr>
<td>6.3.4 Creative thinking exercises</td>
<td></td>
</tr>
<tr>
<td>6.4 Graphic translation</td>
<td></td>
</tr>
<tr>
<td>6.4.1 Simplification of form</td>
<td></td>
</tr>
<tr>
<td>6.4.2 Graphic marks</td>
<td></td>
</tr>
<tr>
<td>6.4.3 Form vs Function</td>
<td></td>
</tr>
<tr>
<td>6.4.4 Technical and pragmatic consideration</td>
<td></td>
</tr>
<tr>
<td>6.4.5 Effective communication</td>
<td></td>
</tr>
<tr>
<td>6.5 Elements of typography</td>
<td></td>
</tr>
<tr>
<td>6.5.1 Classification of typefaces</td>
<td></td>
</tr>
<tr>
<td>6.5.2 Legibility (type and image)</td>
<td></td>
</tr>
<tr>
<td>6.5.3 Typeface selection</td>
<td></td>
</tr>
<tr>
<td>6.5.4 Color considerations</td>
<td></td>
</tr>
<tr>
<td>6.5.5 Visual hierarchy</td>
<td></td>
</tr>
<tr>
<td>6.6 Factors in the choice of a typeface</td>
<td></td>
</tr>
<tr>
<td>6.6.1 Legibility factors</td>
<td></td>
</tr>
<tr>
<td>6.6.2 Nature of the work</td>
<td></td>
</tr>
<tr>
<td>6.6.3 Type and color characteristics</td>
<td></td>
</tr>
<tr>
<td>6.6.4 Reproduction process involved</td>
<td></td>
</tr>
<tr>
<td>6.7 Grid systems</td>
<td></td>
</tr>
<tr>
<td>6.7.1 Typographic grid</td>
<td></td>
</tr>
<tr>
<td>6.7.2 Modular grid</td>
<td></td>
</tr>
<tr>
<td>6.7.3 Hierarchical grid</td>
<td></td>
</tr>
<tr>
<td>6.8 Design for interaction</td>
<td></td>
</tr>
<tr>
<td>6.8.1 Screen formats and outputs</td>
<td></td>
</tr>
<tr>
<td>6.8.2 User identification and requirement guides</td>
<td></td>
</tr>
<tr>
<td>6.8.3 Sketching interfaces and wireframes</td>
<td></td>
</tr>
<tr>
<td>6.8.4 Introduction to user testing</td>
<td></td>
</tr>
<tr>
<td>6.8.5 Creating style guides (grid, typography, color, graphical styles)</td>
<td></td>
</tr>
<tr>
<td>6.8.6 Preparing assets and output</td>
<td></td>
</tr>
</tbody>
</table>
7.0 Intended course learning outcomes and associated assessment methods of those outcomes (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Demonstrate the simplification, reduction and communication of a complex form into a symbolic interpretation using gestalt and graphic translation principles</td>
<td>Project</td>
</tr>
<tr>
<td>7.2 Identify the anatomy and effectiveness of specific typographic solutions</td>
<td>Critique</td>
</tr>
<tr>
<td>7.3 Develop effective communication solutions through proper selection and use of typography and graphical forms.</td>
<td>Project</td>
</tr>
<tr>
<td>7.4 Evaluate visual design and information solutions through the application of color, shape, line, form, texture, type and layout.</td>
<td>Critique</td>
</tr>
<tr>
<td>7.5 Identify proper information structures, graphical styles and typographical solutions across multiple device outputs</td>
<td>Project</td>
</tr>
<tr>
<td>7.6 Demonstrate an effective use of a grid system within a page layout consisting of typography, graphical forms and interactive assets.</td>
<td>Written</td>
</tr>
<tr>
<td>7.7 Understand the creative design process through problem identification, research, planning, user testing and final design application.</td>
<td>Project</td>
</tr>
</tbody>
</table>

8.0 Program outcomes and/or goals supported by this course

8.1 Develop skills and an understanding of processes to solve communication problems through the creation of digital imagery and design.

8.2 Understand the research and interaction design principles needed to organize and display information and multimedia content.

8.3 Apply formal design theory, methodology and practice through the examination of contemporary and historical design.

8.4 Provide experiential opportunities for innovative multi-disciplinary team-based collaboration.

9.0 General Education Learning Outcome Supported by the Course, if appropriate

<table>
<thead>
<tr>
<th>General Education Learning Outcome Supported by the Course, if appropriate</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>
10.0 **Other relevant information** (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)

10.1 Smart classroom for lecture, projector system, Computer Lab with appropriate software and Internet access; supported by GGCIS.
NEW COURSE GCCIS-ISTE-262-FoundationsOfHCC

TOPIC or SEMINAR title (if applicable):

1.0 Course Designations and Approvals

<table>
<thead>
<tr>
<th>Required course approvals:</th>
<th>Name/Chair:</th>
<th>Approval date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Unit Curriculum Committee</td>
<td>Brian Tomaszewski</td>
<td>9/23/14</td>
</tr>
<tr>
<td>Department Chair/Director Approval</td>
<td>Steve Zilora</td>
<td>9/23/14</td>
</tr>
<tr>
<td>College Curriculum Committee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Optional designations:  
☐ General Education  
☐ Writing Intensive  
☐ Honors

2.0 Course information:

<table>
<thead>
<tr>
<th>Course title:</th>
<th>Foundations of Human Centered Computing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short title: **</td>
<td>FoundationsOfHCC</td>
</tr>
<tr>
<td>Credit hours:</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisite(s): ***</td>
<td>ISTE-120, NMDE-111, ISTE-140</td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td>None</td>
</tr>
<tr>
<td>Course proposed by:</td>
<td>Dan Ashbrook, Deb Gears, Vicki Hanson, Matt Huenerfauth</td>
</tr>
<tr>
<td>Effective date:</td>
<td>Fall Semester, 2015</td>
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</table>

<table>
<thead>
<tr>
<th>Contact hours</th>
<th>Maximum students/section</th>
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<tbody>
<tr>
<td>Classroom</td>
<td>3</td>
</tr>
<tr>
<td>Lab</td>
<td></td>
</tr>
<tr>
<td>Studio</td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
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</table>
2.a Course Information (check one)

<p>| | |</p>
<table>
<thead>
<tr>
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<tr>
<td>X</td>
<td>New Course</td>
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<tr>
<td></td>
<td>New Seminar Title</td>
</tr>
<tr>
<td></td>
<td>Change to an Existing Course (please briefly explain the changes):</td>
</tr>
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</table>

2.b Term(s) offered (check)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>_<em>X</em></td>
<td>Fall</td>
<td><em>X</em>_</td>
<td>Spring</td>
</tr>
<tr>
<td>___</td>
<td>Summer</td>
<td>___</td>
<td>Other</td>
</tr>
</tbody>
</table>

All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:

2.c Student Requirements

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Students required to take this course: (by program and year, as appropriate)</td>
<td></td>
</tr>
<tr>
<td>Students in the BS in HCC, typically during their third semester of study.</td>
<td></td>
</tr>
<tr>
<td>Students who might elect to take the course:</td>
<td></td>
</tr>
<tr>
<td>Computing students wishing to learn about designing for accessibility who have met the prerequisites</td>
<td></td>
</tr>
</tbody>
</table>

3.0 Goals of the course (including rationale for the course, when appropriate):

The goal of this course is to serve as the formal introduction for students to the field of human centered computing. Drawing upon programming and design skills developed in prerequisite courses, the goal of this course is to allow students to see how the field of human computer interaction unites the fields of psychology, design, and computing. Students will be able to explain the key issues and trends in the field of human computer interaction, and describe principles of user-interface and digital interaction design, as they apply elements of cognitive psychology to digital design. Students will be able to identify the usability problems in an existing website, software, or device, and they will be able to evaluate them based on key principles and guidelines of human computer interaction. Students will become familiar with several methodologies and paradigms for designing and evaluating technology, and they will learn to select appropriate methods for particular design problems. This course provides a necessary foundation for students to learn about prototyping techniques, accessibility, or other human-centered computing topics in subsequent courses in the curriculum.

4.0 Course description (as it will appear in the RIT Catalog – do not include enforceable prerequisites, credit hours, or terms offered.)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ISTE-262</td>
<td>Foundations of Human-Centered Computing</td>
</tr>
<tr>
<td></td>
<td>This course explores how the fields of psychology, digital design, and computing</td>
</tr>
</tbody>
</table>
converge in the design, development, and evaluation of new technologies that people find effective and enjoyable to use. Students will investigate the field of human-computer interaction (HCI), with a focus on how users’ various sensory, motor, and cognitive abilities are essential to their successful use of technology. Students will be exposed to modern research methods and paradigms in field of human-computer interaction, including predictive modeling, heuristic evaluation, interpretive methods, and experimental user testing. Students will learn key design principles and guidelines and apply them to analyze existing designs and conduct a design process that is centered on human users of technology.

In the sections that follow, please use sub-numbering as appropriate (eg. 5.1, 5.2, etc.)

5.0 Possible resources (texts, references, computer packages, etc.)

Texts


Software

Prototyping and Wireframing Tools (e.g., InVision)
Multiple Web Browsers
Programmer’s Text Editor (e.g.: BBEdit)
Web Development Environment (e.g: Adobe Suite)
Visual Programming Environment (e.g: Microsoft Visual Studio)
SFTP
SSH

Server Facilities

Hosting for Information Services to be consumed by student projects

6.0 Topics (outline):

6.1. Human Capabilities
6.2. Computer Input and Output Modalities
6.3. Interaction Styles and Paradigms
6.4. Interaction Design Basics
6.5. HCI in the Software Development Process
6.6. Design Rules: Guidelines, Standards
6.7. Predictive/Heuristic Evaluation
6.8. Cognitive Models
6.9. Interpretive Evaluation Techniques
6.10. Experimental Evaluation Techniques
6.11. Emerging Interaction Techniques and Technologies

7.0 Intended course learning outcomes and associated assessment methods of those outcomes (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>After completing this course, students will be able to:</td>
<td></td>
</tr>
<tr>
<td>7.1 Identify the major issues in the field of human computer interaction.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.2 Describe key principles of user-interface and interaction design.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.3 Identify the major usability challenges of an existing piece of computer software or other form of interaction.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.4 Apply cognitive psychology to the design and evaluation of technology.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.5 Evaluate existing software applications for their strengths and their weaknesses according to HCI principles and guidelines.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.6 Identify current trends in the field of human computer interaction.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.7 Select appropriate methodology and paradigms for approaching design problems.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
</tbody>
</table>

8.0 Program outcomes and/or goals supported by this course (if appropriate)

| 8.1 Gather user, client, and system needs/data and translate into technical and aesthetic specifications and requirements. |
| 8.2 Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility. |
| 8.3 Evaluate user interfaces and user experiences, through a variety of techniques and methodologies. |
| 8.4 Communicate via written reports, visualizations, and presentations. |

9.0 This section may be deleted unless the course is being considered as General Education course.
<table>
<thead>
<tr>
<th>General Education Learning Outcome Supported by the Course (if appropriate)</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td></td>
</tr>
<tr>
<td>Express themselves effectively in common college-level written forms using standard American English</td>
<td></td>
</tr>
<tr>
<td>Revise and improve written and visual content</td>
<td></td>
</tr>
<tr>
<td>Express themselves effectively in presentations, either in spoken standard American English or sign language (American Sign Language or English-based Signing)</td>
<td></td>
</tr>
<tr>
<td>Comprehend information accessed through reading and discussion</td>
<td></td>
</tr>
<tr>
<td><strong>Intellectual Inquiry</strong></td>
<td></td>
</tr>
<tr>
<td>Review, assess, and draw conclusions about hypotheses and theories</td>
<td></td>
</tr>
<tr>
<td>Analyze arguments, in relation to their premises, assumptions, contexts, and conclusions</td>
<td></td>
</tr>
<tr>
<td>Construct logical and reasonable arguments that include anticipation of counterarguments</td>
<td></td>
</tr>
<tr>
<td>Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information</td>
<td></td>
</tr>
<tr>
<td><strong>Ethical, Social and Global Awareness</strong></td>
<td></td>
</tr>
<tr>
<td>Analyze similarities and differences in human experiences and consequent perspectives</td>
<td></td>
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<tr>
<td>Examine connections among the world’s populations</td>
<td></td>
</tr>
<tr>
<td>Identify contemporary ethical questions and relevant stakeholder positions</td>
<td></td>
</tr>
<tr>
<td><strong>Scientific, Mathematical and Technological Literacy</strong></td>
<td></td>
</tr>
<tr>
<td>Explain basic principles and concepts of one of the natural sciences</td>
<td></td>
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<tr>
<td>Apply methods of scientific inquiry and problem solving to contemporary issues</td>
<td></td>
</tr>
<tr>
<td>Comprehend and evaluate mathematical and statistical information</td>
<td></td>
</tr>
<tr>
<td>Perform college-level mathematical operations on quantitative data</td>
<td></td>
</tr>
<tr>
<td>Describe the potential and the limitations of technology</td>
<td></td>
</tr>
<tr>
<td>Use appropriate technology to achieve desired outcomes</td>
<td></td>
</tr>
<tr>
<td><strong>Creativity, Innovation and Artistic Literacy</strong></td>
<td></td>
</tr>
<tr>
<td>Demonstrate creative/innovative approaches to course-based assignments or projects</td>
<td></td>
</tr>
<tr>
<td>Interpret and evaluate artistic expression considering the cultural context in which it was created</td>
<td></td>
</tr>
</tbody>
</table>

10.0 Other relevant information (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)
NEW COURSE: GCCIS-ISTE-264-PrototypingAndUsabilityTesting

TOPIC or SEMINAR title (if applicable):

1.0 Course Designations and Approvals

<table>
<thead>
<tr>
<th>Required course approvals:</th>
<th>Name/Chair:</th>
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<tr>
<td>Academic Unit Curriculum Committee</td>
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Optional designations:  
☐ General Education  
☐ Writing Intensive  
☐ Honors

<table>
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2.0 Course information:

<table>
<thead>
<tr>
<th>Course title:</th>
<th>Prototyping and Usability Testing</th>
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<tr>
<td>Short title: **</td>
<td>Prototyping&amp;UsabilityTesting</td>
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<td>Credit hours:</td>
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<tr>
<td>Prerequisite(s): **</td>
<td>ISTE-262</td>
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<tr>
<td>Co-requisite(s):</td>
<td>None</td>
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<tr>
<td>Course proposed by:</td>
<td>Dan Ashbrook, Deb Gears, Vicki Hanson, Matt Huenerfauth</td>
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2.b Term(s) offered (check)

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<td>Spring</td>
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All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:

2.c Student Requirements

Students required to take this course: (by program and year, as appropriate)
Students in the BS in HCC, typically during their fourth semester of study.

Students who might elect to take the course:
Computing students wishing to learn about designing for accessibility who have met the prerequisites.

3.0 Goals of the course (including rationale for the course, when appropriate):
The goal of this course is for students to become familiar with the tools, methodologies, and best practices for the use of prototyping and user evaluation in the design process. This course is meant to be an in-depth follow-up of issues that were introduced in the prerequisite foundations course. At the end of this course, students will be able to select the most appropriate fidelity of prototype, depth of prototype, and prototype creation tool based on the design problem. In addition, students will be able to plan a design process involving prototyping and user testing, including: creating a testing plan, selecting appropriate research methods, identifying goals for evaluation, and identifying users. Students will also gain hands-on experience in conducting a user evaluation with their prototype, analyzing the results, and communicating these results. Finally, students will learn how the results of prototyping and user evaluation can lead to design changes and subsequent rounds of prototype and evaluation.

4.0 Course description (as it will appear in the RIT Catalog – do not include enforceable prerequisites, credit hours, or terms offered.)

**ISTE-264 Prototyping and Usability Testing**

This course will explore how modern human centered computing design and evaluation methodologies can be effectively used to create high-quality and usable technologies for a variety of users. Students will learn how an initial design can be evaluated and improved through the use of prototyping and user evaluations. Students will investigate
a variety of high- and low-fidelity prototyping techniques, plan an iterative design process for an application, conduct an evaluation of a prototype, and analyze the results of user testing to drive a design process. Programming is required.

In the sections that follow, please use sub-numbering as appropriate (eg. 5.1, 5.2, etc.)

5.0 Possible resources (texts, references, computer packages, etc.)

Texts


Software

Prototyping and Wireframing Tools (e.g., InVision)
Multiple Web Browsers
Programmer’s Text Editor (eg: BBEdit)
Web Development Environment (eg: Adobe Suite)
Visual Programming Environment (eg: Microsoft Visual Studio)
SFTP
SSH

Server Facilities

Hosting for Information Services to be consumed by student projects

6.0 Topics (outline):

6.12. Prototyping in the Design Cycle
6.15. Identifying Users for Evaluation
6.16. Scenarios and Storyboarding Techniques
6.17. Interactive Prototyping Methods and Tools
6.18. Low Fidelity Prototyping
6.19. User Evaluations with Low Fidelity Prototypes
6.20. High Fidelity Prototyping
6.21. User Evaluations with High Fidelity Prototypes
6.22. Analyzing and Communicating the Results from User Evaluation
6.23. Planning Subsequent Designs and Evaluations Based on Results

7.0 **Intended course learning outcomes and associated assessment methods of those outcomes** (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Assessment Method</th>
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<tbody>
<tr>
<td>At the end of this course, students will be able to:</td>
<td></td>
</tr>
<tr>
<td>7.1 Select the most appropriate fidelity and type of prototype, based on the design problem.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.2 Select the most appropriate tools to construct a prototype to evaluate a design.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.3 Plan a design process involving prototyping and user testing.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.4 Design a usability testing plan utilizing appropriate research methods and techniques.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.5 Organize and run a user test that makes use of a prototype they have built.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.6 Analyze the results of usability testing and incorporate them into a report.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.7 Identify how the results of usability testing inform the redesign process.</td>
<td>In-class exercises, exams, and projects.</td>
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</table>

8.0 **Program outcomes and/or goals supported by this course (if appropriate)**

| 8.1 Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility. |
| 8.2 Develop and assess prototypes that meet the aesthetic and functional requirements of a client. |
| 8.3 Evaluate user interfaces and user experiences, through a variety of techniques and methodologies. |
| 8.4 Communicate via written reports, visualizations, and presentations. |

9.0 **This section may be deleted unless the course is being considered as General Education course.**

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<td>Apply methods of scientific inquiry and problem solving to contemporary issues</td>
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**10.0 Other relevant information** (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)

This course requires an Active Learning classroom, equipped with computers.
Information Sciences and Technologies

NEW COURSE: GCCIS-ISTE-266-DesignForAccessibility

TOPIC or SEMINAR title (if applicable):

1.0 Course Designations and Approvals

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Optional designations:  
☐ General Education  
☐ Writing Intensive  
☐ Honors  

2.0 Course information:

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<td>Course proposed by:</td>
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2.b **Term(s) offered** *(check)*

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<th>Summer</th>
<th>Other</th>
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*All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:*

2.c **Student Requirements**

**Students required to take this course:** *(by program and year, as appropriate)*

Students in the BS in HCC, typically during their fifth semester of study.

**Students who might elect to take the course:**

Computing students wishing to learn about designing for accessibility who meet the prerequisites.

3.0 **Goals of the course** *(including rationale for the course, when appropriate)*:

The goal of this course is to give students perspective on the diversity of abilities that exist in the population of their users and for the students to be able to anticipate where accessibility problems may occur when users interact with technology. Following the human centered computing foundations and projects in the prerequisite course, which focused on users with typical abilities, this course will prepare students to design and evaluate technologies for users with disabilities or older adults. Students will learn to analyze an existing website, software, or device to identify where accessibility problems are likely to occur. Students will also gain a solid foundation in key principles of accessible design or universal design for people with disabilities and older adults. Students will also become familiar with the types of accessibility devices and assistive technology that may be employed by their users, and they will understand key trends in the field of accessible computing. Fundamentally, the goal of this course is for students to be able to identify accessibility challenges and to provide solutions for these users.

4.0 **Course description** *(as it will appear in the RIT Catalog – do not include enforceable prerequisites, credit hours, or terms offered.)*

**ISTE-266 Design for Accessibility**

This course will explore the design, evaluation, and use of computing and information technologies to benefit people with disabilities and older adults. Students will learn how
to analyze the accessibility of existing software or websites, and they will learn how to design technology that can be effectively, enjoyably, and efficiently used by people with diverse sensory, motor, and cognitive abilities. Students will learn about cutting-edge ways in which science and technology has provided assistance and accessibility for people with disabilities. Students will learn how to investigate the needs of users with disabilities, design technologies according to universal design or accessibility principles, interpret key accessibility regulations and guidelines, and include people with disabilities in the design and evaluation of new technologies. Programming is required.

In the sections that follow, please use sub-numbering as appropriate (eg. 5.1, 5.2, etc.)

### 5.0 Possible resources (texts, references, computer packages, etc.)

#### Texts


#### Software

- Multiple Web Browsers
- Programmer’s Text Editor (eg: BBEdit)
- Web Development Environment (eg: Adobe Suite)
- Visual Programming Environment (eg: Microsoft Visual Studio)
- SFTP
SSH
Server Facilities

Hosting for Information Services to be consumed by student projects

6.0  **Topics (outline):**

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<tr>
<td>6.24.</td>
<td>Human Capabilities and Disabilities</td>
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<td>6.25.</td>
<td>Regulations, Guidelines, and Standards</td>
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<td>6.27.</td>
<td>Accessibility in the Design Process</td>
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<td>6.28.</td>
<td>Accessibility Issues for Sensory Disabilities</td>
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<td>6.29.</td>
<td>Accessibility Issues for Motor Disabilities</td>
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<td>Accessibility Issues for Cognitive Disabilities</td>
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<td>6.31.</td>
<td>Designing for Older Adults with Diverse Capabilities</td>
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7.0  **Intended course learning outcomes and associated assessment methods of those outcomes** (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

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<td>At the end of the course, students should be able to:</td>
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<td>7.1 Explain the major forms of typical human capabilities and the spectrum of abilities of people with disabilities.</td>
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<td>7.2 Identify the major usability and accessibility challenges of an existing piece of computer software or other form of digital interaction.</td>
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<td>7.3 Evaluate existing software applications for their strengths and their weaknesses according to accessibility principles or the principles of universal design.</td>
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<td>7.4 Identify current trends in the field of accessible computing.</td>
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<td>7.5 Propose solutions for identified accessibility problems.</td>
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8.0  **Program outcomes and/or goals supported by this course (if appropriate)**
8.1 Gather user, client, and system needs/data and translate into technical and aesthetic specifications and requirements.
8.2 Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility.
8.3 Evaluate user interfaces and user experiences, through a variety of techniques and methodologies.
8.4 Communicate via written reports, visualizations, and presentations.
8.5 Describe emerging technologies and explore possibilities for their use.

9.0 This section may be deleted unless the course is being considered as General Education course.

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10.0 **Other relevant information** (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)
NEW (or REVISED) COURSE: GCCIS-ISTE-362 - AccessAndAssistiveTechnology

TOPIC or SEMINAR title (if applicable):

1.0 Course Designations and Approvals

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Optional designations:

- General Education
- Writing Intensive
- Honors

2.0 Course information:

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<tr>
<td>Credit hours:</td>
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<td>Prerequisite(s): ***</td>
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<td>Spring</td>
<td>Summer</td>
</tr>
</tbody>
</table>

*All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:*

2.c Student Requirements

**Students required to take this course:** (by program and year, as appropriate)
Students in the BS in HCC, typically during their sixth to eighth semester of study, as part of the concentration in Accessibility.

**Students who might elect to take the course:**
Computing students wishing to learn about designing for accessibility who have met the prerequisites.

3.0 Goals of the course (including rationale for the course, when appropriate):

The goal of this course is to provide students with deeper knowledge in the concentration area of accessibility, building on the foundation in the prerequisite Design for Accessibility course. This course will consist of a survey of state-of-the-art software and technology that is currently used by people with disabilities. Students will understand how to design software or websites that work well with users' own access technology. Students will be able to explain the design principles that underlie access technology. Students will be aware of the issues involved in evaluating the capabilities of a user to match them to appropriate technology, selecting access technology from an array of available choices. Specific technologies discussed in the course may include, e.g.: switch devices, alternative input devices, AAC devices, screen readers, and screen magnifiers. It is anticipated that the specific set of technologies discussed in the course will evolve over time to reflect advances in the field and the particular areas of expertise of the instructor.

4.0 Course description (as it will appear in the RIT Catalog – do not include enforceable prerequisites, credit hours, or terms offered.)

**ISTE-362 Access and Assistive Technology**
Students will gain hands-on experience and knowledge about a wide variety of accessibility and assistive technology available for people with disabilities. Students will understand the design principles underlying this technology and how the features and
capabilities of assistive technology can be tailored to a particular individual’s needs and capabilities. Students will learn about how new technologies and research in accessibility can be made available for users, and they will learn how to design websites and software that work effectively with a user’s own technology. Specific technologies discussed in the course may include, e.g.: alternative input devices, communication devices, and screen readers and magnifiers for people with visual impairments. Programming is required.

*In the sections that follow, please use sub-numbering as appropriate (eg. 5.1, 5.2, etc.)*

### 5.0 Possible resources (texts, references, computer packages, etc.)

**Texts**


Software

- Screen Magnification Software (e.g., ZoomText)
- Screen Reader Software (e.g., JAWS, MacOS VoiceOver)
- Alternative and Augmentative Communication Software (e.g., The Grid 2)
- Multiple Web Browsers
- Programmer’s Text Editor (e.g., BBEdit)
- Web Development Environment (e.g., Adobe Suite)
- Visual Programming Environment (e.g., Microsoft Visual Studio)
- SFTP
- SSH

Server Facilities

Hosting for Information Services to be consumed by student projects

6.0 **Topics (outline):**

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>6.37.</td>
<td>Technology Transfer and Commercialization of Access Technologies</td>
</tr>
<tr>
<td>6.38.</td>
<td>Funding Mechanisms to Support Acquisition of Access Technologies</td>
</tr>
<tr>
<td>6.39.</td>
<td>Understanding the Needs and Capabilities of Users of Access Technologies</td>
</tr>
<tr>
<td>6.40.</td>
<td>Finding Information about Access Technologies and Comparing Features</td>
</tr>
<tr>
<td>6.41.</td>
<td>Uptake and Abandonment of Access Technologies</td>
</tr>
<tr>
<td>6.42.</td>
<td>Web and Software Design Compatible with Screen Magnification</td>
</tr>
<tr>
<td>6.43.</td>
<td>Web and Software Design Compatible with Screen Readers</td>
</tr>
<tr>
<td>6.44.</td>
<td>Web and Software Design Compatible with Switch Devices and AAC</td>
</tr>
<tr>
<td>6.45.</td>
<td>Web and Software Design Compatible with other emerging technologies</td>
</tr>
<tr>
<td>6.46.</td>
<td>Evaluating Website and Software Compatibility with Access Technologies</td>
</tr>
</tbody>
</table>

7.0 **Intended course learning outcomes and associated assessment methods of those outcomes** (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the end of the course, students should be able to:</td>
<td></td>
</tr>
<tr>
<td>7.1 Describe the variety of state-of-the-art software and</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
</tbody>
</table>
technology that is current available for use by people with disabilities, which may include, e.g., switch devices, alternative input devices, AAC devices, screen readers, and screen magnifiers.

| 7.2 | Gather information about commercially available access technologies and compare the technical features and usability of alternative technologies. | In-class exercises, exams, and projects. |
| 7.3 | Identify the factors that must be considered when matching a particular individual's needs and capabilities to a piece of access technology. | In-class exercises, exams, and projects. |
| 7.4 | Design websites or software that are compatible with popular access technologies, e.g., screen readers or alternative input technologies. | In-class exercises, exams, and projects. |
| 7.5 | Evaluate the overall accessibility of websites or software in the context of specific access technologies. | In-class exercises, exams, and projects. |

### 8.0 Program outcomes and/or goals supported by this course (if appropriate)

| 8.1 | Gather user, client, and system needs/data and translate into technical and aesthetic specifications and requirements. |
| 8.2 | Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility. |
| 8.3 | Develop and assess prototypes that meet the aesthetic and functional requirements of a client. |
| 8.4 | Evaluate user interfaces and user experiences, through a variety of techniques and methodologies. |
| 8.5 | Communicate via written reports, visualizations, and presentations. |

### 9.0 This section may be deleted unless the course is being considered as General Education course.

<table>
<thead>
<tr>
<th>General Education Learning Outcome Supported by the Course (if appropriate)</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td></td>
</tr>
<tr>
<td>Express themselves effectively in common college-level written forms using standard American English</td>
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<tr>
<td>Construct logical and reasonable arguments that include</td>
<td></td>
</tr>
<tr>
<td>anticipation of counterarguments</td>
<td></td>
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<tr>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information</td>
<td></td>
</tr>
</tbody>
</table>

**Ethical, Social and Global Awareness**

| Analyze similarities and differences in human experiences and consequent perspectives |
| Examine connections among the world’s populations |
| Identify contemporary ethical questions and relevant stakeholder positions |

**Scientific, Mathematical and Technological Literacy**

| Explain basic principles and concepts of one of the natural sciences |
| Apply methods of scientific inquiry and problem solving to contemporary issues |
| Comprehend and evaluate mathematical and statistical information |
| Perform college-level mathematical operations on quantitative data |
| Describe the potential and the limitations of technology |
| Use appropriate technology to achieve desired outcomes |

**Creativity, Innovation and Artistic Literacy**

| Demonstrate creative/innovative approaches to course-based assignments or projects |
| Interpret and evaluate artistic expression considering the cultural context in which it was created |

### 10.0 **Other relevant information** (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)

This course requires an Active Learning classroom, equipped with computers.
**NEW COURSE**: GCCIS-ISTE-462-ResearchInAccessibility

**TOPIC or SEMINAR title (if applicable):**

### 1.0 Course Designations and Approvals

<table>
<thead>
<tr>
<th>Required course approvals:</th>
<th>Name/Chair:</th>
<th>Approval date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Unit Curriculum Committee</td>
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**Optional designations:**

<table>
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<tr>
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<th>Approval date from appropriate committee:</th>
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<tbody>
<tr>
<td>☐ General Education</td>
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</tr>
<tr>
<td>☐ Writing Intensive</td>
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<tr>
<td>☐ Honors</td>
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### 2.0 Course information:

<table>
<thead>
<tr>
<th>Course title:</th>
<th>Research in Accessibility</th>
</tr>
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<tbody>
<tr>
<td>Short title: **</td>
<td>ResearchInAccessibility</td>
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<tr>
<td>Credit hours:</td>
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</tr>
<tr>
<td>Prerequisite(s): ***</td>
<td>ISTE-266, PSYC-251</td>
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<td>Co-requisite(s):</td>
<td>None</td>
</tr>
<tr>
<td>Course proposed by:</td>
<td>Matt Huenerfauth</td>
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<tr>
<td>Effective date:</td>
<td>Fall Semester, 2015</td>
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<th>Contact hours</th>
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<tr>
<td>Lab</td>
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<tr>
<td>Studio</td>
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<tr>
<td>Other (specify)</td>
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</table>
2.a **Course Information** (check one)

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<tbody>
<tr>
<td>X</td>
<td>New Course</td>
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<td></td>
<td>New Seminar Title</td>
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<tr>
<td></td>
<td>Change to an Existing Course (please briefly explain the changes):</td>
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2.b **Term(s) offered** (check)

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*All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:*

2.c **Student Requirements**

**Students required to take this course:** (by program and year, as appropriate)

Students in the BS in HCC, typically during their sixth to eighth semester of study, as part of the concentration in Accessibility.

**Students who might elect to take the course:**

Computing students wishing to learn about designing for accessibility who have met the prerequisites

3.0 **Goals of the course** (including rationale for the course, when appropriate):

The goal of this course is to provide students with deeper knowledge in the concentration area of accessibility, building on the foundation in the prerequisite Design for Accessibility course. In this course, students will focus on “next generation” accessibility and assistive technology that is currently the focus of research. Students will learn to search and access the primary research literature in the field of computer accessibility and assistive technology for specific topics of interest. Students will learn to summarize, discuss, present, and critique current research papers that describe recent research advances. Students will learn how to structure a scientific paper in the field of accessibility, and they will conduct a literature survey to synthesize some research in a particular domain. The literature research skills provided by this course are intended to support those students who continue to do a senior project or capstone. The specific selection of papers will likely change each year to reflect advances in the field and the particular domain expertise of the instructor.

4.0 **Course description** (as it will appear in the RIT Catalog – do not include enforceable prerequisites, credit hours, or terms offered.)

**ISTE-462 Research in Accessibility**

Students will dive into cutting edge research in the field of computer accessibility and
assistive technology; they will read, present, and discuss research literature from major conferences and journals in the field. Students will learn about recent developments and ongoing research efforts in accessibility, and they will learn how to synthesize the results from research publications. Students will learn how to identify high quality research and how to critique this work to identify areas for improvement or future research directions. Students will learn the elements of a high-quality research publication, and they will explore and gain expertise in a particular topic in the field of accessibility in depth.

In the sections that follow, please use sub-numbering as appropriate (eg. 5.1, 5.2, etc.)

5.0 Possible resources (texts, references, computer packages, etc.)

<table>
<thead>
<tr>
<th>Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceedings of the Universal Access in Human-Computer Interaction conference.</td>
</tr>
<tr>
<td>Proceedings of the Web for All (W4A) Conference.</td>
</tr>
</tbody>
</table>

6.0 Topics (outline):  
6.47. Introduction to Major Conferences and Journals in Accessibility  
6.48. The Scholarly Publication and Peer-Review Process  
6.49. Funding and Operation of Research Labs on Accessibility
6.50. The Structure of a Research Paper or Article
6.51. Presenting and Summarizing Research Articles
6.52. Formulating a Critique of a Research Article on Accessibility
6.53. Discussion of Current Research in the Field of Accessibility (multiple topics)
6.54. Organizing and Conducting a Literature Survey
6.55. Guidelines for Writing about Accessibility and People with Disabilities
6.56. Presentation and Discussion of Literature Surveys on Accessibility

7.0 Intended course learning outcomes and associated assessment methods of those outcomes (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

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<td>In-class exercises and assignments.</td>
</tr>
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<td>7.2 Discuss and critique research papers in the field of accessibility.</td>
<td>In-class discussion and written work.</td>
</tr>
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<td>7.3 Summarize and present the content of research papers in the field of accessibility.</td>
<td>In-class presentations and discussion.</td>
</tr>
<tr>
<td>7.4 Conduct and write a literature survey to synthesize research papers on some topic.</td>
<td>Written literature survey.</td>
</tr>
<tr>
<td>7.5 Write a research survey paper in the format of a scientific conference or journal in the field of accessibility.</td>
<td>Written work.</td>
</tr>
</tbody>
</table>

8.0 Program outcomes and/or goals supported by this course (if appropriate)

| 8.1 Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility. |
| 8.2 Evaluate user interfaces and user experiences, through a variety of techniques and methodologies.                        |
| 8.3 Communicate via written reports, visualizations, and presentations.                                                  |
| 8.4 Describe emerging technologies and explore possibilities for their use.                                                |

9.0 This section may be deleted unless the course is being considered as General Education course.
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10.0 Other relevant information (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)
Information Sciences and Technologies

**NEW COURSE**: GCCIS-ISTE-464-AccessibilityThroughTheLifespan

**TOPIC or SEMINAR title (if applicable):**

### 1.0 Course Designations and Approvals

<table>
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<th>Required course approvals:</th>
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<th>Approval date:</th>
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### Optional designations:

- ☐ General Education
- ☐ Writing Intensive
- ☐ Honors

**Approval date from appropriate committee:**

### 2.0 Course information:

<table>
<thead>
<tr>
<th>Course title:</th>
<th>Accessibility Through the Lifespan</th>
</tr>
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<tbody>
<tr>
<td>Short title: **</td>
<td>AccessibilityThroughLifespan</td>
</tr>
<tr>
<td>Credit hours:</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisite(s): ***</td>
<td>ISTE-266</td>
</tr>
<tr>
<td>Co-requisite(s):</td>
<td>None</td>
</tr>
<tr>
<td>Course proposed by:</td>
<td>Matt Huenerfauth</td>
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<tbody>
<tr>
<td>X</td>
<td>New Course</td>
</tr>
<tr>
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2.b Term(s) offered (check)

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</table>

All courses must be offered at least once every 2 years. If course will be offered on a bi-annual basis, please indicate here:

2.c Student Requirements

Students required to take this course: (by program and year, as appropriate)
Students in the BS in HCC, typically during their sixth to eighth semester of study, as part of the concentration in Accessibility.

Students who might elect to take the course:
Computing students wishing to learn about designing for accessibility who meet the prerequisites.

3.0 Goals of the course (including rationale for the course, when appropriate):
The goal of this course is to provide students with deeper knowledge in the concentration area of accessibility, building on the foundation in the prerequisite Design for Accessibility course. In this course, students will explore how accessibility and assistive technologies intersect with human development and aging; this course focuses especially on access technology in education contexts (for children and young adults) and designing accessibility for older adults with diverse capabilities. Another goal for this course is to give students an opportunity to understand or interact with potential users of access technology in education or aging contexts, through guest speakers or class visits. As such, the course benefits from the presence of many deaf and hard-of-hearing students at RIT. The specific disabilities discussed may include, e.g.: learning disabilities, cognitive disabilities (including dementia and stroke-related impairments), hearing loss, reduced vision, and reduced motor coordination. The specific technologies discussed during the course will likely change over time to reflect advances in the field and the particular expertise of the instructor.

4.0 Course description (as it will appear in the RIT Catalog – do not include enforceable prerequisites, credit hours, or terms offered.)

ISTE-464  
Accessibility Through the Lifespan
Students will explore how accessibility and assistive technologies intersect with aging throughout the lifespan, with a particular focus on the early and later stages of human development, including: educational contexts (for children or young adults) and effective design strategies for promoting accessibility for older adults with diverse capabilities. Students will learn key legal regulations that govern special education and accessibility in educational contexts, including the provision of assistive technologies and the accessibility of instructional technologies. Students will also explore typical changes in ability and impairments that relate to the human aging process, and they will investigate how to design usable and engaging technology for the growing population of older adults. Students will come to understand the concepts and needs of younger and older users firsthand through, e.g., guest speakers or personal interactions.

In the sections that follow, please use sub-numbering as appropriate (eg. 5.1, 5.2, etc.)

5.0 Possible resources (texts, references, computer packages, etc.)

<table>
<thead>
<tr>
<th>Texts</th>
</tr>
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<tbody>
<tr>
<td>Pew Research Center. April 2014. “Older Adults and Technology Use.” Available at: <a href="http://www.pewinternet.org/2014/04/03/older-adults-and-technology-use/">http://www.pewinternet.org/2014/04/03/older-adults-and-technology-use/</a></td>
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Software

Multiple Web Browsers
Programmer’s Text Editor (eg: BBEdit)
Web Development Environment (eg: Adobe Suite)
Visual Programming Environment (eg: Microsoft Visual Studio)
SFTP
SSH

Server Facilities

Hosting for Information Services to be consumed by student projects

6.0 Topics (outline):

6.57. Overview of Human Development
6.58. Population Demographics of Aging and Development
6.59. Special Education and Accessibility
6.60. Laws and Regulations for Education Accessibility
6.61. Technologies in the Classroom
6.62. Assistive Technologies Beyond the Classroom
6.63. Accessibility of Instructional Technology
6.64. Accessibility Technology in Higher Education
6.65. Design and Evaluation of Technologies in Education
6.66. Accessibility in Employment and Adult Life
6.67. Aging, Impairment, and Disability
6.68. Design for Older Users
6.69. Access Technologies for Older Adults
6.70. Design and Evaluation of Technologies for Older Adults
### 7.0  Intended course learning outcomes and associated assessment methods of those outcomes (please include as many Course Learning Outcomes as appropriate, one outcome and assessment method per row).

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the end of the course, students should be able to:</td>
<td></td>
</tr>
<tr>
<td>7.1 Describe the major stages of human lifespan development and population trends in aging.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.2 Explain the historical and legal underpinnings of education accessibility and assistive technology.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.3 Identify and compare educational access technologies for use inside and outside of classroom settings.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.4 Identify typical changes in functional abilities in older adults.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.5 Characterize common trends in the adoption and use of technology by older adults.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.6 Design websites and software that are accessible and engaging for older adults.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
<tr>
<td>7.7 Explain key factors in designing and conducting evaluations of technology with children or older adults.</td>
<td>In-class exercises, exams, and projects.</td>
</tr>
</tbody>
</table>

### 8.0  Program outcomes and/or goals supported by this course (if appropriate)

<table>
<thead>
<tr>
<th>Program outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1 Gather user, client, and system needs/data and translate into technical and aesthetic specifications and requirements.</td>
</tr>
<tr>
<td>8.2 Design interfaces and interactions based on research principles and aesthetic practice, design principles, or accessibility.</td>
</tr>
<tr>
<td>8.3 Develop and assess prototypes that meet the aesthetic and functional requirements of a client.</td>
</tr>
<tr>
<td>8.4 Communicate via written reports, visualizations, and presentations.</td>
</tr>
<tr>
<td>8.5 Describe emerging technologies and explore possibilities for their use.</td>
</tr>
</tbody>
</table>

### 9.0  This section may be deleted unless the course is being considered as General Education course.

<table>
<thead>
<tr>
<th>General Education Learning Outcome Supported by the Course (if appropriate)</th>
<th>Assessment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>Express themselves effectively in common college-level written forms using standard American English</td>
<td></td>
</tr>
<tr>
<td>Revise and improve written and visual content</td>
<td></td>
</tr>
<tr>
<td>Express themselves effectively in presentations, either in spoken standard American English or sign language (American Sign Language or English-based Signing)</td>
<td></td>
</tr>
<tr>
<td>Comprehend information accessed through reading and</td>
<td></td>
</tr>
<tr>
<td><strong>Intellectual Inquiry</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td></td>
</tr>
<tr>
<td>Review, assess, and draw conclusions about hypotheses and theories</td>
<td></td>
</tr>
<tr>
<td>Analyze arguments, in relation to their premises, assumptions, contexts, and conclusions</td>
<td></td>
</tr>
<tr>
<td>Construct logical and reasonable arguments that include anticipation of counterarguments</td>
<td></td>
</tr>
<tr>
<td>Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Ethical, Social and Global Awareness</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyze similarities and differences in human experiences and consequent perspectives</td>
</tr>
<tr>
<td>Examine connections among the world’s populations</td>
</tr>
<tr>
<td>Identify contemporary ethical questions and relevant stakeholder positions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Scientific, Mathematical and Technological Literacy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain basic principles and concepts of one of the natural sciences</td>
</tr>
<tr>
<td>Apply methods of scientific inquiry and problem solving to contemporary issues</td>
</tr>
<tr>
<td>Comprehend and evaluate mathematical and statistical information</td>
</tr>
<tr>
<td>Perform college-level mathematical operations on quantitative data</td>
</tr>
<tr>
<td>Describe the potential and the limitations of technology</td>
</tr>
<tr>
<td>Use appropriate technology to achieve desired outcomes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Creativity, Innovation and Artistic Literacy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate creative/innovative approaches to course-based assignments or projects</td>
</tr>
<tr>
<td>Interpret and evaluate artistic expression considering the cultural context in which it was created</td>
</tr>
</tbody>
</table>

10.0 **Other relevant information** (such as special classroom, studio, or lab needs, special scheduling, media requirements, etc.)
APPENDIX B
Enrollment and Market Analysis

Describe and elaborate in Appendix B on the following information:

- Detailed enrollment projections for the next five years, including as applicable, new students, transfer students, internal transfer students. These projections are to be proposed by EMCS with an explanation of methodology used
- Anticipated graduation rate (based upon college target and similar RIT programs)
- Competing programs (regional and national)
- Anticipated geographic draw (regional, national and international)
- Program delivery format (full-time, part-time, on-site, off-site, distance learning, weekend learning)

An undergraduate degree in HCC would be a unique offering among US universities. HCC courses often are offered as a concentration within an undergraduate Computer Science degree, but are not complete degrees and typically lack the interdisciplinary that the RIT degree would offer. Thus, this B. S. degree at RIT will serve to fill a void in undergraduate training of professionals with interdisciplinary HCC expertise.

From RIT Enrollment Services [Edward A. Lincoln, Assistant to the Senior Vice President, Enrollment Management & Career Services, in an email dated Feb 7, 2014], the following projections were obtained:

1. Based on our initial discussion with Dr. Vicki Hanson and Dr. Andrew Sears, we encourage the program’s developers to consider changing the title of the program to Human-centered Computing. Given the specific nature of the field, we believe that this title will be more understandable to a prospective student market, and will be more engaging to women, thereby supporting RIT’s goal of enrolling more women, especially in STEM disciplines.

2. The program will attract new students from both freshman and transfer markets with the majority of new students entering in the fall. In addition, given RIT’s recent conversion to a semester calendar, spring semester is an even more opportune time for new students to enroll, especially transfer students.

3. Most of the students will come from the Middle Atlantic States and New England. However, given the relatively small number of undergraduate degree programs in Human-Centered Computing, the program has the potential to draw students beyond those regions as well as internationally.

4. The Office of Undergraduate Admissions will work with the college to determine appropriate academic profile parameters for entering students with final authority for admission decisions resting in the Office of Undergraduate Admissions.

5. The Golisano College of Computing and Information Sciences will work with the Office of Undergraduate Admissions to maintain and enhance RIT’s relationships with two-year schools to promote the new program and develop articulation agreements to facilitate the recruitment and enrollment of transfer students into the program. Flexibility in the application of transfer credits will be critical to enrolling those students.
6. The interdisciplinary nature of the program is a strength, however, it has the potential to draw some enrolling students away from some of the current programs in Golisano, Liberal Arts and CIAS. This should not be construed as a limitation of the proposal, but requires a conservative projection of the number of new enrolling students.

7. The program will attract internal transfers from other RIT colleges, the University Studies program, as well as other programs in the Golisano College. For purposes of these projections, however, only students who are new to RIT are included in the projections.

8. The projections are based upon an assessment of the College Board’s Student Search Service data using the following parameters to determine the level of interest in the student market: Combined PSAT scores at 110 or higher, high school grades of B+ or higher, and high school class rank in the top quartile of the graduating class. Entering transfer students would generally present a GPA of 3.0 or higher for admission.

9. As the program proposal is furthered developed, we recommend that there be close alignment between the first year of the program and the college’s Computing Exploration program. Given the specific focus of the program, we believe that entering freshmen may need time to understand the nature and focus of the program and how it aligns with their strengths and interests.

Once the program has been approved and incorporated into a full marketing cycle, we project that 10 new freshmen and 8 new transfer students would enroll each September. Inputting those projection numbers along with the average (most recent four years) six-year graduation rate for Golisano College into the enrollment/cost model provided by Finance and Administration projects that accumulated headcount enrollment in the proposed program would be between 60 and 65 after four years. Please note, however, that the model, as it is currently configured, only provides input for freshmen and does not account for new external transfer students.
APPENDIX C
Internal Letters of Support

Include the following internal agreements and support documentation in Appendix C:

Impact statements and letters of support that identify the impact that new program will have on existing academic programs as well as projected needs for additional course sections from other academic units; academic accommodations; and other shared resources required from the following units:

- Appropriate RIT Librarian provides letter addressing sections 5a. and b of proposal
- College of Liberal Arts
- College of Science
- Other departments (other than program’s home department) including cost estimate for offering new courses or additional sections of current courses
- Student Affairs (addressing any services likely to be affected by addition of this program)
- NTID Support Services, including Access Services (Interpreting Services and C-Print).
- ETC/On-line Learning
- If program will share lab or studio space/equipment with other programs, provide documentation of this agreement
- Other internal letters, as deemed appropriate by proposer
Appropriate RIT Librarian letter addressing sections 5a and b of proposal:

September 4, 2014

From:
Roman Koshykar, M.S.
Computing and Information Sciences Librarian
The Wallace Center
Rochester Institute of Technology

To:
Daniel Bogaard, M.S.
Associate Professor and Undergraduate Program Coordinator of Information Sciences and Technology
Golisano College of Computing and Information Sciences
Rochester Institute of Technology

Adam Smith, M.F.A.
Associate Professor and Program Chair of New Media Design
College of Imaging Arts and Sciences
Rochester Institute of Technology

Andrew Herbert, Ph.D.
Professor and Department Chair of Psychology
College of Liberal Arts
Rochester Institute of Technology

The following outlines the potential impact on the library of RIT’s Golisano College of Computing and Information Sciences (GCCIS) proposed B.S. in Human Centered Computing program.

After reviewing the concept paper, I have determined that the proposed B.S. in Human Centered Computing program with have a minimal impact on the library’s services and collections. The new program is making no requests for new books, new journal titles, or new database subscriptions. The RIT Libraries’ current interdisciplinary collection of journals, books, and databases already supports the M.S. program in Human Computer Interaction, as well as programs in New Media Design and Psychology.

Our library currently subscribes to a standard core collection of computing and information sciences related databases, books and journals produced by professional associations and publishers. Our subscriptions also cover the disciplines of design and psychology. Available databases include: ACM Digital Library, IEEE Xplore, SpringerLink, Elsevier Science Direct, Sage Journals Online, PsycINFO, PsycArticles, ProQuest Psychology Journals, Academic Search Elite, Emerald Fulltext Management Journals, Art Full Text, and Web of Science. Our library also subscribes to a number of e-book packages through Ebrary, EBSCOHost e-books, EBL, Books24x7, SpringerLink, Morgan and Claypool Synthesis Digital Library of Engineering and Computer Science, and others. We also provide on-demand access to certain new e-books.
through a Patron Driven Access (PDA) system whereby e-book records are loaded into the catalog for patrons to discover. These PDA e-books are purchased only when patrons select and open them.

Periodical articles, papers from conference proceedings, books, and other information items not owned by The RIT Libraries can usually be obtained on a timely basis through Information Delivery Services (IDS), our interlibrary loan request system, or Connect NY. Connect NY is a unified catalog of 18 (at the time of writing) participating academic libraries in New York State and the collections of the Center for Research Libraries. Authorized users affiliated with participating libraries can borrow print books in a timely manner from other Connect NY libraries if the books are not owned by their home library or if their library's copy is already checked-out.

Additionally, The RIT Libraries is a member of the Rochester Regional Library Council (RRLC), which provides RIT students and faculty book-borrowing privileges at other Monroe County libraries, including many of the area’s academic libraries, through free RRLC Library access cards.

**Recommendation**

The current library resources can support this program.

Sincerely,

Roman Koshykar, M.L.S.
Computing and Information Sciences Librarian
COLA Letter of Support:

September 24, 2014

Dr. Stephen Zilora, Chair
Information Science and Technology
Golisano College of Computing and Information Science
Rochester Institute of Technology

Dear Dr. Zilora,

I write enthusiastically in support of the degree program proposal for a Bachelor of Science in Human Centered Computing. As you note in your description of the program, HCC focuses "on humans, individually or in social contexts, and their interaction with technology." Clearly, the program reaches out to some of our core strengths in social science and humanities, and we feel that the links forged by those working on the program will serve prospective students well. We, in the College of Liberal Arts, are delighted to see this proposal, and eager to build on the partnership that the program entails.

You also note in your description that the "intersection between computing, design and psychology is paramount in the students' understanding of human subjects as they interact digitally." We are happy to be part of this equation, and hope that we can contribute to its growth and development.

I know that Dr. Andrew Herbert is working closely with the inter-collegiate team developing this degree, but if you have any questions or needs from the dean's office, do not hesitate to get in touch.

I look forward to the continued collaboration, and wish you (and us) the best of luck as the proposal moves forward.

Sincerely,

James J. Winebrake, Ph.D.
Dean
October 10, 2014

Dr. Andrew Sears
Rochester Institute of Technology
20 Lomb Memorial Drive
Rochester, NY 14623

Dear Dean Sears:

On behalf of the College of Science, I am pleased to offer this letter of support for the proposed B.S. degree in Human Centered Computing that GCCIS is proposing together with CIAS and COLA. Our college is supporting this proposal with the understanding that any incremental resources associated with the science and math general education requirements of the degree will be allocated to the operating budget of the College of Science.

Please let me know if you have any questions.

Sincerely,

Sophia Maggelakis, Ph.D.
Dean and Professor
College of Science
October 17, 2014

Dr. Andrew Sears
Rochester Institute of Technology
1 Lomb Memorial Drive
Rochester NY 14623

Dear Dean Sears:

On behalf of the College of Imaging Arts and Sciences, I am pleased to offer this letter of support for the proposed B.S. degree in Human Centered Computing (HCC). This proposal represents a significant opportunity to bring together disciplines in computing with disciplines in our college to create a new, interdisciplinary degree at RTT that I believe will be quite attractive to new students.

As you know, I have been a supporter of our collaborative efforts to integrate human centered computing with disciplines in my college, and I look forward to expanding these efforts through the HCC degree as described in the proposal. In particular, I am excited to know that many of our departments (particularly our School of Design) will have an important part to play in curricular development and oversight. I am also aware of resource issues and am supportive of the budget model as reflected in the proposal. We support the program and will need assistance with faculty and lab resources.

Once again, I am pleased to express my support for this degree. Please let me know if you have any questions.

Sincerely yours,

Dr. Lorraine Justice, Dean
College of Imaging Arts and Sciences
School of Design Letter of Support:
October 28, 2014

Professor Daniel Bogaard
Rochester Institute of Technology
1 Lomb Memorial Drive
Rochester NY 14623

Dear Professor Bogaard,

I write in support of the proposed B.S. degree in Human Centered Computing (HCC). Given the proposal’s integrated curriculum, which brings design, computing, and the social sciences into a coherent program for students, we in the School of Design in CIAS feel confident that we can be partners in this degree. To that end, you and I discussed a number of courses from Design that HCC students would benefit from in their curriculum. These include New Media Design Digital Survey I and II, as well as some upper divisions options such as NMDE-201, 203 and 302. We support the program and will need assistance with faculty and lab resources.

We fully support the proposal, and look forward to working with you in implementing it.

Sincerely,

Peter Byrne
Professor, Administrative Chair, School of Design
College of Imaging Arts and Sciences
Rochester Institute of Technology
(585) 475-6607
pjbyrne@rit.edu
September 29, 2014

RE: Letter of Support, Bachelor of Science degree program in Human Centered Computing

Dear Evaluation Committee:

The Division of Student Affairs supports the creation of a new Bachelor of Science degree program in Human Centered Computing. Students in this program will be welcomed to utilize many programs and services offered within Student Affairs, including Academic Support programs, RIT Leadership Institute, and Counseling Center, which are open to all students. We do not see any significant impact on our programs and services and welcome the opportunity to support new students in this exciting major.

If you have questions, please contact me. Sincerely,

Dr. Heath Boice-Pardee

Associate Vice President for Student Affairs and Community Development

Cc: Dr. Sandra Johnson
    Dan Bogaard
NTID Letter of Support:
Mr. Daniel Bogaard
Rochester Institute of Technology

Dear Dan:

Thank you for asking about our support for a new Human Centered Computing program. The proposed Bachelor of Science Degree Program in Human Centered Computing will provide opportunities for deaf and hard-of-hearing students supported by NTID while adding modestly to the demands on access services. As drafted, in addition to core preparatory course work shared by students from a wide array of programs, many of the courses will be shared with students in existing Psychology and Design programs. The new courses being added to fill Human Centered Computing BS requirements will likely require additional access service resources. Synergy among the Psychology, Design and computing shared courses makes the proposal’s added demands on access service resources relatively efficient compared to an entirely new program.

We certainly support increased opportunities for deaf students to undertake studies in new areas, especially when the curriculum design does not place extraordinary additional demands on Access Services. As RIT has expanded its offerings, we have seen deaf students move into new areas of study and careers not easily entered by them previously. While in the past this has created challenges in meeting additional demands for access services, it is a ‘problem’ that fulfills the founders’ dreams for NTID. The Human Centered Computing degree proposal’s manageable requirements for additional resources drawn from Access Services are a reasonable impact to open these valuable opportunities for students. We are pleased to support the proposal and wish you well in establishing the new degree program.

Sincerely,

Rico Peterson

--

Rico Peterson, Ph.D.
Assistant Dean and Director of Access Services
Carey Hall, 14-1566
Rochester Institute of Technology
97 Lomb Memorial Drive
Rochester, New York 14623-5603
585 475 2958
585 475 7190 fax
rxpns@rit.edu
ETC/On-line Learning Letter of Support:

Hi Dan, having reviewed your proposal I quickly came to the conclusion that it warrants support from our office. We recently conducted a demand assessment for the wider HCI domain and found this to be in a high growth area. Whilst I support the undergraduate proposal you’ve submitted, I would also encourage the department to consider offering a set of graduate level online offerings. Please let me know how we can assist in this regard. Assuming approval from the requisite governance bodies I would also encourage your team to think about partnering with Teaching and Learning Services who can assist you in the development process of your undergraduate curriculum offerings. From pedagogical design through to highlighting in-class best practice, we are here to help you develop an exceptional student learning experience,

With best wishes,

Neil

_______________________
Neil Hair, Ph.D, Interim Executive Director
Innovative Learning Institute
Rochester Institute of Technology
31 Lomb Memorial Drive, WAL 05-A660
Rochester, NY 14623
p. 585-475-6322  f. 585-475-6292
e. neil@rit.edu  w. rit.edu/ili
www.neilhair.com
facebook, twitter, Skype, Linkedin: neilhair
Follow the ILI on facebook & twitter

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Dear Professor Herbert,

I am writing in support of the inclusion of our courses for the Natural Language Processing Concentration in the Human Centered Computing B.Sc.

- **ENGL 351 Language Technology**
- **ENGL 481 Introduction to Natural Language Processing**
- **ENGL 582 Advanced Topics in Computational Linguistics**

These courses will be offered by the department every year, and therefore will be offered with sufficient frequency to allow students to select the course to complete the concentration within the same time frame allowed for the completion of the baccalaureate degree.

Sincerely,

Lisa M. Hermsen, Associate Professor
Chair, Department of English
Rochester Institute of Technology
Rochester, NY 14623
November 3, 2014

Re: New degree in BS in Human-Centered Computing

(HCC) Members of the Institute Curriculum Committee,

The Undergraduate Curriculum Committee of the College of Imaging Arts & Sciences has reviewed and approved all of the CIAS courses involved in the new BS degree in Human-Centered Computing. The committee also reviewed the entire degree proposal, and found no apparent problems in the content or structure of the curriculum.

The committee would be happy to provide additional information if needed.

Best,

Robin Cass
Chair, CIAS Undergraduate Curriculum Committee
Associate Dean of Undergraduate Studies, CIAS
Letter of support from GCCIS Curriculum Committee:

RIT

Rochester Institute of Technology

Office of the Dean
B. Thomas Golisano College of Computing
and Information Sciences

November 3, 2014

Dr. Dawn Hollenbeck,
Chair, Inter-College Curriculum Committee

This memo is to inform you that both the proposal for a BS in Human Centered Computing and the related new courses offered by the Information Sciences and Technologies Department were reviewed and approved by the GCCIS Curriculum Committee on October 2, 2014. The required “confirming recommendation” from all GCCIS faculty has provided approximately 90% support for the program. Thus, this recommendation from the dean to ICC conforms to RIT’s new policy.

There have been no significant concerns and there has been overwhelming support for this new cross-college program.

Sincerely,

[Signature]

Michael Yacci, PhD
Chair, GCCIS Curriculum Committee
Professor and Associate Dean for Academic Affairs Golisano College of Computing and Information Sciences Rochester Institute of Technology
Letter of support from COLA Curriculum Committee:

Rochester Institute of Technology
College of Liberal Arts and Public Policy
Department 92 Lomb Memorial Drive
Rochester, NY 14623-5604
585-475-5291 FAX: 585-475-2510
http://www.rit.edu/-ppolicy

November 10, 2014

Dear Daniel,

This letter is to inform you that on October 28, 2014 the College of Liberal Arts Curriculum Committee has voted unanimously in support of the Proposal for the Human Centered Computing B.S. Program. We believe that the Institute should support this program as it will fulfill a student need as well as providing an excellent opportunity for fostering connections across the various colleges.

Our recommendation was presented to the entire faculty of the College of Liberal Arts on November 6, 2014. At that meeting, the entire College of Liberal Arts voted unanimously to support this degree.

If need anything else, please contact me. Sincerely,

Franz Foltz
Chair
COLA Curriculum Committee
**APPENDIX D**

**Program Need and Marketability: External letters of Support**

Provide documentation from potential feeder schools, employers and directors of advanced educational programs in Appendix D to demonstrate the need and marketability of this program.

- Include analysis from RIT's office of Cooperative Education and Career Services that addresses the opportunity for CO-OP placement, permanent job placement and graduate school admission.
- Indicate the basis upon which individuals were selected to prepare external letters of support. Important qualifications include academic background, subject matter expertise, relevant hiring responsibility, involvement in acceptance of students to advanced programs, etc.
- As appropriate, letters of support should be solicited from:
  - Graduate schools
  - Industrial advisors
  - Employers
  - Governmental agency representatives
  - Consultants
  - Professional organizations or agencies
  - Feeder schools
- Letters must respond to questions such as the following:
  - Would a graduate of this curriculum be employable by your organization or others similar to yours?
  - What is your prediction of the job market for a graduate from this curriculum 5 years from now? 10 years from now?
  - What possibilities are available for a graduate from this program to advance in this area or occupation?
  - Would a graduate from this curriculum be expected to receive an advanced degree after employment?
  - Are there opportunities for graduates from this program to enter an advanced degree licensing program? Are there limitations? GPA desired? Number of openings? Number of applicants versus number of accepts?
  - Should any portion of the (new, revised, consolidated) curriculum be modified? If so, what and why?
Analysis from RIT’s Office of Cooperative and Career Services:

Dan:

I'm pleased to provide the required analysis in support of the Human Centered Computing (HCC) Bachelor degree program proposal.

While there is no specific U.S. Department of Labor data set for this particular field, I have reviewed our current employer partners as well as other hiring entities that we may target as partners in light of the students and graduates to be developed in this program. I have determined that there is both a need and the appropriate employment market for these students. I see opportunities, for example, at both the co-op and graduating student level for user experience researchers, designers, developers, and engineers as well as any number of appropriate general computing skills employment categories for which students and graduates of the HCC program would be eligible.

I am pleased to note further that I see particularly strong options for graduates of this program interested in the consulting field.

I have come to a similar conclusion relative to graduate school attendance. I am confident that graduates of the HCC program will be excellent candidates for admission to any number of appropriate graduate degree programs.

I would only caution that the tentative initial scheduling of the required two co-op experiences during the summer only will provide challenges for the students in this program. Summer only co-op programs do not distinguish RIT students from students at other universities. This restrictive scheduling will force RIT students to compete with literally every other student and every other university for co-op opportunities during most highly competitive co-op/internship employment period. While we all appreciate the challenges in students completing co-op assignments during the traditional academic year I would be remiss if I did not point out my concerns regarding their opportunities within the tentative schedule identified.

Should the program proposal be accepted, my office will assign a Career Services Coordinator to the HCC program to support the career related needs of students, graduates and alumni of the program.

Please let me know if you have any questions or desire any additional information.

Bet regards,

Manny

Manny Contomanolis, PhD
Senior Associate Vice President and
Director RIT Office of Career Services and Cooperative Education
Bausch & Lomb Center
Rochester, NY 14623-5603
585 475-5464
www.rit.edu/co-op/careers
www.linkedin.com/mannycontomanolis/
External Letters of Support:

Carnegie Mellon

Human-Computer Interaction Institute
School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, Pennsylvania 15213-3890

Anind Dey
Charles M. Geschke Director
Human-Computer Interaction Institute
Associate Professor
412.877.7232
anind@cs.cmu.edu

September 8, 2014

To Whom It May Concern:

I am writing a letter of support for the proposed undergraduate degree program in Human-Centred Computing. I am the Director (i.e., department head) for the Human-Computer Interaction (HCI) Institute, one of seven departments in the School of Computer Science at Carnegie Mellon University. My department has an undergraduate dual major, an undergraduate minor, a Masters degree program in HCI, a Masters degree program in educational technology and learning sciences, and a PhD program in HCI. The department was established in 1993, has a faculty headcount of 25 and is at the leading edge of research and education in human-computer interaction. It is with this background and knowledge about HCI (or HCC) education that I provide my very strong support for this program.

I have been asked in particular to address the following questions:

☐ Would a graduate of this curriculum be employable by your organization or others similar to yours?
  o While this question does not apply to educational institutions such as mine, we would certainly consider graduates of this program for our Masters and PhD programs, and for research internships with our faculty.

☐ What is your prediction of the job market for a graduate from this curriculum 5 years from now? 10 years from now?
  o The current job market is extremely strong for graduates of our own similar BHCI program. I would expect the same to be true for graduates of this program. With an ever increasing focus on user experience to differentiate consumer products, as opposed to traditional hardware-focused specifications, the prognosis for students who have a background in understanding user needs, and designing, implementing and evaluating systems that address those user needs, is very, very good. As there are few programs specializing in this area, particularly at the undergraduate level, I would expect that the job market for graduates of the program to be strong for many years to come.

☐ What possibilities are available for a graduate from this program to advance in this area or occupation?
  o As stated above, graduates of the program would be sought after candidates for advanced degrees in human-computer interaction. In addition, graduates would be sought after by the large IT companies like Google, Facebook, Microsoft, Yahoo, etc., but also by smaller firms looking to hire people with experience in designing and implementing for human-centred systems.

☐ Would a graduate from this curriculum be expected to receive an advanced degree after employment?
  o Based on our own experience with students from our BHCI program, an advanced degree is certainly not a necessary condition for employment.
Are there opportunities for graduates from this program to enter an advanced degree licensing program? Are there limitations? GPA desired? Number of openings? Number of applicants versus number of accepts?

- As stated above, there would be opportunities to enter advanced degree programs. We and a number of other institutions offer advanced degrees in HCI or HCC. I cannot speak for the other programs, but our programs are quite competitive. There’s not a required GPA, but a required portfolio and letters of recommendation speaking to the creativity of the candidates and the aptitude for advanced education in HCI, for our Masters program. Our MHCI program admits 60-65 students every year and has more than twice as many students apply. Our PhD program admits students who have already shown an aptitude for advanced research in HCI, and admits about 6-8% of the applicants each year.

Should any portion of the curriculum be modified? If so, what and why?

- The curriculum, in general, looked fine. As one slight modification, I would suggest that the focus on design in the early years be shifted to be less about the tools and more about the techniques and methods that designers use. It is hard to understand what is covered in a course from only its name, but the courses “New Media Digital Design” sound more like they are about teaching how to use specific tools to accomplish design tasks, rather than learning fundamental techniques.

In general, I offer my strong support for this addition to your curriculum. The more institutions that offer such programs, the better off we are. Please do not hesitate to contact me should you have any additional questions.

Sincerely,

Anind K. Dey
Associate Professor & Charles M. Geschke
Director
Human-Computer Interaction Institute
Carnegie Mellon University
September 17, 2014

Review of HCC Proposal

Dear Prof. Bogaard:

Thank you for the opportunity to comment on your proposed HCC curriculum. Here are my responses to the questions you posed:

*Would a graduate of this curriculum be employable by your organization or others similar to yours?*

Graduates of this program could be employed in various capacities at my university. For example, we are currently undertaking a major accessibility upgrade of our many Web sites, and students from the Accessibility track of this program would be well qualified for that work.

*What is your prediction of the job market for a graduate from this curriculum 5 years from now? 10 years from now?*

Broad trends suggest continued growth in opportunities over the long term, subject of course to the overall state of the economy. The major discernible developments, including sensor system, personal health applications, Big Data, all have significant HCC components.

*What possibilities are available for a graduate from this program to advance in this area or occupation?*

In computing careers, long-term career advancement generally lies in leadership, with a basis in sound technical training. Graduates of this program can expect to participate in that advancement.

*Would a graduate from this curriculum be expected to receive an advanced degree after employment?*

This could go either way. In today's very strong job market, opportunities are available for bachelor's degree holders, but (in some cases) a master's degree can add value.
Are there opportunities for graduates from this program to enter an advanced degree licensing program? Are there limitations? GPA desired? Number of openings? Number of applicants versus number of accepts?

We do not have licensing programs, so if I understand the question correctly, I can't comment. If the question is intended to be "advance degree OR licensing program", graduates could be admitted to our computer science advance degree program provided they chose a sufficient number of more technical courses in planning their undergraduate work, and had a strong (>3.5) GPA.

Should any portion of the curriculum be modified? If so, what and why?

I'm impressed by the design, which appears to do an excellent job of creating a number of coherent curricular paths by drawing on a wide range of existing courses. The coop aspect is also a strength. I’d suggest that care is needed to ensure that the computing courses include enough actual programming. This can appropriately be Web oriented, but graduates whose skills are limited strictly to design and evaluation, without implementation skills, may find their opportunities limited.

Sincerely,

Clayton Lewis
Professor
Fellow, Institute of Cognitive Science
University of Colorado President’s Teaching Scholar
September 9, 2014

Dear Dan:

Thank you for the opportunity to respond to the proposed new degree. Below are my thoughts on the program.

A graduate from this program would be employable by my organization and others in the tech industry. From my personal experience, that graduate would work in roles such as UX Researchers, UX Prototypers, UX Designers, Interaction Designers, and Research Engineers. The market needs for such expertise is very high at the moment, especially for those who can perform multiple skills described in the program goals: analyze needs, design interfaces and interactions, develop prototypes, and evaluate user interfaces and user experiences. Those with advanced degrees such as a Master’s degree will, of course, be more desirable. However, a Master’s degree is not always required. Additionally, entirely different groups, namely research-oriented groups, will seek out those with PhDs in this area.

My expectation is that demand for these skills will increase in five years and will continue to do so in 10 years, especially as companies expand their services and reach into the Web and the mobile space (smartphones and tablets).

As far as opportunities after graduating with a Bachelor's degree from this program, graduates can easily continue their education through Master's and PhD programs in departments such as Computer Science, Information Science, Sociology, or Human-Computer Interaction. If graduates choose the industry route, they would start as individual contributors, then advance through roles of greater responsibilities (as any graduate with a Bachelor’s degree would).

Here are some changes to the program you might want to consider.

1) Additions to the concentrations already listed might include:
   a. Prototyping
Learning to create new user experiences quickly through low fidelity and high fidelity means.
ii. Learning to create new user experiences quickly on multiple platforms (from web, to mobile, to physical computing)

b. UX Research
   i. Running studies to understand users, to collect requirements, to enhance existing systems.
   ii. Running usability studies.
   iii. Working with engineering team to design new products and systems.

2) ISTE 120 and ISTE 140 seem like they might be programming courses. If so, the introduction to programming course could be done on smartphones right away. I have seen other schools teach introduction to programming via smartphones to great success. And although the Web is an important part of the computing experience, it is not the only part. Teaching only the Web could be a disservice to the students. Millions of users use smartphone and tablet (iOS and Android) platforms. Finally, computing is moving beyond smartphone and tablets—thus an introduction to physical computing would fit well into this program.

   section C, there are three goals and they are labeled: Goal 1, Goal 2, and Goal 5.

Sincerely,

Davi... Nguyen Principal
Researcher@Nokia

NOKIA
5 Mathilda Ave.
Sunnyvale, CA 94086
EVALUATION OF HUMAN CENTERED COMPUTING
RIT BACHELOR OF SCIENCE DEGREE PROGRAM

When I first received the request for review, I thought “What a great idea to have such a program”. After reading the proposal, I am convinced my initial impression is valid.

I have answered 5 of the 6 prescribed questions and hope my perspectives are informative.

1. Would a graduate of this curriculum be employable by your organization or others similar to yours?
   The interdisciplinary courses, the projects, and the coops add up to a program that will result in graduates who will appeal to many different types of organizations. To my knowledge, it is a quite unique undergraduate course and is strengthened by the two coops.

2. What is your prediction of the job market for a graduate from this curriculum 5 years from now? 10 years from now?
   Various names including user experience designers and interaction designer are used for jobs that would be open to graduates with HCC skills. Based on posted job openings, the current demand is very high. I see this continuing for 5 and even 10 years with the later years requiring new HCC skills as the technology advances.

3. What possibilities are available for a graduate from this program to advance in this area or occupation?
   This question ties into the previous one. Because of high demand, HCC graduates who keep up with new technology and design methods should encounter opportunities to work their way up on either the technical job ladder or the administrative one in a particular organization. Also, since HCC skills readily transfer across industries, advancement should be feasible by changing companies.

4. Would a graduate from this curriculum be expected to receive an advanced degree after employment?
   Employers will expect people to continually acquire new knowledge of principles and methods. In some employment environments this can be done on the job while in others new skills can be more quickly and easily obtained by going back to school. For some students, the latter may be only be feasible to do while they continue their job so eventually the graduate HCI program may need to be restructured to accommodate working people.
5. Are there opportunities for graduates from this program to enter an advanced degree licensing program? Are there limitations? GPA desired? Number of openings? Number of applicants versus number of accepts?
   Due to unfamiliarity with advanced degree licensing programs, I am not qualified to answer this question.

6. Should any portion of the curriculum be modified? If so, what and why?
   This program has been very well thought out and should produce successful students. There are a few additional elements not evident to me in the program that should be incorporated to help better position students for their jobs.
   - To better prepare them for their first coop, students should be given an understanding of entire product development processes, including agile, and the types of people they will collaborate with as an HCC designer.
   - If not already embedded in the psychology courses, students should be exposed to methods for both collecting and processing qualitative data. Collecting includes observation methods, interviewing, surveying, and using subjective scales. Processing includes methods for making sense of verbal and written comments. In my Human Factors career, applications of qualitative analysis have far exceeded instances of quantitative analysis.
   - One of the concentration tracks that should be available is HCC for embedded software. This is important for increasing job demand in medical and some industrial domains where software is used to drive devices and equipment.
   - The interdisciplinary nature of the program is its major asset and is, inherently, a challenge for student advisement. The proposal could be strengthened by addressing how students will be advised. For instance, it may be helpful for a student to have one advisor for the foundational first two years and another during the second two years while engaged in his/her concentration track.

I appreciate the opportunity to comment on this proposal and would be happy to support an HCC program when it is in place. I believe the program could attract more students to RIT and be a reliable feeder into the Master’s HCI program. The number of students from these two programs combined with students from related disciplines in Psychology, Design, New Media, and Industrial Engineering could comprise a critical mass for enabling a viable student chapter of the Human Factors and Ergonomics Society (HFES).

Sincerely,

Stanley Caplan, CHFP
President, Usability Associates
September 14, 2014
To the Program Reviewers:

I am happy to write in support of and provide comments regarding the proposal for an undergraduate program in Human Centered Computing at the Rochester Institute of Technology. As background, I am an Associate Professor of Computer Science & Engineering at the University of Washington. Human-Computer Interaction at the University of Washington, as organized around our DUB initiative, is one of the world’s top communities for HCI research and education. I completed my PhD in the HCI Institute at Carnegie Mellon, another top community. I lead many of our undergraduate and graduate HCI education efforts within UW CSE. I am also a founding member of the executive committee for MHCI+D, our new interdepartmental Master of Human Computer Interaction + Design.

I have been asked to comment on five specific questions:

Would a graduate of this curriculum be employable by your organization or others similar to yours?  Yes. As a university, we primarily “hire” recent undergraduates by admitting them into our doctoral programs and employing them as research assistants. Our programs are extremely competitive with very limited capacity, but I can imagine star graduates of this program being admitted and hired in HCI-related departments at the University of Washington (e.g., Compute Science & Engineering, Human Centered Design & Engineering, The Information School). The proposed program is designed around the knowledge and skills we seek in our admits.

What is your prediction of the job market for a graduate from this curriculum 5 years from now? 10 years from now? Like the rest of the field of computing, the area of Human Centered Computing is growing and expected to continue growing. In fact, most of the projected growth in science, technology, engineering, and mathematics (STEM)-related jobs is actually in computing. There is a high value in having a diversity of programs that address this need. At the University of Washington, we have found that our programs in Computer Science & Engineering, Human Centered Design & Engineering, and Informatics are all complementary and highly in demand.

What possibilities are available for a graduate from this program to advance in this area or occupation? There are a number of advanced degree programs that graduates from this program could be accepted to, both at the Master’s and Doctorate levels. There are also ample opportunities for immediate employment doing user research, product management, design or fieldwork at major technology firms, medium-sized companies, and creating or joining startups.

Would a graduate from this curriculum be expected to receive an advanced degree after employment? No. There are advanced degrees in this area, but the basic skillset is appropriate for many opportunities.
Should any portion of the curriculum be modified? If so, what and why?

The curriculum appears to heavily favor quantitative methods, with an emphasis on experimental methods and statistical analyses. This is important, but more qualitative methods are equally important. Methods like contextual inquiry support “getting the right design” as a complement to “getting the design right” in more experimental approaches to the later stages of design. In addition, some students might want opportunities to develop backend skills (e.g., databases, cloud infrastructure). These additional skills would be most valuable to students who go on to operate as generalists (e.g., in startups, in consulting, other small team contexts that are not resourced for specialists and therefore require generalists).

Human Centered Computing is an important and growing area of computing. Please accept my support of this new program, and please contact me if I can provide any context or clarification for my comments.

Sincerely,

James Fogarty
Associate Professor
Computer Science & Engineering
University of Washington
Hi Dan,
Please accept my apologies for sending this a day late. Please see my feedback below.

Thanks!
Teresa

On Fri, Sep 12, 2014 at 11:59 PM, Dan Bogaard <Dan.Bogaard@rit.edu> wrote:
Teresa -

Thank you so much for taking the time to review our new degree. All of us here are very excited about the possibilities it presents.

We are under somewhat of a tight deadline, so I would ask you to review the 7 pages attached (overview of degree along with a curricular layout), and respond to me with your thoughts by Monday, September 22nd. It would be best if you emailed me a memo (on your university or company letterhead) that addressed the following questions as appropriate:

- Would a graduate of this curriculum be employable by your organization or others similar to yours? 
  Absolutely. User Experience professionals have a mixed background, but HCI programs seem to be the standard program of choice for students interested in the space.

- What is your prediction of the job market for a graduate from this curriculum 5 years from now? 10 years from now?
  I only see this field growing over time. More and more focus is being put on the user experience - the entire user experience.

- What possibilities are available for a graduate from this program to advance in this area or occupation?
  Graduates from the HCC program can expect to work in the user experience field as an interaction designer, visual designer, user researcher, or information designer

- Would a graduate from this curriculum be expected to receive an advanced degree after employment?
  To my knowledge, this is the first undergraduate degree in the HCI field. Usually professionals in this field do seek a graduate-level degree.

- Are there opportunities for graduates from this program to enter an advanced degree licensing program? Are there limitations? GPA desired? Number of openings? Number of applicants versus number of accepts?
  N/A

- Should any portion of the curriculum be modified? If so, what and why?
  The program looks great. My only suggestion is to add a class (or add to material) about ideation methods for early on in the design process. (Universal Methods of Design should be a core program book, for instance)

Thank you again for taking this on, it is a huge help. If there is any further information that you need or anything that we can do for you in the future, please feel free to ask.

Dan
______________________________
Daniel Bogaard
Associate Professor
Undergraduate Program Coordinator
Information Sciences and Technologies Department
Golisano College of Computing and Information Sciences
APPENDIX E
Space Allocation/Renovation Request

The implementation of this degree will require no new lab or classroom space.

Space Allocation/Renovation Request Form
APPENDIX F

Full Faculty CV's

Include a CV for each faculty member who will teach in the program and who is listed on Table 2 and 3 in the proposal as Appendix F.
Research Interests

My research focuses on building and studying new devices and techniques to improve interactions between humans and their personal mobile devices. The goal of my work is to allow people to be less focused on their technology and more engaged with the world, while still reaping the creativity and productivity benefits of their devices.

Education

2009
Ph.D. Computer Science
Georgia Institute of Technology, Atlanta, GA

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

2001
B.S. Computer Science
Georgia Institute of Technology, Atlanta, GA

Employment

2013–Present
Senior Researcher
Samsung Research America
UX Innovations Lab, Mobile UX Lab
San Jose, CA

2009–2013
Senior Researcher II, New Mobile Forms and Experiences
Nokia Research Center; CTO Advanced Engineering
Santa Monica, CA; Sunnyvale, CA

2009
Research Scientist II
Georgia Tech Research Institute
Atlanta, GA

2002–2009
Graduate Research Assistant Georgia
Institute of Technology Atlanta, GA

2006–2007
Expert Patent Consultant Devonwood
Logistics Atlanta, GA

2004
Summer Intern
University for Medical Information Technology (UMIT)
Innsbruck, Tyrol, Austria

2003
Summer Intern
Advanced Telecommunication Research Institute International (ATR)
Keihanna Science City, Kyoto, Japan
2002–2003  Computer Science Engineer
Rehabilitation Research & Development Center, Department of Veterans Affairs
Atlanta, GA

2002  Exchange Graduate Research Assistant
Swiss Federal Institute of Technology (ETHZ)
Zürich, Switzerland

2000–2002  Director of Production, Atlanta
Charmed Technology, Inc.
Atlanta, GA

1999–2001  Undergraduate Research Assistant
Georgia Institute of Technology
Atlanta, GA

Xcellenet, Inc.
Atlanta, GA

Research and Creative Scholarship

Thesis

T1. Title: Enabling Mobile Microinteractions.
Completed: May 2010.
Advisor: Dr. Thad Starner.
University: Georgia Institute of Technology.

Conference Presentations (h-index: 12; i-10 index: 13)

Note: conference publications appear above journal publications, reflecting the higher selectivity and prominence of conference publication in computer science. See, for example, the Computing Research Association’s memo on Evaluating Computer Scientists and Engineers For Promotion and Tenure. h-index and i-10 index are as calculated by Google Scholar.


Conference Tutorials and Workshops


Other Publications

Published Journal Papers (refereed)


Published Books & Parts of Books (refereed)


Technical Reports (not submitted elsewhere)


Other

Invited Keynote and Lecture Addresses


Patents and Patent Applications

PAT10–26. 18 other patent applications filed with USPTO during 2010–2013 with Nokia, and pending publication.


Published Papers (non-refereed)


Technical Reports (not submitted elsewhere)

Videos and Demonstrations


Selected Popular Press

P8. “Yup, Nokia’s designing a watch too”. In Engadget, October 17, 2013.

P7. “Control your phone with a magnetic ring”. In New Scientist One Per Cent blog, April 11, 2011 and Gizmodo, April 13, 2011.


Research Honors

2005–2009 Georgia Tech Presidential Fellow. Provided additional funding for graduate expenses.

2003 SAIC Best Student Paper award for “Learning Significant Locations and Predicting User Movement with GPS.”

2003 Ford Motor Company Research Laboratory’s Best Design Solution for schedule learning and prediction.

2000 Second place judges’ choice award in annual Undergraduate Research competition for Gesture Pendant.

2000 Second place peoples’ choice award in annual Undergraduate Research competition for Gesture Pendant.
Service

Memberships and Activities in Professional Societies

- Institute of Electrical and Electronics Engineers (IEEE) Computer Society.
- Association for Computing Machinery (ACM).
- Charter member of Georgia Tech chapter of Upsilon Pi Epsilon, an international honor society for the Computing and Information disciplines.

Editorial Board Memberships

2007–2012  Associate Editor for Hindawi Advances in Human-Computer Interaction (AHCI).

Conference Chairing & Organization Activities

- 2015  Co-Chair of Panels, Seventeenth International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).
- 2013  Co-Chair of Program Committee, Fifteenth International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).
- 2012  Co-Chair of Proceedings, Twenty-fifth ACM Symposium on User Interface Software and Technology ( UIST ).
- 2012  Co-Chair of Workshops, Fourteenth International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).
- 2012  Co-Chair of Program Committee, Sixteenth IEEE International Symposium on Wearable Computers (ISWC).
- 2011  Videos Chair, Fifteenth IEEE International Symposium on Wearable Computers (ISWC).
- 2004–7  Chair of Publicity for IEEE International Symposium on Wearable Computers (ISWC).

Conference Committee Activities

- 2014  Program Committee, Fifteenth ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).
- 2013  Program Committee (Systems/Technologies subcommittee), CHI 2014.
- 2013  Program Committee, 12th International Conference on Mobile and Ubiquitous Multimedia (MUM).
- 2012  Program Committee, Fourteenth ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).
- 2011  Supplemental Program Committee Member, Ninth International Conference on Pervasive Computing.
- 2011  Senior Program Committee, Thirteenth ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).
Program Committee, Fifteenth IEEE International Symposium on Wearable Computers (ISWC).

Program Committee, Twelfth International Conference on Multimodal Interfaces and Seventh Workshop on Machine Learning for Multimodal Interaction (ICMI-MLMI).

Program Committee, Twelfth ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).

Program Committee, Eleventh ACM International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI).

Non-Committee Volunteer Positions


2010 National Science Foundation grant funding panel review member.

Conference & Journal Review Activities


2012 ACM International Journal of Human-Computer Studies (IJHCS), International Symposium on Mixed and Augmented Reality (ISMAR), Nordic Conference on Human-Computer Interaction (NordiCHI), UIIST, ISWC, MobileHCI, UbiComp, CHI.

2011 IEEE Computer magazine, International Conference on Intelligent User Interfaces (IUI), CHI, UIIST, MobileHCI, ISWC.


2009 CHI, UIIST, MobileHCI, ISWC.

2008 CHI, Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI), ACM Conference on Ubiquitous Computing (UbiComp), ISWC.


2004 ISWC.
2003 ISWC.
2002 IEEE International Symposium on Wearable Computers (ISWC). Student Volunteer Activities
2004 Student volunteer for Eighth IEEE International Symposiums on Wearable Computers (ISWC).
2003 Student volunteer for Seventh IEEE International Symposiums on Wearable Computers (ISWC).
Objective
My focus is in access to education and accessibility for disadvantaged populations, with a Human Computer Interaction approach. A theme touching on all above areas is an examination of the ethical implications of computing. In the past I was a team member on the development of an interface supporting deaf and hard of hearing students in academic environments. I am currently examining mobile technology usage, safety and security, in relation to ethical foundations and moral decision-making with related consequences.

Experience

Associate Professor, Rochester Institute of Technology
Rochester NY USA 2001-present
Research in the field of computing related to ethics, accessibility and Human Computer Interactions (HCI.) Generation of educational materials and innovative teaching styles to support the challenges of teaching ‘soft’ content of computing.

Oracle Programmer/Developer, Seneca Foods
Rochester NY USA 2000-2001
Generation of interface between users and Oracle database, focusing on Human Computer Interaction. Responsible for educating current employees on Oracle concepts.

Instructor, Information Technology Institute
Halifax, Nova Scotia, Canada 1999-2000
Role included delivery of educational materials in both formal lecture and informal team environments on a variety of subjects including but not limited to Java programming, Web development, Networking concepts and professional development.

Education
Masters, Information Technology Education, Dalhousie University 2000
Bachelors degree in Education, Dalhousie University 1993
Bachelors degree in Arts, Advanced Major, Dalhousie University 1992

Skills
Microsoft Certification, Networking Essentials
TC-5, Teaching certificate
Certificates, Conflict Resolution and Mediation
Certificate, Community Development
Certificate, Adult Education
Certificate, Teaching English as a Second Language
Publications

Beaton, Catherine “Do We Owe Them: The Impact of e-Learning on Disadvantaged Communities” University of Groningen, Groningen, NL (October 2013) Book version ISBN: 978-1-908272-73-7


Bogaard, Daniel, Beaton, Catherine, Walsh, Shawn, MacLeod, Janet, West, Leanne, Adler, Ethan, Lalley, Peter, "Enhancement of Educational Access through Emerging Technologies: Real Time Text Generation and Unified Information Display Methods”, Faculty Institute on Teaching and Learning, Rochester Institute of Technology, May 2010


Beaton,Catherine., Stanislow, J., Cognitive Connections with the Real World for Learning, Cal-Ed /CAID( March, 2005)


Irving (Beaton), Catherine, Problem Gambling and the Deaf Consumer, Department of Community Services, 1996

Irving (Beaton) Catherine., Needs Assessment on Health Care Services for Deaf, Deafened and Hard of Hearing Nova Scotians, Department of Health, 1993

Presentations

“Oral Final Exams: Discovering this Untapped Assessment Tool”, FITL, RIT May 30th 2012

Invited Judge, Internet Safety, Allendale Columbia School, Jan. 9th, 2012

Lalley, Peter, Bogaard, Dan, Beaton, Catherine  http://www.ist.rit.edu/~546/fitl/poster2010.pdf


Beaton, Catherine, Judge, Richard Tapia Celebration of Diversity in Computing Conference”, Orlando Florida, October 14th-17th, 2007

Beaton, Catherine, Invited Speaker, “Richard Tapia Celebration of Diversity in Computing Conference”, Orlando Florida, October 14th-17th, 2007
Beaton, Catherine “Ethics in Information Technology”, Networking Freshman Class, October 19th, 2007


Beaton, Catherine, Bogaard, Daniel S., Presentation, IMA as a Tool for Accommodated Learning, Atlantic Centre for Students with Disabilities, St. Mary’s University, Halifax, Canada. (May 25th, 2006)


Beaton, Catherine, Doolittle, R., Lundgren, C, Lilly Conference, Oxford Ohio Workshop: “Give it up! Relinquishing Control in the Classroom” (Nov. 2005)


Beaton, Catherine, Doolittle, R., Lundgren, C., “Give it Up!” FITL, Rochester NY (May 2005)


Beaton, Catherine. Lalley, P. PacRim conference, Honolulu, HI, Poster: “CHOICES: Emerging Technologies for Deaf and Hard of Hearing People” (Feb 2005)

Beaton, Catherine, Albertini, John, Foster, Sue, “Brown Bag Lunch Series, Technology and Deafness,” NTID, Rochester NY, Feb 9, 2005


**Funded Projects**

PI, Fead grant, Ethics and Accessibility in Computing, 2013-2014

Co-Pi, Funded Grant: Speech to Text Systems: Comparative Analysis of Text Generation and Display Methods, Research in Disabilities Education, National Science Foundation, funded 09/01/06 (ongoing work)
PI, Dodge grant, studying attention in the classroom, 2006-2007 (Completed project)

Co-PI, Using a Tablet PC and C-Print to Support Deaf and Hard of Hearing Students, a US Department of Education SteppingStones of Technology Innovations for Students with Disabilities Grant (2005-2007)

PI, FEAD grant, Access and Accessibility, 2006-2006 (completed project)

PI, Hewlett Packard Grant, Technology for Teaching Grant (2005-2006 – completed project)


PI, Department of Communities, Culture and Heritage, Bridging the Gap (1993)

**Synergistic Activities**

NSF Panelist Reviewer, Baltimore, August 2/3, 2010

Technical Committee and the Education Committee for IFHOH, the International Federation of Hard of Hearing (2005-2007)

Establishment of Interpreting Services and Computerized Notetaking in Newfoundland and Labrador: Co-Primary Investigator of project, supervisor solely responsible for budget and project management. (1998)

Problem Gambling in Deaf community: Project examining gambling addiction within Deaf community. Primary Investigator and researcher. Resulted in national publication. (1996)

Disabled Persons’ Commission research: Joint project with Disabled Persons’ Commission investigating reforms in N.S. heath care resulting in Tier system. Board member, and co-author of resultant paper. Supervised two researchers. (1995)

*Needs Assessment* Project examining Health Care access for Deaf, deaf and HOH Nova Scotians. Co-Primary Investigator and supervisor of four researchers. (1993)


Co-Director of the initiative “Emerging Technologies and Assistive Communications” from 2004 – 2005. This initiative gave rise to the Center on Access Technology in Deaf Education at NTID/RIT.
Professional Experience

Undergraduate Program Coordinator
Rochester Institute of Technology, Rochester, New York
Winter 2012 – Present

Currently (Feb 2012-present) serving as the Undergraduate Program Coordinator for the Information Sciences & Technologies Department. This position covers the curricular responsibilities of the three undergraduate degrees within the department (Information Technology, Networking & Systems Administration, and Medical Informatics). Responsible for the curricular conversion from the previous quarter based terms to semesters (starting fall 2013) and creation of a new Human-Centered Computing degree.

Associate Professor
Rochester Institute of Technology, Rochester, New York
Fall 2002 – Present

Develop curriculum, minors (VWDC), degrees.


Courses: GCCIS- 102, 230, 320, 330, 409, 495, 536, 539, 546, 590, 599, 737, 739, 741, 751, 899.

Committees: IST Undergraduate Program Coordinator (2012-Present), IST Curriculum Committee Non-Voting Member (part of UG Coordinator duties 2013-Present), IT Undergraduate Curricular Semester Conversion Coordinator (2012-Present), Eisenhart Award for Outstanding Teaching Committee (Group Chair 2012-Present), IST Web Group (Chair 2009-2012), GCCIS Mid-Tenure (Chair 2010-present), IT Undergraduate Curriculum, IT Online Presence (Chair – 2003-2004), GCCIS Student Scholars, GCCIS Technical Resource Group, Institute Web Advisory Committee, Institute Academic Support, Institute Web Security Standard Core Team, Computer Mediated Experience Group

Visiting Professor
Rochester Institute of Technology, Rochester, New York
Fall 2001 – 2002s

Develop curriculum.
Teach graduate and undergraduate courses involving programming, imaging, mixed media, sound, animation, production and design. Discuss qualitative and technical considerations in digital and analog media. Emphasize user-centered design with an awareness of human factors and methods for assessment.

Courses: GCCIS-320, 330, 409, 737, 741

Committees: Multimedia Interest Group

Instructor, Interactive Digital Media
Rochester Institute of Technology, Rochester, New York
Spring 2001

Developed curriculum.

Taught an undergraduate course involving imaging, mixed media, sound, animation, production and design. Discussed qualitative and technical considerations in digital and analog media. Emphasized user centered design with an awareness of human factors and methods for assessment.

Graduate Teaching Assistant
Rochester Institute of Technology, Rochester, New York
Fall 2000 to Spring 2001

Taught undergraduate lab sections in Interactive Digital Media and Introduction to Multimedia. Tutored in Multimedia Laboratory for all facets of media types.

General Consulting
1997 – present

Produce multimedia, computer hardware and software system support, digital imaging support, and web development.

RIT – Advance NSF Study
  Responsible for creation of their web application, project ongoing. http://nsfadvance.rit.edu/
  2012-present

RIT – Information Sciences & Technologies Department
  Responsible for creation (and student supervision) of the departmental web presence, project ongoing. http://www.ist.rit.edu/
  2011-present

Rochester General Hospital – AOM Study
  Responsible for creation of the messaging layer and front-end code of a web application. http://ist.rit.edu/~aom/
  2010-present

Emergency Service Directory
  Responsible for creation of the messaging layer and front-end code of a web application. http://emergencyservicesdirectory.org/
  2009-2011

Website, website design, website programming, browser expert –
Interviewed by the Rochester Democrat & Chronicle on Responsive Web Design.


Interviewed by National Public Radio on the release of Google’s Chrome browser.


Asked to serve as an expert in a civil lawsuit. 2007-2009

Packaging Science Department, RIT -

IT Department, RIT -
Updated and re-wrote the SD&M website. http://it.rit.edu/sdmMS.php. 2005

CorrectDeck
Created an online deck/color choosing system in Flash: http://www.correctdeck.com/. 2005

IT Department, RIT -
Created the new IT Orientation website for incoming freshman. http://it.rit.edu/~itorientation/ 2005

Surreal Dimensions
Online Real-Estate web commerce. Responsible for client side implementations, digital image and QTVR work. 2003-2005

Turn Tennis & Swim Club
Created a web presence. 2003-2004

Fusion Productions
General Consulting – Primarily teaching their staff Flash & ActionScript. 2003

Thomas R. Paddock Oriental Rug Exchange
Company interested in cataloging entire inventory of oriental rugs (~5000). Responsible for choosing and implementing a digital imaging system along with streamlining production within PhotoShop. 2000-2002

NeoSci
Multimedia development for an interactive chemistry CD-ROM, 2001

Don Cochran Photography
Update and renovate web presence. 2000

Instructor, ‘Web Animations’, Kids on Campus Program
Rochester Institute of Technology
Summer 2002
Taught children age’s 9-15 to create vector animation, multimedia, interactive web page creation and internet use.

Software used: Flash, Netscape, Internet Explorer, and Director.

_Instructor, ‘Web Masters’, Kids on Campus Program_
Rochester Institute of Technology
Summer 2000, 2001

Taught children age’s 9-15 digital image making, multimedia, web page creation and internet use.

Software used: Netscape, Internet Explorer, Dreamweaver, Flash, PhotoShop, and Director.

_Personal System Administrator, Digital Imaging_
School of Photographic Arts and Sciences
Rochester Institute of Technology, Rochester, New York
6/97 – 8/00

Responsible for six computer labs, all of which were set up primarily for digital imaging. Responsibilities included keeping abreast of current trends in technology (hardware and software), student and faculty instruction, and daily maintenance of the labs. Labs were populated with over 100 Apple Macintosh computers, 10 PC Clones (some as workstations and one as a Raster Image Processor), 5 Digital Studios, an assortment of digital output devices, and variety of digital scanners (from 35mm to a drum scanner).

_Digital Equipment Coordinator_
Eastman Kodak Company, Kodak Professional Division, Rochester, New York
9/96 – 6/97

Responsible for a pool of Kodak’s Professional Digital Imaging equipment. I provided equipment, instruction, and support with prospective clients for trial periods while they considered purchases. Also responsible for supplying and attending trade shows and preventative maintenance. Equipment under my care included: Kodak DCS 410, 420, 460, & 465, Kodak Digital Color Wheel, Kodak EOS 1, 3, & 5, and the Kodak DCS 8650 Thermal Dye-Sub Printer.

_Facilities Manager_
School of Photographic Arts and Sciences

Responsibilities included care and maintenance of analog and digital photographic equipment. Entirely responsible for daily operation of student equipment checkout facility.

_Assistant, Photographic Services_
The International Museum of Photography and Film at George Eastman House, Rochester, New York 6/93-6/94

Responsibilities included studio photography, darkroom work, copy-work, densitometry, and on-site imaging.

_Instructor, Platinum / Palladium Workshop_
Certificate Program
The International Museum of Photography and Film at George Eastman House, Rochester, New York Summer 1994

Developed curriculum.

Taught how to make photographic prints with this antiquated printing process. Topics included historical aspects, the chemistry of this process and specifically of this catalyst, densitometry, coating the sub-straight, and exposure control.

_Instructor, Large Format Photography_
The Community Darkroom, Rochester, New York
Fall 1993, & Summer 1994

Developed curriculum.

Subjects covered included use of a large format camera, exposure and density control and measurement, and The Zone System.

_Assistant Associate Photography Instructor_
Large Format Photography
Indiana University, Bloomington, Indiana
Spring 1992

Responsibilities included curriculum development and preparation of lecture material in conjunction with lead instructor.

**Educational Background**

Master of Science Degree, Information Technology
Department of Information Technology
Rochester Institute of Technology, Rochester, New York, August 2001

Advanced Graduate Certificate in Interactive Multimedia Development
Department of Information Technology
Rochester Institute of Technology, Rochester, New York, May 2001

Bachelor of Fine Arts in Photography (with Honors)
Minor in Art History
Minor in Mathematics
School of Fine Arts
Indiana University, Bloomington, Indiana, May 1992

Purdue University
School of Engineering
Completed 32 credit hours
Grants


NTHi Immunity in Young Children, Rochester General Health System, Consultant (Steve Zilora – PI). A one year award of $16,059, Jan 2010-Dec 2010

Acute Otitis Media Database Project, Rochester General Hospital, Co-PI (Steve Zilora – PI). A one year award of $18,000, June 2011-June 2012.

RIT FEAD Grant, Web Application Penetration Tester Course, Co-PI (Daryl Johnson & Bill Stackpole – Co-PI’s). A one year award to complete a SANS course in Web Pen Testing, $16,884, Dec 2011-Feb 2012.

Publications & Presentations


Bogaard, Daniel, Beaton, Catherine, Walsh, Shawn, MacLeod, Janet, West, Leanne, Adler, Ethan, Lalley, Peter, "Enhancement of Educational Access through Emerging Technologies: Real Time Text Generation and Unified Information Display Methods", Faculty Institute on Teaching and Learning, Rochester Institute of Technology, May 2010


Bogaard, Daniel S., Beaton, Catherine I. Invited Presentation, IMA as a Tool for Accommodated Learning, Atlantic Centre for Students with Disabilities, St. Mary’s University, Halifax, Canada, (May 25th, 2006).


Bogaard, Daniel S., Vullo, Ronald P., Ph.D., Christopher D. Cascioli “Better than HTML Web: Dynamically Generated SVG Web sites”, WWW@10 Conference, Rose-Hulman Institute of Technology, Terre Haute, Indiana, (October 2, 2004).


Selected Honors and Awards

Awarded Eisenhart Outstanding Teaching Award, Rochester Institute of Technology, 2011-2012


Multimedia Graduate Assistant Full Scholarship, Rochester Institute of Technology, Rochester, New York, 2000

Teaching Internship Grant, Indiana University, Bloomington, Indiana, 1992

First Place, “The National Society of Arts and Letters Regional Art Exhibit,” Fine Arts Gallery, Indiana University, Bloomington, Indiana, 1992


Non-Teaching Internship Grant, Indiana University, Bloomington, Indiana, 1991

First Place, “The National Society of Arts and Letters Regional Art Exhibit,” Fine Arts Gallery, Indiana University, Bloomington, Indiana, 1991
CAROLINE M. DELONG
Department of Psychology, College of Liberal Arts, Rochester Institute of Technology
18 Lomb Memorial Drive, Rochester, NY 14623
phone: 585-475-4191 · email: cmdgsh@rit.edu · web: http://people.rit.edu/cmdgsh

RECENT POSITIONS

**Associate Professor**, Rochester Institute of Technology  
Department of Psychology, College of Liberal Arts  
7/13 – present

**Assistant Professor**, Rochester Institute of Technology  
Department of Psychology, College of Liberal Arts  
9/08 – 6/13

EDUCATION

**University of Hawaii**, Honolulu, HI  
Ph.D., Psychology, Specialization: Human and Animal Cognition  
2003

M.A., Psychology, Specialization: Human and Animal Cognition  
2000

**New College of Florida**, Sarasota, FL  
B.A., Psychology / Biology  
1997

TEACHING EXPERIENCE

**Associate Professor of Psychology**, Rochester Institute of Technology  
Courses Taught: Perception, Cognitive Psychology, Research Methods III, Senior Seminar: Comparative Cognition, Graduate Cognition  
7/13 – present

**Assistant Professor of Psychology**, Rochester Institute of Technology  
Courses Taught: Introduction to Psychology, Scientific Writing, Cognitive Psychology, Psychology of Perception, Learning and Memory, Language and Problem Solving, Senior Project I and II, Independent Study, Advanced Cognition (graduate course)  
9/08 – 6/13

**Instructor**, SPARK Summer Science Program, Brown University  
Taught ‘Echolocation in Dolphins and Bats’ course for 7th & 8th grade students  
7/05, 7/06, 7/07

**Instructor**, Dept. of Neuroscience, Brown University  
Taught ‘The Biology of Bats and Dolphins’ in collaboration with James Simmons  
9/04 – 12/06

**Visiting Assistant Professor of Psychology**, New College of Florida  
8/03 –

**Instructor**, Dept. of Psychology, University of Hawaii  
Course Taught: Cognitive Psychology  
9/02 – 12/02

**Teaching Assistant**, Dept. of Psychology, University of Hawaii  
Courses: Cognitive Psychology, Methodological Foundations of Psychology  
9/97 – 5/99

**Teaching Assistant**, Psychology Program, New College of Florida  
Course: Introduction to Psychology  
8/96 – 12/96
**RESEARCH EXPERIENCE**

**Visiting Researcher**  
Seneca Park Zoo, Rochester, NY  
6/10 – present

**Visiting Researcher**  
Mystic Aquarium and Institute for Exploration, Mystic, CT  
1/06 – 8/09

**Postdoctoral Research Associate**, Dept. of Neuroscience, Brown University  
Research advisor: James Simmons  
8/04 – 3/08

**Research Assistant**, Hawaii Institute of Marine Biology  
Research advisors: Whitlow Au, Herbert Roitblat, Paul Nachtigall  
6/98 – 7/03

**Research Assistant**, Békésy Laboratory of Neurobiology, University of Hawaii  
Research advisors: Patricia Couvillon & M.E. Bitterman  
3/03 – 6/03

**Research Assistant**, Dept. of Psychology, University of Hawaii  
Research advisor: Catherine Sophian  
4/99 – 6/01, 1/02 – 5/02

**Research Assistant**, New College of Florida & Epcot’s Living Seas  
Research advisor: Heidi Harley  
2/96 – 5/97

**GRANTS AND AWARDS**

**External Grants**

- PI on grant submitted to **NSF BCS: Perception, Action and Cognition Program**  
  “Audiovisual Object Recognition” ($246,396; proposal declined)  
  2/14

- PI on grant submitted to **River Otter Alliance Foundation**  
  “Visual Object Recognition in North American River Otters” ($200 awarded)  
  10/12

- PI on grant submitted to **American Association of Zoo Keepers**, Milwaukee  
  “Visual Object Recognition in North American River Otters” ($500 awarded)  
  7/12

- PI on grant submitted to **NSF BCS: Perception, Action and Cognition Program**  
  “Auditory Recognition of Spatial Structure” ($147,121; proposal declined)  
  8/10

**Internal Grants (Rochester Institute of Technology)**

- **Center for Imaging Science Research MicroGrant** ($5,700)  
  “Visual Perception in Goldfish”  
  6/14

- **NSF ADVANCE Connect @RIT Grant** proposal team ($12,000)  
  “Application of the Appreciative Inquiry Process in the College of Liberal Arts”  
  2/14

- **Provost’s Faculty Mentoring Grant** ($1,653.53)  
  “Psychology Women’s Mentoring Group”  
  1/14

- **Student Affairs Division Interactive Learning Support Grant** ($132)  
  “Seneca Park Zoo Field Trip for Seminar in Psychology”  
  9/13

- **College of Liberal Arts Faculty Development Grant** ($4,482)  
  “Discrimination of Echoes from Aspect-Dependent Objects by a Bottlenose Dolphin”  
  3/13

- **College of Liberal Arts SRSP Proposal Development Grant** ($4,000)  
  “Auditory Object Recognition”  
  2/13
<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Amount</th>
<th>Date</th>
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<tbody>
<tr>
<td>College of Liberal Arts Faculty Research Award</td>
<td>$1,500</td>
<td>11/12</td>
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<tr>
<td>“Recognizing Objects from Multiple Orientations Using Dolphin Echoes”</td>
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<td>College of Liberal Arts Faculty Research Award</td>
<td>$1,500</td>
<td>11/12</td>
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<tr>
<td>“Ongoing Study of Numerosity Discrimination in Goldfish”</td>
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<tr>
<td>College of Liberal Arts Faculty Research Award</td>
<td>$1,000</td>
<td>5/12</td>
</tr>
<tr>
<td>“Visual Object Recognition in North American River Otters”</td>
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<tr>
<td>College of Liberal Arts Faculty Research Award</td>
<td>$1,000</td>
<td>5/12</td>
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<tr>
<td>“Numerosity Discrimination in Goldfish (Carassius auratus)”</td>
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<td>College of Liberal Arts Faculty Development Grant</td>
<td>$2,978</td>
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<td>“Neural Network Modeling of Auditory Object Recognition”</td>
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<td>College of Liberal Arts Faculty Research Award</td>
<td>$1,000</td>
<td>11/11</td>
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<tr>
<td>“Object Recognition in Goldfish (Carassius auratus)”</td>
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<tr>
<td>Student Affairs Division Interactive Learning Support Grant</td>
<td>$100</td>
<td>10/11</td>
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<td>“Seneca Park Zoo Presentation on Animal Sensory Systems”</td>
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<tr>
<td>College of Liberal Arts Faculty Development Grant</td>
<td>$3,000</td>
<td>3/11</td>
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<tr>
<td>“Auditory Recognition of Spatial Structure”</td>
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<tr>
<td>Office of the Vice President for Research Seed Funding Grant</td>
<td>$5,000</td>
<td>12/09</td>
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<td>“A Comparative Study of Object Constancy in Dolphins and Humans”</td>
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<tr>
<td>College of Liberal Arts International Travel Grant</td>
<td>$750</td>
<td>10/09</td>
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<tr>
<td>College of Liberal Arts Faculty Research Award</td>
<td>$750</td>
<td>10/09</td>
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<tr>
<td>“Auditory Features Used by Human Listeners to Discriminate Fish Prey”</td>
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<tr>
<td>College of Liberal Arts Faculty Research Award</td>
<td>$750</td>
<td>5/09</td>
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<tr>
<td>“Discrimination of Fish Prey by Human Listeners Using Dolphin &amp; Porpoise Signals”</td>
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<tr>
<td>Student Affairs Division Interactive Learning Support Grant</td>
<td>$175</td>
<td>5/09</td>
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<tr>
<td>“Sensory Perception in Birds: Presentation by Wild Wings”</td>
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<tr>
<td>Student Affairs Division Interactive Learning Support Grant</td>
<td>$225</td>
<td>5/09</td>
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<tr>
<td>“Field Test of Object Recognition Apparatus at Mystic Aquarium”</td>
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</table>

**Student and Postdoctoral Grants and Awards**

- NASA Rhode Island Space Grant Biosonar Research Grant (two awards) 2007
- Brown University Brain Sciences Program Pilot Research Grant 2005
- American Psychological Association Dissertation Research Award 2003
- American Association For University Women Pacific Dissertation Fellowship 2002
- Soroptimist International Founder Region Dissertation Fellowship 2002
- University of Hawaii Graduate Student Organization Travel Grant 2001
- Society for Marine Mammalogy Student Travel Grant 2001
- University of Hawaii Travel Grant for Professional Development 2001
- Acoustical Society of America Student Travel Grant 2000
- New College of Florida Foundation Research Grant 1997
- New College of Florida Alumni Association Research and Travel Grant 1997
**PUBLICATIONS**

**PEER-REVIEWED**

* indicates student co-author


**PUBLICATIONS IN PREPARATION**


**OTHER PUBLICATIONS**


**PRESENTATIONS**

**INVITED PEER-REVIEWED CONFERENCE PRESENTATIONS**

* indicates student co-author


INVITED SEMINARS
* indicates student co-author


INVITED COLLOQUIA

Rochester Institute of Technology, Rochester, NY  Feb, 2010; Apr, 2012; Feb, 2014
New College of Florida, Sarasota, FL  March, 2009
Western Illinois University, Moline, IL  March, 2008
Rochester Institute of Technology, Rochester, NY  February, 2008
St. Bonaventure University, St. Bonaventure, NY  February, 2008
California Polytechnic State University, San Luis Obispo, CA  January, 2008
Butler University, Indianapolis, IN  December, 2007
California State University East Bay, Hayward, CA  January, 2007
Vassar College, Poughkeepsie, NY  December, 2002
PEER-REVIEWED CONFERENCE PRESENTATIONS
* indicates student co-author


STUDENT SYMPOSIUM PRESENTATIONS
* indicates student author


discriminate among different numerosities. Poster presented at the RIT Undergraduate
Research Symposium, Rochester, NY.

recognition by humans listening to dolphin echoes. Poster presented at the RIT
Undergraduate Research Symposium, Rochester, NY.

otters (*Lontra canadensis*) to discriminate among objects. Poster presented at the RIT
Undergraduate Research Symposium, Rochester, NY.

Poster presented at the RIT Undergraduate Research Symposium, Rochester, NY.

Heberle, A.L.* & DeLong, C.M. (2011, August). Human listeners can recognize objects from
multiple orientations using dolphin echoes. Poster presented at the RIT Undergraduate
Research and Innovation Symposium, Rochester, NY.

auratus*) to discriminate between objects. Poster presented at the RIT Undergraduate
Research and Innovation Symposium, Rochester, NY.

Kannyo, I.* & DeLong, C.M. (2010, August). Do echolocating dolphins and porpoises use
different auditory information to identify fish prey? A human listening study. Paper
presented at the RIT Undergraduate Research and Innovation Symposium, Rochester, NY.

pygmaeus*). Paper presented at the RIT Undergraduate Research and Innovation Symposium,
Rochester, NY.

Kannyo, I.* & DeLong, C.M. (2010, July). What type of auditory information is necessary for
marine mammals to identify fish prey? A human listening study. Paper presented at the 16th
Annual University at Buffalo McNair Research Conference, Buffalo, NY.

MENTORING
Undergraduate Psychology Senior Project Students (B.Sc.), RIT
*indicates student has received College of Liberal Arts Student Research Award

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Project Title</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephanie Barbato</td>
<td>“Do fish subitize? Numerical discrimination in goldfish”</td>
<td>2/14-12/14</td>
<td></td>
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<tr>
<td>Katie Fraser</td>
<td>“Equestrian positioning and equine movement”</td>
<td>2/14-12/14</td>
<td></td>
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<tr>
<td>Brandon Dziedzic*</td>
<td>“Semantic congruity effect and auditory cues”</td>
<td>1/14-12/14</td>
<td></td>
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</tbody>
</table>
| Taylor O’Leary*       | “Observational learning of tool use in orangutans
and children” | 9/13-5/14  |          |
<p>| Crystal Rightmyer     | “The effect of color on emotion”                   | 11/12-5/13 |          |
| Kayla Mata            | “Video games, gender and short-term memory”        | 11/12-5/13 |          |
| K. Tyler Wilcox*      | “Meditation and emotional memory”                  | 9/12-2/13  |          |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Caley Fain</td>
<td>“The effects of music on memory”</td>
<td>3/12 – 11/12</td>
</tr>
<tr>
<td>Brittany Priddy*</td>
<td>“Analyzing study methods from a levels of processing perspective”</td>
<td>11/11 – 5/12</td>
</tr>
<tr>
<td>Amanda Heberle*</td>
<td>“Auditory change detection with common and uncommon sounds”</td>
<td>3/11 – 11/11</td>
</tr>
<tr>
<td>Carmen Fernandes*</td>
<td>“The effect of social reward on creativity”</td>
<td>12/10 – 5/11</td>
</tr>
<tr>
<td>Irene Kannyo*</td>
<td>“The effect of musical training on auditory perception”</td>
<td>8/10 – 5/11</td>
</tr>
<tr>
<td>Susan Keenan*</td>
<td>“Gestural communication in orangutans”</td>
<td>3/10 – 11/10</td>
</tr>
<tr>
<td>Patricia McHugh*</td>
<td>“A comparison of the olfactory illusion effect in hearing vs. deaf students”</td>
<td>12/09 – 5/10</td>
</tr>
</tbody>
</table>

**M.Sc. in Applied Experimental and Engineering Psychology Students, RIT**

- **Committee Member** for Limor Hochberg 8/13 – 9/14
- **Committee Chair** for Juliana Lehr 12/10 – 7/11
- **Committee Member** for Melody Buchanan 9/09 – 12/10

**McNair Scholars Program Students, RIT**

- Irene Kannyo 6/10 – 8/10

**Summer Undergraduate Research Fellowship Students, RIT**

- Ashlynn Keller 6/12 – 8/12

**Co-op and Independent Study Students, RIT**

- Brandon Dziedzic (co-op) 6/14 – 8/14
- Stephanie Barbato (co-op) 6/14 – 8/14
- Brandon Dziedzic (co-op) 6/13 – 8/13
- Ashlynn Keller (co-op) 3/13 – 5/13
- Kayla Mata (co-op) 6/12 – 8/12
- Kenneth Tyler Wilcox (co-op) 6/12 – 8/12
- Ashlynn Keller (co-op) 6/12 – 8/12
- Ashlynn Keller (independent study) 11/11 – 2/12
- Kelsea Ennis (independent study) 11/11 – 2/12
- Amanda Heberle (co-op) 6/11 – 8/11
- Susan Keenan (independent study) 3/11 – 5/11
- Irene Kannyo (co-op) 6/10 – 8/10
- Susan Keenan (co-op) 6/10 – 8/10

**Ph.D. in Psychology, University at Buffalo, State University of New York**

- **Outside Reader** for Patchouly Banks 08/09 – present

**Multidisciplinary Senior Design Students (Undergraduate Engineers), RIT**

- **Faculty Consultant/Co-advisor** for Timothy Bukowski, Andrew Chorney, Michael Goldberg, Jason Hess, Mahmudul Khan, Martin Martinez 12/08 – 5/09
Undergraduate Psychology Honors Thesis Students, New College of Florida 8/03 – 5/04
Committee Chair for Noah Sulman and Erin Zellars
Committee Member for Sandra Bohn, Kate Chapman, Jonathan Fowler, John Lewis

Research Assistants

INSTITUTE SERVICE

Psychology Department, Rochester Institute of Technology
Chair, Student Success Committee 9/13 – present
Member, Student Success Committee 11/12 –
8/13 Member, Scholarship Committee 3/09 –
11/12 Chair, Library Committee 9/08 – 8/12
Member, Subcommittee on Tenure Policies 9/09 –
11/09 Member, Search Committee (3 years) 9/10 –
5/13 Organizer, Senior Capstone Project Poster Session 3/10 –
present Department of Psychology Poster Session 5/10, 11/10, 11/11, 11/12, 2/13
Joint Poster Session with Department of Communication 2/11, 2/12, 5/12, 12/13
Joint Poster Session with Department of Communication 5/11, 5/13, 5/14
and Museum Studies Program

College of Liberal Arts, Rochester Institute of Technology
Planning Team Member, ADVANCE Connect COLA Project 1/14 – present
Think Tank Member, Sponsored Research Support Program Committee 1/14 – present
Associate Reviewer, Sponsored Research Support Program Committee 3/13 – 12/13
Member, College Assessment Committee 5/12 – 5/14
Chair, Faculty Development Committee 10/12 – present
Co-Chair, Faculty Development Committee 10/11 – 9/12
Member, Faculty Development Committee 9/10 – 9/11
Member, Alumni & Friends Scholarship Committee 5/09 – 5/10

Rochester Institute of Technology Institute Committees
Member, Undergraduate Research Symposium Program Committee 5/13 – present
**RIT CONTINUING PROFESSIONAL DEVELOPMENT**

Strategies for Professional Advancement (NSF ADVANCE Connectivity Series) 5/14  
Career Navigation for Academic Women (NSF ADVANCE Connectivity Series) 1/14  
NSF Day at the RIT Inn and Conference Center 11/13  
CLA Sponsored Research Support Program Grant Writing Workshop 9/13  
CLA Sponsored Research Support Program Writing Successful Grants Seminar 3/13  
Faculty Institute on Teaching and Learning 5/09, 5/10, 5/11, 5/12, 5/13  
Educational Futures: A Faculty Showcase 3/12  
Managing Cultural and Gender Differences in the Assessment and Selection Process 9/10  
Principal Investigator Workshop: NSF Overview 6/10  
Office of the Vice President of Research Grant Writer’s Bootcamp 11/09

**PROFESSIONAL ASSOCIATIONS**

- Acoustical Society of America  
- American Psychological Association  
- Animal Behavior Society Association  
- for Psychological Science  
- Comparative Cognition Society  
- Psychonomic Society  
- Society for Marine Mammalogy

**PROFESSIONAL ACTIVITIES**

**Psychology Women’s Mentoring Group, RIT** 10/13 – present  
I am co-leader of this mentoring group that includes both pretenure and tenured female faculty. We have a book club and a research/writing club and we are supported by the Wallace Center.

**K-12 Science Education Presentations, Rochester NY** 6/14 – present  
I gave presentations on my animal research for children in Monroe County Schools. I presented for 3-6th graders at “Science Fun Day” at Quest Elementary School. I presented for 2nd graders at Council Rock School.

**Acoustical Society of America**

- **165th Meeting and 21st International Congress on Acoustics (Quebec, Canada)** 6/13  
  I was Co-Chair for a special session titled “Auditory Object Perception.” I invited speakers, organized the program, and introduced the speakers at the event.

- **150th Meeting (Minneapolis, MN)** 10/05  
  I was the Chair for full day symposium titled “Cognition in the Acoustic Behavior of Animals” with the same Chair responsibilities listed above.

- **148th Meeting (San Diego, CA)** 11/04  
  I was a judge for best student paper award in Animal Bioacoustics.
Undergraduate Research Symposium, RIT 8/13- present
I served on the organizing committee as a representative of the College of Liberal Arts, as well as a session moderator for the Social Sciences and Humanities oral presentations.

Psychology Department Poster Workshop, RIT 2/12, 5/12, 11/12, 2/13, 5/13
I ran a workshop on developing a poster for presentation at the College of Liberal Arts Senior Project Poster Session for undergraduate students.

Frontiers of Science Instructor, RIT 1/12
I taught this interdisciplinary science class for one week on the topic of animal perception. I gave two lectures and led a discussion class. I also assisted students in developing their end-of-quarter class presentations.

Psychology Student Society Curriculum Vitae Workshop, RIT 12/11
I ran an evening workshop on developing a curriculum vitae for undergraduate and graduate students in the College of Liberal Arts.

Seneca Park Zoo & RIT Consortium Committee 2/11 – present
Working with the administration at the Seneca Park Zoo and other faculty at RIT, I am initiating a research partnership that will benefit students by developing new opportunities for collaborations between our two institutions.

Seneca Park Zoo Internship Class at RIT 10/09, 10/11, 10/12
I gave guest lectures in this class on performing research in zoos and aquariums.

Psychology Explorer Lecture Series at RIT (Outreach Program) 11/08, 11/09
I gave lectures on “Careers and Research in Comparative Cognition” for high school students in the Rochester area.

Imagine RIT Innovation and Creativity Festival 5/09
My Senior Design students (B.Sc., Engineering) presented “Apparatus for Visual and Auditory Object Recognition.”

Brown University Postdoctoral Association Executive Committee 10/04---
-5/06

Society for Marine Mammalogy 4/00---
-7/03
Mentor for Undergraduates at the 14th Biennial Conference 11/01

Hawaii State Science and Engineering Fair, Judge, Division of Social Sciences 4/02, 4/03

Scientific Content Editor (Field Expert) 7/99---
-9/99


Associate Publisher – *Adaptive Behavior* (quarterly academic journal) 8/98---
-9/99
Oceanwide Science Institute
Charter Member & Executive Secretary

99----7/03
Director of Education Program

98----3/01


MEDIA & WEBSITE COVERAGE

RIT University News Newsmakers mention on my special session on Perceiving Objects Using Acoustics at the International Congress on Acoustics in Montreal, Quebec, Canada (July, 2013)

RIT University News Campus Spotlight on my Seneca Park Zoo river otter research with undergraduate Tyler Wilcox (August, 2012)

RIT University News Campus Spotlight on my Seneca Park Zoo river otter research with zookeeper Catina Wright (July, 2012)

Research at RIT article “Undergraduate research is a team sport” (Fall/Winter, 2012)

Rochester Institute of Technology Athenaeum article “Go fish! Training goldfish for object perception research” (October/November, 2011)

Practical Fishkeeping article “Professor trains goldfish to recognize objects” (October, 2011) Physorg.com article “Go fish! Scientist trains goldfish to recognize objects” (October, 2011) digg.com features “Go fish! Scientist trains goldfish to recognize objects” (October, 2011)

RIT Sponsored Research Services Annual Report to the Institute article on Grant Writers’ Boot Camp Seed Funding Awards (2010)
Bryan D. French

Lecturer, Department of Information Sciences and Technology
B. Thomas Golisano College of Computing and Information Sciences
Rochester Institute of Technology
Rochester, NY, 14623-5608, USA
bdfvks@rit.edu

Educational Background

<table>
<thead>
<tr>
<th>Degree</th>
<th>Field</th>
<th>Institution</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Science</td>
<td>Information Technology</td>
<td>Rochester Institute of Technology</td>
<td>5/03</td>
</tr>
<tr>
<td>Bachelor of Arts, Graduated Summa Cum Laude with departmental honors</td>
<td>Computer Science</td>
<td>SUNY Potsdam</td>
<td>5/85</td>
</tr>
</tbody>
</table>

Prior Experience

Rochester Institute of Technology, Lecturer (2013-present)
- Instructed all levels of students in Website Design and Implementation, Server-Side Programming, Client-Side Programming, Native Mobile Application Development and Application Development Practices.
- Served as lead instructor for Mobile Development and Server Programming courses.
- Nominated for Eisenhart Excellence in Teaching award.

Rochester Institute of Technology, Adjunct Faculty Member (2004-2013)
- Nominated for Eisenhart Excellence in Teaching award.

Genesee Community College, Adjunct Faculty Member (2004-2006)
- Instructed first year students in Visual Basic and Microsoft Office applications.

Independent Consultant (1999-present)
- Installation, design, development and implementation of a Succession Planning System using Lotus Notes, Java and Lotuscript.
- Design, implementation and updating of various websites and E-commerce systems using XHML, CSS, Javascript, PHP and MySQL.
- Designed, developed and deployed an application for running an adventure travel business to run on the Internet and integrate fully with their website using XHTML, CSS, Javascript, PHP and MySQL.
- Developed native mobile applications for iOS and Android.

MIS Director, CIO, COO/Owner, Hatch-Leonard/Markin-Shaw, Inc. (1987-1999)
- Involved in management and overall operations of multiple locations and a staff of over 100.
- Responsible for purchasing and implementing information systems and networking services and equipment.
- Involved in the design of systems and business process re-engineering to make more effective use of new and existing technology.
- Sold commercial insurance to a wide variety of businesses.
- Some experience with VPNs, Citrix/Terminal Server, Novell and other LAN/WAN technologies.
- Experience with PICK operating system and Relational Database Queries.
- Achieved CPCU designation.

- Developed and maintained applications in COBOL and CICS.
- Developed and implemented a Bank by Phone System
- Developed and implemented a Credit Reviewing System for an Automated Underwriting System using Artificial Intelligence concepts.
- Some C programming.

- Led hiking, cross country skiing, sea kayaking, canoeing, white water canoeing/kayaking trips in the U.S, Canada, Mexico and Europe.
- Involved in setting up the trips as well as running them.
- Responsible for instruction, safety and overall enjoyment of the clients.
- Clients range in age from 5 to 80 years old.
- Led team building exercises for groups such as corporations, first year medical students and troubled teens.

Assistant Coach Women’s Tennis, SUNY Geneseo (2006-2011)
- Helped coach the team to 2 straight SUNYAC Championship Titles and NCAA tournament births and 3 runner-up finishes.

Varsity Tennis Coach, Avon Central School, 200-2004
- Coached the co-ed tennis team in a boys’ league.
- Increased the number of students participating on the team each year.
- Increased the number of games and sets won each year. This was difficult as there was no JV or Modified program for player development and I had a new team every two years comprised of mostly players who had never played competitive tennis.
  ▪ Took over team under a difficult situation and increased the number of players on the team. Improved the morale of the players and parents.
  ▪ Qualified for sectional tournament both varsity years.

Academic Coursework

Rochester Institute of Technology
  ▪ Courses in E-commerce, Object Oriented Programming, Database Design, Website Design, Computer Networking, JAVA, JavaScript, PHP, HTML, PERL, MySQL, JSPs and basic UNIX.

SUNY Potsdam
  ▪ Courses in PL/I, Pascal, COBOL, LISP, Artificial Intelligence, Database Management, Systems Programming and Computer Networking

Curriculum Development

Course Revisions (help to re-write course or added substantial lecture material):
  ▪ 4002-217 Introduction to Programming I (Java)
  ▪ 4002-218 Introduction to Programming II (Java)
  ▪ 4002-360 Introduction to Database and Data Modeling
  ▪ 4002-409 Website Design and Implementation
  ▪ 4002-539 Server-Side Programming
  ▪ 4002-542/890 Native Mobile Application Development course re-write.
  ▪ Contributed to development of new curriculum for conversion to semesters in Client-Side and Web II courses.

Service to the Department of Information Sciences and Technology

  ▪ Served on many MS Capstone Committees of which the majority were as chairperson.
  ▪ Helped many undergraduate and graduate students meet their academic needs by doing Independent Study with them.
  ▪ Served on the Facilities committee and Instructional Technology Investigation Focus Group.
Service to the Community

- Cubmaster, Pack 4072 Geneseo, NY
- Coach for Odyssey of the Mind team
- Past member of Rochester Rotary Club
- Past member of Corporate Board at Hillside Children’s center.
- Past member of Otetiana Council’s Exploring Board.
- Past member of Board of Directors Independent Insurance Agents of Monroe County.
- Past member of multiple insurance company Agents Advisory Councils.
Curriculum Vitae
Deborah A. Gears, PhD (formerly Coleman)
dgcics@rit.edu
585-475-5348

EDUCATION

2011  Ph.D., Information Systems, Graduate School of Information Science, Nova Southeastern University, Ft. Lauderdale, Florida, USA
Dissertation - Wiki Behavior in the workplace: Emotional aspects of content development, Advisor: Dr. Steven Zink

1997  MS, Software Development & Management, Rochester Institute of Technology, Rochester, NY, USA

1994  BS, Computer Science, Empire State College, Rochester, NY, USA

1983  AAS, Computer Systems, Rochester Institute of Technology, Rochester, NY, USA

EMPLOYMENT

Academic Employment

Sep 2001–Present  Associate Professor
Rochester Institute of Technology, Golisano College of Computing and Information Sciences, Department of Information Sciences and Technologies

Sep 2000-May 2001  Adjunct Professor
Rochester Institute of Technology, Golisano College of Computing and Information Sciences, Department of Information Technology

Non-Academic Employment

Feb 2000–Aug 2001  Senior Data Architect
Xerox Corporation
Rochester, NY

Aug 1998–Feb 2000  Software Applications Manager
Unity Health System, ACM Medical Laboratories
Rochester, NY
Paychex, Incorporated  
Rochester, NY

Hillside Children’s Center  
Rochester, NY

Eastman Kodak Company  
Rochester, NY

**TEACHING**

**Instructor**

**PhD-level Courses**
- 810 Research Methods

**Master-level Courses**
- 726 Research Methods  
- 735 Collaboration, Technology, and the Human Experience  
- 745 Foundations of HCI  
- 765 User-Centered Design  
- 821 Data Architecture and Management  
- 820 Economics of Software Development  
- 752 Themes in Software Development and Management  
- 725 Component Development  
- 724 Performance Support Systems  
- 720 Data Object Development  
- 710 Object Technologies

**Bachelor-level Courses**
- 430 Information Requirements Modeling  
- 461 Fundamentals of Data Modeling  
- 217 Java Programming  
- 201 Freshman Seminar

**MS Capstones/Theses**  
**Advisor**

2012. Karam, J. Project: Community knowledge sharing wiki for higher education information technology professionals, RIT, co-chair with James Leone.

2012. Leiten, R. Thesis: Requirement technique selection methodology: Choosing the proper activities to produce quality software requirements, RIT.
2012. Nayak, S. Project: Inventory management application for small retail store in India, RIT.

2009. Augustine, B. Project: Return on experience: A guide to qualitatively measuring enterprise wikis, RIT.

2008. Falbo, N. Thesis: English language and 3rd generation programming language pedagogical practice analysis, RIT.
2004. Murray, W. Project & Thesis: Object-relational mapping algorithms and patterns, RIT.
2003. MacLennan, K. Project: Integrated quotations, RIT.
2003. Hsieh, T. Project: Online software for apartment rental system, RIT.


Committee Member

2013 Williams, Rob. Identifying Triggers that Affect Student Climate at RIT.

2013 Yudichak, Michael: Applying Rapid contextual Design to Improve an Existing Software Project.

2008. Nguyen, J. Project: Refactoring of legacy ASP application through converting, refactoring and optimizing, RIT.

2006. Khera, N. Project: Project scheduling tool (PST), RIT.


2004. Saeger, S. Project: Rationale for user-oriented design technique selection, RIT.
2004. Strup, A. Use of system dynamics and easel for simulation of the software development process, RIT.

2003. Chen, Z. Project: Web and database integration in a city school district’s management information system, RIT.

2003. Lim, J. Thesis: The impact of information technology on mass customization: An evolving trend for companies that want to be successful in the e-business arena, RIT.

2003. Clark, S. Project: Engineering and business information system for product planning, RIT.

Academic Rewards and Recognition

- 2012 Outstanding Educator Nominee, GCCIS, Information Sciences and Technologies
- 2008 Innovation and Teaching and Learning in Online Education Award Runner-up
- 2004 Data Management Association International Academic Award Nominee
- 2003 Exemplary Teaching Award in Distance Learning Recipient

SCHOLARSHIP

Publications - Peer Reviewed


**Publications – Partially Peer Reviewed**


Chapter, May 15, 2008, Rochester, NY.

Creative Works - Peer Reviewed

Gears, D.A. (June, 2012). Railway to Prosocial Crowdsourcing. TEDx FlourCity, Rochester, NY.
Presentation followed a rigorous process of proposal and selection, committee interviews, committee recommendations, content development, performance preparation, and rehearsals. Presentation available at http://www.youtube.com/watch?v=mhQ0EgOv7NI.

Presentations


Gears, D.A. (February, 2012). Conversations with a Data Modeler: A Production. Presented to Data Management Association, Upstate NY Chapter, along with RIT students and faculty.


Coleman, D. (2006, May). Presenter: Using Online Tools to Facilitate Team Projects (Track 1) (Track 2 by Professor Tom Reichelmyer, Track 3 by Professor Mike Lutz), *Faculty Institute on Teaching and Learning (FITL)*, Rochester Institute of Technology, Rochester, NY.


**Sponsored Research**

2013-2-14 Seed Funds, RIT Sponsored Research Grant, Role-Motivation-Interaction Framework for Collaborative Research.

2008-2012  Principle Investigator, RIT Sponsored Research, in conjunction with U.S. Department of Labor Grant: Wegmans Corporation: *Software Development Program for Developers and Managers*, Rochester, NY, with Professor Daniel Kennedy

2004  FEAD Grant Recipient, RIT

**Industry Collaboration**

2010 - 2011  Xerox Corporation, Rochester, NY. *Software development consultant, data architect: Executive Talent Management System*


2002 - 2003  Xerox Corporation, Rochester, NY: *Consultant, Enterprise architecture analyst*

**SERVICE**

**Rochester Institute of Technology**

- 2013 IST Curriculum Committee
- 2013 MHCI Session Chair, Toronto, Canada
- 2012 RIT Graduate Research & Creativity Symposium, Session Chair
- 2012, summer MS HCI Ad hoc Futuring Committee
- 2012 GCCIS Panel: Tenure mentoring
- 2011-12 Global Leadership Mentor, RIT
- 2011,2012 Lab for Social Computing Committee Member
- 2011-12 3’rd Year Tenure Review Committee
- 2010-12 Women in Computing Steering Committee
- 2009, 2010 GCCIC Tenure Committee
- 2009 GCCIS Academic Program Success Committee, Chair: Wiley McKinzie
- 2007, 2008, 2009 Information Technology Assessment Committee
- 2006 Hosted higher education marketing with Professors Dianne Bills and Jeffrey Lasky promoting RIT Masters Degrees in Software Development & Management, and Learning and Knowledge Management. *International Data Management Association Conference (DAMAI)*, Denver, Colorado.
- 2005, 2006, 2007 Institute Graduate Council
- 2005, 2006, 2007 GCCIS College Curriculum Committee
- 2005 Acting Director, Laboratory for Social Computing
- 2004 RIT Contributor: Global Outreach Education Whitepaper, Wiley McKenzie
- 2004, 2005 Selection Committee for Exemplary Teaching in Distance Learning
- Chair 2003, 2004, 2005 IT Governance Committee
- 2003, 2004 IT Graduate Curriculum Committee
• 2004 GCCIS & IT Women in Computing Committee & Sub-Committee: Explorer’s program
• 2004 RIT Biomedical Computing Program, Medical Informatics Advisory Board member
• Chair 2003 IT Graduate Futuring Committee
• 2003 IT Department Organization Sub-Committee
• 2002-2010 IT SD&M, Programming, Database, Knowledge Management specialty groups
• 2003 Author with Elissa Weeden, Nomination composition for Woman in Computing Award: Recipient, Eydie Lawson, IT Dept Chair

Professional Service

• 2013 Sponsor ACM SIGCHI Student Chapter
• 2012, 2013 Reviewer, SIGCHI CSCW Conference Long Papers
• 2003 Text chapter reviewer, Prentice Hall, Java How to Program, 4th and 5th edition
• 1998 – 2004 Vice President Education, Data Management Association (DAMA), Upstate New York Chapter.

PROFESSIONAL DEVELOPMENT

Seminars and training

Attended numerous academic and professional lectures, regional, national and international conferences, RIT Grant Writers Bootcamp, Global Leadership Mentor Training, Gamification Summit, Golisano Dean Lecture Series, Upstate Data Management Association Speaker Series, Interactive Digital Media, Web Foundations (RIT), Leadership Excellence and Practice Program (Xerox, Inc.), Enterprise Architecture Development (Steven Spewak), Business Process Analysis (Brian Dickinson), Computer Systems Design (Brian Dickinson), Bachman Analyst (Bachman), Bachman Terrain (Bachman), Improving Project Management Skills (American Management Association), Joint Application Design for Information Systems (Ed Brochu, Bachman), Total Quality Management (Hillside Childrens Center), Peer Reviews (Xerox), Requisite-Pro Requirements Management (Xerox), Oracle 7 application development suite of tools (Oracle), Information Quality Improvement (Larry English), Zachman Framework and Enterprise Architecture (John Zachman), Essential Data Modeling (Alec Sharp), Common Model and Data Warehousing (Michael Brackett), Use cases: Creating a software engineering culture: Karl Wiegers,, XML and Corporate Portals (Peter Aiken), Information Engineering (Clive Finklestein), Enterprise Modeling for CIM Systems Architect: An OO approach (Delvin Grant), Enterprise-wide Data Warehouse Development (Allan Kolber),

Software Tools

Macromedia Flash, Photoshop, Data modeling tools: Bachman, Cayenne, ERwin, Visible Analyst, EasyCase; Object modeling tools: Visual Paradigm, Rational Rose, TogetherSoft Control Center; Database: dBase III & IV, Access, Oracle, Informix, MySQL, Programming languages: Several 3GL and 4GL programming languages and environments; Several operating systems including: Mac OS, XP, Windows, DOS, UNIX,
OS400; Microsoft Office Automation, Microsoft Project; Miscellaneous software: front-end database reporting tools, web development tools, html and text editors.
Professor Vicki L. Hanson

Contact information
Information Sciences and Technologies
Golisano College of Computing and Information Sciences
Rochester Institute of Technology
Rochester, NY 14623  USA

vlh@acm.org
http://staff.computing.dundee.ac.uk/vlh/

+1.585.475-5384

Research Interests
Human-computer interaction; accessibility; aging; applications designed to address needs of diverse populations, with emphasis on language, cognition, and healthcare

Professional Experience
Rochester Institute of Technology (RIT), New York, 2013 –
Distinguished Professor, B. Thomas Golisano College of Computing and Information Sciences (GCCIS)
Extended Faculty, Ph.D. Program, GCCIS

University of Dundee, Dundee, Scotland, 2009 –
Professor, School of Computing; Chair of Inclusive Technologies

IBM Thomas J. Watson Research Center, Yorktown Heights, New York
Research Staff Member Emerita, 2009 –
Manager, Accessibility Research Group, 2000 – 2008
Manager, K-12 Collaborative Learning Group, 1995 – 2000
Research Staff Member, 1986 – 2008

Haskins Laboratories, New Haven, Connecticut
Research Associate, 1980 – 1986

The Salk Institute for Biological Studies, La Jolla, California, Laboratory for Language and Cognitive Studies
Postdoctoral Fellow, 1978 – 1980

Awards and honors
- ACM Vice-President, 2014 – 2016
- ACM SIGACCESS Award for Outstanding Contributions to Computing and Accessibility, 2014
- Royal Society of Edinburgh, Fellow, FRSE, 2013
- Anita Borg Institute, Woman of Vision Award for Social Impact, 2013
- Speaker, ACM Distinguished Speaker series, 2013 - 2016
- Royal Society, Wolfson Research Merit Award, 2009
- IBM Corporate Award, 2009. For pioneering technology and
innovation supporting IBM's contributions to accessibility

- UK Computing Research Committee (UKCRC), 2009
- Fellow, British Computer Society (FBCS CITP), 2008
- ACM Fellow, FACM, 2004. *For contributions to computing technologies for people with disabilities*
- Arts and Sciences Alumni Fellows Award, 1995. *Profiles in Achievement.* University of Oregon
Other noteworthy recognition

Senior Professional Society Positions
- ACM Executive Committee and ACM Council, 2010 – 2016
- ACM Fellows Committee, 2014 - 2016
- ACM Secretary Treasurer (elected), 2012 – 2014
- Chair, ACM SGB (SIG Governing Board) (elected), 2010 – 2012
- ACM-W Europe Executive Committee, 2012 – 2015
- Chair, Executive Committee, ACM SIGACCESS, elected 2004 – 2006; re-elected 2006 – 2009; Past Chair, Executive Committee, 2009 – 2015
- Vice-Chair, ACM SIGCAPH, 2001 – 2004, elected

Other Recognition
- Invited seminar, Dagstuhl International Conference and Research Center for Computer Science, 2014
- Named ‘One of the 25 Most Powerful Women Engineers in Tech’, 2013, Business Insider

Recognition for Application Development
- Lighthouse International’s Corporate Visionary Award, 2008, accessibilityWorks (internationally deployed Web adaptation framework)
- Goodwill Partner of Year, 2006, Web Adaptation Technology
- da Vinci Research Award, 2004, Web Adaptation Technology
- New Freedom Foundation Best New Ability Research Award, 2004, Web Adaptation Technology
- National Merit Winner, Johns Hopkins National Search for Computing to Assist Persons with Disabilities, 1992, HandsOn (English/ASL bilingual education platform)

IBM Outstanding Technical Achievement Awards
- Research Division, for Contributions to Web Accessibility, 2003
- Internet Division, for NetVista, 1996
- Research Division, for K12.Net, 1995

IBM Research Division Accomplishments
- Contributions to Web Accessibility, 2003
- NBOSS Online Scoring System for the National Board of Professional Teaching Standards, 2000

IBM Research Division Awards
- Next Generation Web External Honors, 2005
- Expo2000 (Team Award), 2000
- National Board Online Scoring System, 1999
- Authentic Assessment Tool, 1996
- Child’s Reader with Speech Recognition, 1993

IBM Development Deliverers Award
- K-12 Education Division, for SchoolVista Authentic Assessment Tool, 1996

**Education**


B.A., Psychology and Speech Pathology and Audiology, 1974, University of Colorado
- Jacob van Ek Award for Academic Excellence, University of Colorado, 1974
- Phi Beta Kappa, 1974
- Presidential Scholarship, University of Colorado, Boulder, 1970

**Editorial positions**

Founder and Co-Editor-in-Chief, ACM Transactions on Accessible Computing

Editorial Board, Universal Access in the Information Society, 2007 –

Associate Editor, ACM Transactions on the Web, 2005 – 2014


Guest editor:

- ACM Transactions on Computer-Human Interaction – Special Issue on Web Accessibility, 2007
- IBM Systems Journal – Special Issue on Accessibility, 2005
- Universal Access and Inclusion in Design: A Special Issue of
Various journal reviews, such as *ACM Transactions on Computer-Human Interaction*, *Computer Speech and Language*, *International Journal of Human-Computer Studies*

**Funded Grants**

**PI: RCUK “BESiDE – The Built Environment for Social Inclusion in the Digital Economy”**. RCUK EP/K037293/1, 10/13 – 10/16, £1,648,488 [partnership with Newcastle University; £1,301,189 to the University of Dundee]

University of Dundee Lead: User Experience and Accessibility Research Partnership — BBC, University of Dundee, Newcastle University, UCL, Swansea University, University of Nottingham, and Bath University. Start July, 2013.


**PI: Telling Tales of Engagement Impact Award “The Portrait System for Care Staff of People with Dementia.”** RCUK EP/K001272/1 06/12 – 06/14. £10,000

**PI: Google Research Award “Identifying and presenting trust-related features in health-directed search results for older users.”** 03/12 – 02/13. $60,982

Sponsor, Scottish Informatics Computer Science Alliance Distinguished Visiting Professor Richard Schulz. 2012. £1,300. 03/12.


Awardee, Royal Society, Wolfson Merit Award, WM080040, 2009 – 2013 “Inclusion of Disabled and Older People in the Digital Economy”


“SUS-IT: Sustaining IT use by older people to promote autonomy and independence.” 01/09 – 03/12. Loughborough University.
EPSRC/ESRC New Dynamics of Ageing £1,106,342 [£164,928
Dundee; assumed the role of Dundee Lead and CoI following the
retirement of the original Dundee lead].

Sponsor, Distinguished Visiting Professor Sara Czaja, SICSA, 2009.
£2,000. 03/10.

Co-Investigator “Adaptive Technologies for Enhancing the Accessibility
of Digital TV.” 07/09 – 06/10. EPSRC and BBC, £21,263

PI, “Design in the Digital World Network.” EPSRC EP/H006664/1
£106,194. 6 April 2009 – 5 October 2012.

Co-Investigator, “An Organic Approach to Virtual Participatory Design
(SEEDS).” 04/09 – 03/11. EPSRC EP/H006834/1 £365,055

Co-Investigator, “Requirements Gathering for an Inclusive Digital
Economy.” 04/08 – 10/08. EPSRC EP/F066848/1 £61,815

Co-Investigator, “An Inclusive Digital Economy Supporting Older and
Disabled People” 04/08 – 06/09 EPSRC EP/G002118/1 £210,713

IBM Open Collaborative Research (IBM Lead), 07/07 – 06/09. Project
partners:
- School of Computing, University of Dundee (Prof Peter Gregor),
  $150,000
- University of Miami Miller School of Medicine (Dr. Sara Czaja),
  $150,000

PI, NSF “Universal Usability Doctoral Research Consortium.” 11/03 –
10/04. $20,617

PI, NIH “Acquisition of Literacy by Deaf Children and Adults.” 2/82 –
8/89. $314,524 (original grant plus one renewal)

PI, NIE grant “Reading and Writing Processes in Deaf Adults.” 9/80 –
8/81. $15,000

PI, NIH Post-doctoral Fellowship “Language Processing in the Deaf.”
9/78 – 8/80. $18,000

**Membership in Professional Societies**

Fellow, ACM
ACM SIGCHI, member
ACM SIGACCESS, member

Fellow, Royal Society of Edinburgh
Fellow, British Computer Society

Senior Member, IEEE Computer Society

**Peer review panels**

- WWTF, Vienna Research Groups for Young Investigators, 2011
- UK EPSRC Review Panels: Platform grants, July, 2009; Fellowship awards Dec, 2009
- Israel Science Foundation, 2007
- UK Economic and Social Research Council (ESRC), 2006
- Invited participant, National Science Foundation (NSF) Human-Centered Computing (HCC) Workshop, 9/06
- Invited participant, Panel on Cognitive Disabilities, Interagency Committee on Disabilities Research (ICDR), Subcommittee on Technology (IST), 2006
- National Science Foundation programs in Information and Intelligent Systems, Committee of Visitors, 06/03
- National Institutes of Health Review Panels
  - Deafness and other Communication Disorders Study Section
  - Sensory Disorders and Language (7/00)
  - Developmental Disabilities, Communication and Science Education Panels (7/02, 3/03, 7/03, 11/03, 3/04, 7/04, 11/04, 11/05, 3/06, 6/06)
- Invited participant, National Institute on Deafness and Other Communication Disorders (NIH) Working Group on Research and Training: Perspectives of the Deaf Community, September 1990
- Consultant, NIH grant, “Acquisition of Literacy by Deaf Children and Adults.” Haskins Laboratories, 1988 – 1991
- Consultant, NIH grant, “Psycholinguistic and Biological Mechanisms in Dyslexia”. Yale University Medical School. 1987 – 1992
Scientific Advisory Board, Center on Research and Education for Aging and Technology Enhancement (CREATE), University of Miami, 2012 – present


Advisory Panel, CAST (Center for Applied Special Technology), 2005 – 2008

Project lead, Hearing Team, IBM People with Disabilities Leaders in Innovation

Technology Needs Leaders, Cognitive Team, IBM People with Disabilities Leaders in Innovation

Advisory Board, University of Washington, AccessAlliance.

Advisory Council, University of Colorado at Denver and Health Science Center, RERC for the Advancement of Cognitive Technologies

Advisory Board, Georgia Institute of Technology, RERC on Workplace Accommodations


Conference organizing

- Organizing committee: ACM ECRC 2017 (European Computing Research Congress)
- Treasurer / Registration: ACM-W Europe womENcourage 2014
- Chair, ACM European Computing Research Congress workshop, “Towards an inclusive Europe: Reflections on the digital agenda for eAccessibility,” May 2013
- Panel organizer and moderator, UK Computing Research Committee Panel on “Getting the Healthcare we Deserve” (March, 2012, IET, London)
- Conference Chair, RCUK Digital Engagement 2011
- Co-Chair, NSF Workshop on Accessible Electronic Health Records, 2010
- Chair, ACM ASSETS Steering Committee, 2005 – 2009
• Conference Chair, ACM CUU 2003
• Conference Chair, ACM ASSETS 2002
• Treasurer / Registration: ACM ASSETS 2000;
• Audio /visual chair: ACM OOPSLA’92
• Treasurer: ACM OOPSLA’93, ’94, ’95, ’99, ’05

Program Committee Chairing
• Papers Chair, ACM WomENcourage 2015
• Papers and Notes Subcommittee Chair (Special Applications), ACM CHI’14 conference
• Papers and Notes Subcommittee Chair (Usability, Accessibility, and User Experience), ACM CHI’13 conference
• Program Committee Chair, ACM ASSETS 2010
• Programme Committee Co-Chair, RCUK Digital Futures 2010
• Papers and Notes Associate Chair, ACM CHI’09
• Deputy Chair, WWW 2008
• Program Committee Co-Chair, ACM Hypertext 2007
• Associate Chair Program Committee, CUU 2000

Program Committees (selected)
• ACM ASSETS’04, ’05, ’06, ’07, ’08, ’09, ’11, ’12 (Associate Chair), ’13, ’14
• womENcourage’14
• ACM CHI’03 (Tutorials), CHI’12 (Associate Chair)
• ACM Mobile HCI’12
• ACM Eye Tracking Research and Applications (ETRA’10, ETRA’12)
• British (BCS) HCI’11, ’12, ’13
• International Conference on Computers Help People (ICCHP)’10, ’12, ’14
• CWUAAAT’10, ’12
• HCI International ’09, ’11, ’14 Human Computer-Interaction Theme
• W4A’05, ’06, ’07, ’08, ’09, ’10, ’13, ’14
• WWW ’07
• Accessible Design in the Digital World ‘05

Other ACM Service and Recognition
• ACM Awards Committee (Fellows Committee, 2014 – present)
• ACM-W Awards Committee Co-Chair, 2013 – 2015
• ACM SGB Task Force on Full Inclusion, 2013
• Adjunct Chair for Assistive Technology, ACM SIGCHI, 2001 – 2003
• ACM Task Force on Human Subjects Ethics in Research, 2012
• ACM Student Research Competition, Grand Finals Judge, 2008 - 2013
• Chair, ACM Task Force on SIG membership, 2009 - 2010
• ACM Awards Committee, Outstanding Contribution to ACM subcommittee, 2006 – 2010; Chair 2009

Community outreach
Mentor, “Rochester Bridges to the Doctorate,” a mentoring network to encourage deaf students to pursue PhD in the behavioral and health sciences.

“Member, Senior Women in Computing, “ mentoring activity, Scotland, 2013 -

“Empowering older people to discover digital technologies,” Panel, Dundee Science Fair, November, 2011

“Design in the Digital World” dissemination evening, January 28, 2010

“Helping older people to stay at home using familiar technology” A joint workshop organized by NHS Tayside and the University of Dundee, May, 2009 (EPASS accredited event)

“Untangling the Web: Making computers more accessible to older adults,” Café Science Series, University of Dundee, November, 2009

Patents
US7093029: Method and system for providing accessibility to electronic mail, 2006

US7062547: Method and system for providing a central repository for client-specific accessibility, 2006

US7010581: Method and system for providing browser functions on a web page for client-specific accessibility, 2006

US6970918: System and method for transcoding support of Web content over secure connections, 2005

US6961759: Method and system for remotely managing persistent state data, 2005

US6944665: Business method for delivering accessibility using a distributed environment, 2005

US6880014: Method and system of use of transcode directives for distributed control of transcoding servers, 2005
US6373505: Space-conserving interface control for presenting and manipulating multidimensional state, 2002

**Keynotes and invited conference presentations**


**Publications:**

**Papers in peer-reviewed journals and conference proceedings**

Medellin, A. R., Reed. C., and Hanson, V. 2014, in press. Recommendations to support interaction with broadcast debates: A study on older adults’ interaction with the Moral Maze. In *Journal of Artificial Intelligence and Society*.


New York, NY, USA, 313-322.


Applications to Assist Persons with Disabilities, Pp. 5 – 6.


Padden, C. and Hanson, V. L. 2000. Search for the Missing Link: The Development of Skilled Reading in Deaf Children. In K. Emmorey and


**Peer-reviewed conference extended abstracts, posters, panels, and workshops**


Crabb, M, Hanson, V. L., and Cobley, A. 2012. Cognitive Usability:


**Editorials, newsletter articles, and other outputs**

Hanson, V. L. Disability and Aging. Talk presented at the Computing Community Consortium and NIH meeting, September 2014.

Hanson, V. L. Care home residents. Talk presented at the Leibniz Center for Informatics seminar on Augmenting Human Memory, Dagstuhl, Germany, September 2104.


Hanson, V. L. 2012. ACM Special Interest Groups (SIGs). *Chinese Computing Federation Communications* (available only in Chinese).

Hanson, V. L. and Sears, A. 2011. Introduction to Assets’10 Special Issue. *ACM Transactions on Accessible Computing, 4, 1*.


**University Seminars (since 2008)**

RIT, GCCIS PhD Symposium (September, 2014) “The Human Side of Computing”

University of Dundee, UX Partnership with BBC Symposium (June, 2014) “Accessibility and Access Services for a New Broadcasting System”

University of Rochester, Computer Studies (April, 2014) “Accessibility”

University of Loughborough, HCI Guru Lecture Series (October, 2013) “Accessibility”

University of Lisbon (February, 2013) “Re-Thinking Web Accessibility”


Lancaster University (April, 2012) “Social Inclusion in the Digital Economy”
University of Queensland, Australia (April, 2012) “Social Inclusion in the Digital Economy”

University of Edinburgh (May, 2010) “Inclusion in the Digital Economy”


University of Aberdeen (May, 2009) “Ageing and technology: The next generation”

Middlesex University (July, 2008) “The age wave”

Cambridge University (July, 2008) “The age wave”

Oxford Brookes University (July, 2008) “The age wave”

University of Manchester (April, 2008) “The age wave”

University of York (March, 2008) “The age wave”

Teaching Courses taught at RIT:

**Advanced Topics in HCI (MSc) 2014**
One of the “Top 50 Heavy Hitters” in Spring 2014 for interactive courses (top 1.3% of all courses in the academic term)

**Research Methods (MSc) 2013, 2014**

Courses taught at the University of Dundee

**Ph.D. Student Adviser**, School of Computing (2010 - 2013)


**Argumentation and Computing (2009 – 2012)** – A 1st year course in computing open to majors and non-majors, this is a lecture style team-taught course in which I teach the problem solving aspects.

**Work Placement (2010 – 2012)** -- A 4th year Honours course in which students gain experience in an industrial, commercial or research organization using computers.

**Research Methods (2012 – 2013)** – An MSc level course
focusing on research and statistical methods on computing research. The course is team taught, giving students not only the basics of statistics, but also methodological perspectives from both HCI and Computer Vision.

Honours and MSc project supervision (2009 - 2012) – Project advisor.

External Examiner

- Faculty promotion cases [confidential] in the US, Canada, and Europe
- PhD Committee, Department of Media & Communication, Oslo (Nov 2014)
- PhD Committee, CUNY (October 2013)
- PhD Committee, IST / Technical University of Lisbon (February 2013)
- PhD Committee, University of York (December 2012)
- Accessibility, MIT CSAIL (December, 2011)
- PhD Committee, Middlesex University (September, 2011)
- PhD Committee, University of British Columbia (June, 2011)
- PhD Committee, University of Ulster (June, 2011)
- PhD Committee, Georgia Tech (June, 2010)
- Newcastle University, Professorial appointment (March, 2010)
- Middlesex University, MSc Programme in Inclusive Design (May, 2009)
- PhD Committee, University of Dundee (June 2005)
- MSc Committee, Pace University (April, 2005)

PhD students supervised

Paula Garcia, RIT, started Fall 2014

Noella Kolash, RIT, started Fall 2014

Craig Stewart (expected 2015) – 1st supervisor

Chris Norval (2014) – 2nd supervisor

Michael Crabb, 2014. “An Exploration into the use of Cognitive Characteristics when Designing for Older Adults” [1st supervisor]


Gemma Webster, 2011. “Multimedia Profiles as External Personalities to Support People with Dementia and their Carers” [1st supervisor]


University

RIT
- Development of Undergraduate program in Human-Centered Computing, 2014
- Strategic Planning Committee; co-Chair, Research and Graduate Education, 2014
- IST HCI Faculty Search Committee, 2013 – 2015
- RIT PhD Adjunct Faculty, 2013 –
- RIT HCI Group, 2013 –

University of Dundee
- School of Computing Research Committee, 2009 –
- School of Computing REF UoA Committee 2013
- University of Dundee International Development, Americas Group, 2011
- School of Computing Ethics Committee, 2010 – 2013
- Liaison between School of Computing and NCR Corporation, 2010 – 2012
- University Research Committee, 2009 – 2012
- School of Computing Planning Committee, 2009 – 2013
- University outside College representation – College of Arts and Social Sciences
  - Professor Appointment – College of Arts and Social Sciences (March, 2012)
  - Lecturer Appointment – Grad Sc. of Nat Resources Law, Policy and Management (August, 2011)
  - REF review – Accounting and Finance (August, 2010)
  - REF review – Graduate School of Natural Resources Law, Policy and Management (April, 2010)
Curriculum Vitae
Andrew M. Herbert, Ph.D.
Professor & Chair
Department of Psychology, College of Liberal Arts,
Rochester Institute of Technology,
18 Lomb Memorial Dr.
Rochester, NY 14623-5604
TEL: 585-475-4554
FAX: 585-475-7120
e-mail: amhgss@rit.edu

Degrees
1989-1994 University of Western Ontario - Ph.D., Psychology
Dr. G. K. Humphrey, Advisor.
Thesis title: Studies of the visual detection of bilateral symmetry.

1987-1989 University of Western Ontario -M.A., Psychology
Dr. G. K. Humphrey, Advisor
Thesis Title: Effects of visible reference frames on bilateral symmetry detection

1981-1985 McGill University - B.Sc., Biology
Dr. R. M. Robertson, Advisor, Independent study:
Control of locust oviposition digging.

Awards
2011 - Changing Hearts and Minds Award, RIT.
2009 - Eisenhart Award for Outstanding Teaching, RIT.

Research and Teaching Experience
July 2012 to June 2012 Department of Psychology, RIT. Professor
July 2007 to June 2012 Department of Psychology, RIT. Associate Professor
July 2006 to Dec 2008 Undergraduate Coordinator - Department of Psychology
July 2002 to June 2007 Department of Psychology, RIT. Assistant Professor
August 1999 - July 2002 Psychology Department, University of North Texas. Assistant Professor
August 1996 - August 1999 School of Optometry, University of Montréal. Research Fellow
Sept 1992 - July 1994  Psychology, University of Western Ontario, London, Canada. Part-time research assistant for Dr. G. K. Humphrey
   Taught second year research methods course
Sept 1992 - May 1993  University of Western Ontario, Lecturer in Psychology.
   Taught honours thesis course
Sept 1991 - May 1992  University of Western Ontario, Teaching Assistant (Psychology)
Sept 1990- May 1991  Group leader for honours thesis course, including undergraduate thesis supervision & evaluation
Sept 1989 - May 1990  University of Western Ontario, Teaching Assistant (Psychology)
Sept 1987 - May 1989  Laboratory demonstrator and marker for second year courses in Animal Learning, Perception, and Statistics
Summer 1985, 1986  Department of Toxicology, Health Protection Branch, Health Canada.
   Psychophysical testing & animal care; non-human primate research facility

Other Teaching Experience
1987  Graduate Studies 500 course - *Theory and Practice of University Teaching*, Dr. H. Murray,
   Instructor, University of Western Ontario.

Service to the Institute
2008-present  Chair - Department of Psychology
2011-2013 Member - Eisenhart Nomination Committee
2010-present  Chair's Representative - CLA Agenda Committee
2010-2011 Member - Graduate Dean Search Committee
2010-2011 Member - Eisenhart Awards Committee
2010-2011 Chair - Search Committee, Department of Psychology
2007-2011  Member - Resource Allocation and Budget Committee
2007-2009 Chair - Search Committee, Department of Psychology
2007-2008 Member - Student Affairs Committee
2007-2008 Member - CLA Liaison Committee (pre-Dean search)
2006-2008 Undergraduate Coordinator, Department of Psychology
2005-2008 Member - M.Sc. Admissions Committee, Department of Psychology
2004-2007 Member - Search Committee, Department of Psychology
2003-2007 Member - Academic Support Committee
2003-2005 Member - Dean's Communication and Writing Committee
Publications (Student coauthors in italics)

Refereed Publications


Other Publications & Presentations


Conference Presentations


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**Invited Presentations, Seminars, and Workshops Given**

*Allocating and Diverting Attention.* Presentation to Eastman Kodak Research, June 30, 2009, Rochester, NY.

*Advertising and Attention: Eye-tracking, pictures and words.* Department of Communication Colloquium Series, April 30, 2009, Rochester, NY.


Classical Psychophysical Methods and Signal Detection Theory. Lecture to graduate students in Neuropsychology, October, 1997 & 1998, University of Montréal, Montréal, Québec.


Symmetry Detection. Lecture presented to the Vision Research Group, November, 1996, Concordia University, Montréal, Québec.

Détection de la symétrie bilatérale: Influence du corps calleux. Lecture presented to La Groupe de Recherche en Neuropsychologie Expérimentale, November, 1996, University of Montreal, Montréal, Québec.

The Detection of Bilateral Symmetry: A Callosal Hypothesis. Lecture presented to the Department of Psychology, March, 1996, University of Stirling, UK.


Visual Evoked Potentials. Short Course for Moray House Institute of Education, Module for Teachers of the Visually Impaired, January 1995, Glasgow Caledonian University, UK.

Reviewing
Editorial Review Board: Brain & Cognition
Membership in Scholarly Organizations
Member of:
Experimental Psychology Society (UK); Association for Psychological Science (US).

Courses Instructed
**Advanced Perception** - Graduate course in Engineering Psychology. Examines topics in perception related to human factors, decision making, object perception and other areas.

**Color Perception** - Undergraduate course examining current theories of color vision and color perception. Includes neurophysiological, neuropsychological and behavioral examinations of color perception.

**Psychological Statistics** - Undergraduate statistics course. Teaching methods and application of measures such as T-tests, ANOVA, Correlation, Regression, Chi-Square and descriptive statistics. All presented within the context of research in psychology.

**Spatial Vision & Pattern Perception** - Undergraduate course examining research and theories of human pattern perception focussing on mechanisms for detecting information at different spatial scales.

**Cognitive Psychology** - Undergraduate course covering topics in perception, attention, memory, learning, reasoning, creativity and other aspects of cognition.

**Attention & Pattern Perception** - Senior Undergraduate course covering the role of attention in human information processing. Covers a variety of topics, with a focus on current methods used in brain imaging and how these reveal possible loci of cognitive functions.

**Visual System** - Undergraduate course in visual neurophysiology, anatomy, psychophysical methodology and selected topics in vision science.

**Brain Mapping** - Graduate Psychology course introducing and discussing different topics in brain imaging. Includes discussion of EEG-derived methods, MEG, PET, fMRI and how these are used to map cortical activity underlying behavior.

**Experimental Methods** - Undergraduate course in experimental research methods.

**Physiological Psychology** - Advanced undergraduate level course covering the structure and function of the human central nervous system in relation to behavior. This course examined material from the level of cellular function, hormones, to the role of different cortical areas in normal and abnormal behavior.

**Perception & Cognition** - Introductory course to topics in selected areas of perception and cognition, including face recognition, object recognition and categorical concepts.
Statistics - One semester graduate level course in statistics including: Chi-square; t-test; ANOVA; correlation etc. First in the sequence of Psychology graduate statistics courses at UNT. Mathematical and methodological issues related to each statistical technique are discussed.

Méthodologie et statistiques appliquées à la clinique - 1999 - Graduate course in Optometry covering the interpretation of scientific results in a clinical context. Included the use of data bases, bibliographic sources, and computer searches.

Optiques Physiologiques - 1997, 1998 - 2nd year course in optometry covering psychophysical research methods, basic visual sensory phenomena, motion perception and colour vision.

Physiological Optics - 1995, 1996 - 3rd Year course in Optometry covering visual perception, visual neuropsychology, psychophysics of vision, and neurophysiology of the visual system.

Research Methods - 1993-1994 - 2nd Year required course in Psychology covering research design and relevant statistical methods.


**Students Supervised or Co-supervised**

*Honours Students:*


*Graduate Students:*


(2009-2013) Susan Farnand, CIS Ph.D. *Developing a framework for the design of pictorial stimuli for perceptual image quality experiments.*

(2012-present) Yuqiong (Joan) Wang, GCCIS Ph.D., *Evaluating Avatar Emotion from Facial Cues*

*RIT Psychology Senior Projects Supervised*

Burke, Sean; Burt, Lisa; Casilio, Karen; Chevalier, Bryan; Cochran, Peter; Comeau, Michelle; Conley, Tristan; Craig, Gavin; Dickens, Nicole; Fernandez, Yesenia; Freel, Brittany; Garrison, Brian; Gorman, Colin; Grunhaus, Daniel; Hetro, Samantha; MacDowell, Nick; Mazza, Vanessa; Moffett, Heather; Oneske, Jennifer; Schulze, Bradley; Smagner, Jessica; Stefano, Leanne; Stupak, Noah; Van Scott, Summer; Winkle, Jon

**Research Grants**

*External funding*

2010-2013 NSF/REU. *Summer Research in Imaging.* co-PI ( $288,000)

2010 CEIS/NYSTAR & Procter & Gamble. *Analysis of Consumer Behavior and Experiences via the Integrated Use of Mobile Eye-Tracking and Physiological Reactivity.* co-PI ($62,143)

2008 CEIS/NYSTAR (CAT) & Kodak. *Allocating and Diverting Attention.* PI ($37,500).

2007 CEIS/NYSTAR (Bioimaging) & Positive Science, LLC. *Evaluation and development of next-generation eyetracking systems.* Co-PI with Jeff Pelz ($49,878).


2006 BAE systems. *Low-level visual information, attention and the detection of targets.* Co-PI with Jeff Pelz ($25,000).

2005 Kodak/Center for Imaging Science. Pilot studies grant. Co-PI with Dr. Jeff Pelz ($4,500)

2005 BAE systems. *Low-level visual information, attention and the detection of targets.* Co-PI with Jeff Pelz ($25,000).

*Internal Funding*
2010 - Research Assistance in Eye-tracking. CLA Faculty Research Fund. Granted to provide support for a student research assistant. $750

2007 - On Humans and Wildebeests: A reexamination. CLA Faculty Research Fund. Granted to provide support for a student research assistant. $700

2005 - Examining Emotional Expressions using MDS. CLA Faculty Research Fund. Granted to provide support for a student research assistant. $700

2004 - Eye movements and Symmetry detection. CLA Faculty Research Fund. Granted to provide support for a student research assistant. $700

2003 - Examining an illusion of depth from motion. CLA Faculty Research Fund. Granted to provide support for a student research assistant. $728

2001 - 2002 - Assessing expression recognition in a selected population of neglected children. Faculty research grant to facilitate collection of pilot data, and prepare an application for external support. $4,000

Summer 2001 - Junior Faculty Summer Research Fellowship. $5,000

Summer 2000 - Junior Faculty Summer Research Fellowship. $5,000

Summer 2000 - College of Arts and Sciences GPBy3 Grant. $7,000

2000 - 2001 - Event related potentials and symmetry detection Faculty research grand to fund a study including the participation of two students. $3,500

1999 - 2000 - Event related potentials and symmetry detection Faculty research grant to fund a study including salary for a part-time research assistant. $5,000
Matt Huenerfauth  
matt.huenerfauth@rit.edu

**Academic Position**

**Associate Professor.** Golisano College of Computing and Information Sciences, Rochester Institute of Technology.

**Faculty Appointments:** Department of Information Sciences and Technologies

**Focus of Research:** Computer accessibility and assistive technology for people with disabilities, natural language processing, human computer interaction, design of experimental evaluations of linguistic and assistive technology by people with disabilities, and the computational linguistics of American Sign Language.

**Professional History**

**Associate Professor.** Golisano College of Computing & Information Sciences, RIT. August 2014 to Present

**Associate Dean.** DMNS, Queens College, City University of New York. June 2012 to August 2014

**Associate Professor.** Queens College, City University of New York. January 2012 to August 2014

**Assistant to the Dean.** DMNS, Queens College, City University of New York. November 2011 to June 2012

**Assistant Professor (Tenured).** Queens College, City University of New York. September 2011 to Dec. 2011

**Assistant Professor.** Queens College, City University of New York. September 2006 to August 2011

**Teaching Assistant.** Computer and Information Science Dept., U. Pennsylvania. Fall 2003 to Spring 2005

**Program Manager Intern.** Microsoft Corporation, Natural Language Group. Summer 2000, Summer 2001

**Research Assistant.** Computer and Information Science Department, University of Delaware. 1998 to 2001

**Teaching Assistant.** Computer and Information Science Department, University of Delaware. Fall 1999

**Teaching Assistant.** Pennsylvania Governor's School of Excellence for the Sciences. Summer 1999

**Funding from University-External Sources**


- Collaborative research project, linked to corresponding NSF research grants to YingLi Tian, P.I., City College, $557,918 and to Elaine Gale, P.I., Hunter College, $104,000. Overall project total: $1,199,915.


- Additional $21,000 of supplemental funding from NSF Research Experiences for Undergraduates program.

- Collaborative research project, linked to corresponding NSF research grants to Carol Neidle, P.I., Boston University, for $385,957 and to Dimitris Metaxas, P.I., Rutgers University, for $469,996. Overall project total: $1,214,958.


Matt Huenerfauth, PI. June 2008 to May 2014. “CAREER: Learning to Generate American Sign Language Animation through Motion-Capture and Participation of Native ASL Signers.” National Science Foundation,
Faculty Early Career Development (CAREER) Award Program, CISE Directorate, IIS Division, HCC Cluster. Amount of funding: $581,496.

- Additional $37,000 of supplemental funding from NSF Research Experiences for Undergraduates program.


**Research and Teaching Awards**

- **ACM Senior Member.** (2014). Association for Computing Machinery.
- **Faculty Early Career Development (CAREER) Award.** (2008). U.S. National Science Foundation.
- **Certificate of Recognition.** (2008 and 2007). CUNY Chancellor’s “Salute to Scholars” Ceremony.
- **Best Paper Award.** (2005). The 7th ACM SIGACCESS Conference on Computers and Accessibility.

**Fellowships**

- **National Science Foundation Graduate Research Fellowship.** (2003-2006). Full fellowship for doctoral studies.
- **British Marshall Scholarship.** (Declined to accept Mitchell Scholarship). National fellowship to study in the UK.
- **USA Today All-USA Collegiate Academic First Team.** (2001) National scholarship for twenty U.S. students.
- **Eugene DuPont Memorial Distinguished Scholar.** (1997-2001). Full scholarship to the University of Delaware.

**Educational History**

**University of Pennsylvania,** Department of Computer and Information Science, Philadelphia, Pennsylvania, USA.

- Doctor of Philosophy (Ph.D.), 2006. GPA 4.00
- Master of Science in Engineering (M.S.E.), 2004. GPA 4.00
  - **Thesis:** Generating American Sign Language Classifier Predicates for English-to-ASL Machine Translation.
  - **ASL Courses:** American Sign Language (Levels 1 to 5), Fingerspelling (Levels 1 & 2), Deaf Culture, Conversation & Application (Level 4), and Classifier Predicates (Levels 1 & 2).

**National University of Ireland,** University College Dublin, Department of Computer Science, Dublin, Ireland.

- Master of Science (M.Sc.), 2002. Research degree: human computer interaction, user-interface design, computer accessibility for people with special user-interface needs.
  - Master’s Thesis: Designing user-interfaces for illiterate users in developing communities in India.

**University of Delaware,** Department of Computer and Information Science, Newark, Delaware, USA.

- Master of Science (M.S.), 2001. GPA 4.00
- Honors Bachelor of Science (H.B.S.), 2001. GPA 4.00 Minor in Cognitive Science
Master’s Thesis: Building a natural language generation text-planning component to produce tutorial output for educational software for deaf children learning English writing skills.

Honors: Summa Cum Laude, Top Index Graduating Student (Rank 1 of 3174).

Honor Societies: Phi Kappa Phi, Upsilon Pi Epsilon (Computer Science), Golden Key, Omicron Delta Kappa, Alpha Lambda Delta, National Society of Collegiate Scholars.

**University-Internal Research Funding**


**Peer-Refereed Journal Articles**


**Book Chapters**


**Peer-Refereed Papers, published in Conference Proceedings**


Conference Award: Best Paper Award, ASSETS 2007.


Theses


Other Publications


Service to the Profession: Leadership Roles (2006 to present, ongoing activities listed first)

Editor-in-Chief, the ACM Transactions on Accessible Computing (TACCESS) journal, Association for Computing Machinery, August 2013 to Present.

Vice-President, Special Interest Group on Speech and Language Processing for Assistive Technologies (SLPAT), Association for Computational Linguistics (ACL), January 2013 to Present.

General Chair, The 14th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2012), Boulder, Colorado, USA. (The general chair is the lead of the organizing committee of the conference.)

Associate Editor, the ACM Transactions on Accessible Computing (TACCESS) journal, Association for Computing Machinery, 2011 to 2013.

Editorial Board, the ACM Transactions on Accessible Computing (TACCESS) journal, Association for Computing Machinery, 2008 to Present.


Organizing Committee Member, The 2nd International Workshop on Sign Language Translation and Avatar Technology (SLTAT) held at the 13th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2011), Dundee, Scotland, UK.

Doctoral Consortium Chair, The 12th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2010), Orlando, Florida, USA.

Student Research Competition Co-Chair, The 10th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2008), Halifax, Canada.
Publicity Chair, The 9th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2007), Tempe, AZ, USA.

Co-Chair, Doctoral Student Consortium at the Human Language Technology conference - North American chapter of the Association for Computational Linguistics annual meeting (HLT-NAACL) 2006 in New York, NY, USA.

Service to the Profession: Program Committees (2006 to present, ongoing activities listed first)

Program Committee Member, Fifth Workshop on Speech and Language Processing for Assistive Technologies (SLPAT), Workshop of ACL 2013, June 2014, Baltimore, MD, USA.

Program Committee Member, The 16th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2014), Rochester, NY, USA.

Program Committee Member, The 11th International Web for All Conference (Web4All-W4A2014), April 2014, Seoul, Korea.

Scientific Committee Member, Special Issue of the Journal of Applied Linguistics on “Readability and text Simplification for Education,” 2013.

Program Committee Member, The 15th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2013), Bellevue, Washington, USA.

Program Committee Member, Fourth Workshop on Speech and Language Processing for Assistive Technologies (SLPAT), Satellite Workshop of INTERSPEECH 2013, August 2013, Grenoble, France.

Program Committee Member, Second Workshop on Predicting and Improving Text Readability for Target Reader Populations (PITR), held at the 51st Annual Meeting of the Association for Computational Linguistics (ACL 2013), Sofia, Bulgaria.

Program Committee Member, The 10th International Cross-Disciplinary Conference on Web Accessibility (Web4All-W4A2013), May 2013, Rio de Janeiro, Brazil.

Program Committee Member, The 14th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2012), Boulder, Colorado, USA.

Program Committee Member, Third Workshop on Speech and Language Processing for Assistive Technologies (SLPAT), held at The 13th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, 2012, Montreal, Quebec, Canada.

Program Committee Member, Workshop on Predicting and Improving Text Readability, held at The 13th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, 2012, Montreal, Quebec, Canada.

Program Committee Member, Student Research Workshop and Doctoral Consortium, held at The 13th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, 2012, Montreal, Quebec, Canada.

Program Committee Member, The 9th International Cross-Disciplinary Conference on Web Accessibility (Web4All-W4A2012).

Program Committee Member, The 13th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2011), Dundee, Scotland, UK.

Program Committee Member, Second Workshop on Speech and Language Processing for Assistive Technologies (SLPAT) held at the Conference on Empirical Methods in Natural Language Processing (EMNLP-2011), Edinburgh, Scotland, UK.

Program Committee Member, The 8th International Cross-Disciplinary Conference on Web Accessibility (W4A-2011), Hyderabad, Andhra Pradesh, India.

Program Committee Member, The 12th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2010), Orlando, Florida, USA.
Program Committee Member, First Workshop on Speech and Language Processing for Assistive Technologies (SLPAT), held at Human Language Technologies: The 11th Annual Conference of the North American Chapter of the Association for Computational Linguistics, June 2010, Los Angeles, CA, USA.

Program Committee Member, The Second IASTED International Conference on Telehealth and Assistive Technology (TAT 2009), Cambridge, MA, USA.

Program Committee Member, The 11th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2009), Pittsburgh, PA, USA.

Program Committee Member, The 10th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2008), Halifax, Canada.

Program Committee Member, The IASTED International Conference on Assistive Technologies (AT 2008), Baltimore, MD, USA.

Program Committee Member, The 9th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS 2007), Tempe, AZ, USA.

Program Committee Member, Student Session, INLG 2006: Meeting of the Special Interest Group in Natural Language Generation (SIGGEN), COLING/ACL 2006: International Committee on Computational Linguistics and the Association for Computational Linguistics Joint Conference, Sydney, Australia.

Service to the Profession: Diversity Activities (2006 to present, ongoing activities listed first)

Partner, AccessComputing, NSF-funded program based at the University of Washington to broadening participation in computing for people with disabilities, 2011 to Present.

Participant, AccessComputing Leadership Institute, organized by the AccessComputing program at the University of Washington to bring together leaders and emerging leaders to share best practices and funding for broadening participation in computing for people with disabilities, Seattle, WA, November 6-7, 2008.

Member of the Faculty Working Group, Summit to Create a Cyber-Community to Advance Deaf and Hard-of-Hearing Individuals in STEM (DHH Cyber-Community), NSF-funded summit lead by U. Washington and Rochester Institute of Technology with 50 invited leaders in science, technology, engineering, and mathematics (STEM) education for deaf and hard-of-hearing students, Rochester, NY, June 25-28, 2008.

Service to the Profession: Reviewing (2006 to present, ongoing activities listed first)


Journal Reviewer, the Computer Speech and Language (CSL) journal special issue, January 2013.


Journal Reviewer, the Computer Speech and Language (CSL) journal special issue, March 2012.

Reviewer, The 30th ACM CHI Conference on Human Factors in Computing Systems (CHI-2012), Austin, TX, USA.

Journal Reviewer, the Machine Translation (MT) journal, June 2011.


Reviewer, The 23rd International Conference on Computational Linguistics (COLING 2010), Beijing, China.


Ad Hoc Reviewer, ACM Symposium on User Interface Software and Technology (UIST), May 2009.


Journal Reviewer, the Machine Translation (MT) journal, March 2009.


Service Activities within College/University (2006 to present)

Associate Dean, Division of Mathematical and Natural Sciences (DMNS), Queens College, The City University of New York, June 2012 to August 2014.

Division-wide budget planning, overseeing allocation of research enhancement funding and other faculty research support funds from the dean’s office, community educational and high-school outreach activities, organizing major division-wide events (e.g., Undergraduate Science Research Day conference for several hundred students), assembling divisional information for public relations materials (e.g., new divisional viewbook), budgeting for equipment service contracts for core research facilities, coordinating course development for new general education curriculum at CUNY, and other projects as needed.

Member, Curriculum Committee, Computer Science Department, Queens College, The City University of New York, September 2009 to August 2014.

Co-Organizer, CUNY-NLP Seminar Series (guest speaker series on natural language processing and computational linguistics), Graduate Center, The City University of New York, September 2009 to August 2014.

Member, Advisory Committee, MARC-U*STAR Minority Access to Research Careers program, Queens College, The City University of New York, 2013 to August 2014.

Computer Science Departmental Representative, Undergraduate Research Council, Division of Mathematical and Natural Sciences, Queens College, The City University of New York, March 2008 to August 2014.

Member, Executive Committee, Linguistics Graduate Program, Graduate Center, The City University of New York, September 2011 to August 2013.

Member, Admissions and Awards Committee, Linguistics Graduate Program, Graduate Center, The City University of New York, September 2011 to August 2012.

Member, Macaulay College Council, Macaulay Honors College, The City University of New York, December 2010 to December 2012.

Member, Curriculum Committee (college-wide), Macaulay Honors College, The City University of New York, December 2010 to August 2012.

Acting Director, Masters Program and Doctoral Certificate Program in Computational Linguistics, Graduate Program in Linguistics, Graduate Center, The City University of New York, December 2010 to August 2012. (Course scheduling and staffing, curriculum planning, addressing student concerns and issues, updating website information, and admissions advertising campaign.)

Assistant to the Dean, Division of Mathematical and Natural Sciences (DMNS), Queens College, The City University of New York, November 2011 to June 2012. Organizing calendar of divisional events, educational initiatives, institutional data reporting, coordinating creation of division brochure, and other projects.
Chair, Search Committee for Visiting Faculty Position, Department of Computer Science, Queens College, The City University of New York, December 2011 to May 2012.

Chair, Academic/Internships Subcommittee, Queens College 75th Anniversary Year Celebration Planning Committee, December 2011 to May 2012.

Member, Ad Hoc Committee for Studying the Pathways General Education Program, Faculty Senate, Queens College, The City University of New York, September 2011 to December 2011.

Member, Research Enhancement Committee, Division of Mathematical and Natural Sciences, Queens College, The City University of New York, September 2011 to November 2011.

Peer Mentoring, Reading proposals, providing feedback, and meeting individually with Computer Science faculty members across CUNY who are reapplying for NSF CAREER Awards, May 2011 to July 2011.

Member, Search Committee, CUNY Cyber-Infrastructure Faculty Position, Queens College, 2009 to 2010.

Member, Committee to Enhance Scholarship and External Funding, Queens College, The City University of New York, January 2009.

Organizer of the Computer Science Department’s website redesign/updating project, Department of Computer Science, Queens College, The City University of New York, December 2007 to February 2008.

Invited Presentations and Guest Lectures (2006-Present)


“Learning to Generate Understandable Animations of American Sign Language.” February 2014. Invited Speaker, School of Communication and Information Sciences, Rutgers University, New Brunswick, NJ.


“Automatically Generating Understandable Animations of American Sign Language.” July 2012. Invited Speaker, Summer Academy Colloquium, Department of Computer Science & Engineering, University of Washington, Seattle, WA.

“Generating Linguistically Accurate and Understandable Sign Language Animations.” January 2012. Invited Speaker, Department of Linguistics, Montclair State University, Montclair, NJ, USA.


“Experimental HCI Research with People with Disabilities: Case studies from the LATLab at CUNY.” November 2010. Guest Lecture, Library Sciences 754, “Human Computer Interaction,” Graduate School of Library and Information Sciences, Queens College, The City University of New York, NY, USA.


“Sign Language Animation: Making Information Accessible for People who are Deaf.” November 2009. Sigma Xi Scientific Research Society Faculty Research Presentation, Queens College, The City University of New York, Flushing, NY, USA.

“Generating Animations of American Sign Language Based on Data from Native Signers.” June 2009. Invited Speaker, The Haskins Laboratories at Yale University, New Haven, CT, USA.


Teaching Experience

**Foundations of Human-Computer Interaction**, HCIN-610, Human Computer Interaction Program in the Information Sciences and Technologies Department, Golisano College of Computer and Information Sciences, Rochester Institute of Technology. Course taught: Fall 2014. Students are introduced to human-computer interaction design principles, key concepts in cognitive psychology, design and evaluation techniques, and accessible design for people with disabilities.

**Human-Computer Interaction and Accessibility**, CSci-381/780, Computer Science Department, CUNY Queens College. Course created and taught: Fall 2010. Students are introduced to human-computer interaction design principles, conduct of experimental studies involving human subjects, research methods and paradigms in human-computer interaction, and accessible design for people with disabilities.
Honors Seminar: “A City for Everyone: Science and Technology in NYC Benefiting People with Disabilities”, CUNY Queens College / Macaulay Honors College. Course created: Fall 2007. Taught: Fall 2007, Fall 2008, Fall 2009, Fall 2010, Fall 2011, and Fall 2012. Undergraduate Honors College students learn about the life experiences of people with disabilities, current trends in assistive technology, and introductory computing concepts. Readings and in-class discussion explore the legal, medical, social, educational, cultural, and ethical issues surrounding technology and people with disabilities.

Language Technology: Speech and Language Processing, cross-listed between the Graduate Program in Linguistics and the Doctoral Program in Computer Science, CUNY Graduate Center. Course materials created: Spring 2009. Course taught: Spring 2009, Spring 2010, Spring 2011, Spring 2012. PhD students in Linguistics and in Computer Science are introduced to computational linguistics concepts, speech and language processing technologies, and research areas in the field of Natural Language Processing.

Methods in Computational Linguistics I, Graduate Program in Linguistics, CUNY Graduate Center. Course materials created: Fall 2011. Course taught: Fall 2011, Fall 2013. MA and PhD students in Linguistics are introduced to the Python programming language and key programming techniques used in computational linguistics research.

User-Interface Design and Accessibility, CSC-87100, Computer Science Ph.D. Program, CUNY Graduate Center. Course created and taught: Fall 2007. PhD students in Computer Science are introduced to human-computer interaction and assistive technology for people with disabilities, applications of computer research to problems in accessibility, and experimental research with human subjects.

Artificial Intelligence, CSci-363, CUNY Queens College. Course materials created and taught: Spring 2007. In this upper-level elective course, senior undergraduate students and masters students in computer science were exposed to foundational concepts and techniques in the field of artificial intelligence.

Data Structures, CSci-313, CUNY Queens College. Course materials created: Fall 2006. Taught: Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008. Undergraduate students with a major or minor in computer science take this course as part of the core curriculum; it is a prerequisite for most upper-level courses.


Introduction to Scientific Honors Research, Honors in the Natural and Mathematical Sciences, HMNS-102, CUNY Queens College. Directed undergraduate honors student research projects for course credit: Fall 2010.

Independent Study, Computer Science Department, CUNY Queens College. Directed student research projects for course credit: Fall 2008, Spring 2010.

Introduction to Artificial Intelligence, CSE-391, Department of Computer Science, University of Pennsylvania, Created and taught one-third of course lectures: Spring 2004, Spring 2005.

Information Technology and Its Impact on Society, CSE-100, Department of Computer Science, University of Pennsylvania, Created and taught recitation/laboratory section of the course: Fall 2003. Non-science students learn computing and Internet technology concepts, and they explore issues in electronic privacy and security, intellectual property, societal changes relating to information technology, and other ethical issues in cyberspace.

Ph.D. Student Advisees


Thesis and Exam Committees

Zofia Stankiewicz, Ph.D. committee, The Graduate Center, CUNY.
Qi Li, qualifying exam committee, The Graduate Center, CUNY. Exam: June 2012.
David Guy Brizan, qualifying exam committee, The Graduate Center, CUNY. Exam: August 2011.

Media Outreach

Featured in online article from the George Mitchell Scholarship program of the US-Ireland Alliance on July 5, 2013, in article entitled “Matt Huenerfauth -- Film Animation and American Sign Language.”
Featured in Salute to Scholars newsletter publication from City University of New York in Spring 2012 in an article entitled “Signposts that Digitally Aid the Deaf.”
Featured in Kids These Days radio program on KSKA on August 3, 2011, in segment entitled “Assistive Technology Helping Deaf Students Succeed.”
Featured in the Irish Echo newspaper (national publication aimed at the Irish-American community) on February 23, 2011, as one of the “Top 40 Under 40” young professionals in the United States, with an article about career in computer accessibility and higher education.
Quoted on radio program on WNYC-FM on August 19, 2010, entitled “Signs of Change: Video Chatting Software to Help the Hearing-Impaired.”

Professional Memberships

Sigma Xi, The Scientific Research Society, Queens College Chapter. Association for Computing Machinery (ACM)

Special Interest Groups: Accessible Computing (SIGACCESS), Computer Science Education (SIGCSE), Computers and Society (SIGCAS)

Association for Computational Linguistics (ACL)

Special Interest Group: Natural Language Generation (SIGGEN), Speech and Language Processing for Assistive Technologies (SLPAT).
Curriculum Vita

1. NAME: Jai W. Kang
   CURRENT ACADEMIC RANK: Associate Professor
   TENURE STATUS: Tenured

2. Degrees with fields, institutions, and dates:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Field</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>Operations Research / Industrial Engineering</td>
<td>State University of New York at Buffalo</td>
</tr>
<tr>
<td>M.S.</td>
<td>Operations Research / Industrial Engineering</td>
<td>Georgia Institute of Technology</td>
</tr>
<tr>
<td>M.S.</td>
<td>Information and Computer Science</td>
<td>Georgia Institute of Technology</td>
</tr>
<tr>
<td>M.A.</td>
<td>Mathematics</td>
<td>Kent State University</td>
</tr>
<tr>
<td>B.S.</td>
<td>Pharmacy</td>
<td>Seoul National University, Korea</td>
</tr>
</tbody>
</table>

3. Conferences, workshops, and professional development programs in which you have participated to improve teaching and professional competence in IT:

Coursera MOOC Courses:

1. Introduction to Data Science:
   Instructor: Bill Howe (University of Washington)
   Duration: 10 weeks
   Statement of Completion with Distinction: 6/29/13

2. Inter-professional Healthcare Informatics:
   Instructor: Karen Monsen (Univ. of Minnesota)
   Duration: 10 weeks
   Statement of Completion: 8/12/13 (No “with Distinction” available)

3. Model Thinking:
   Instructor: Scott Page (Univ. of Michigan)
   Duration: 10 weeks
   Statement of Completion with Distinction: 12/31/13

4. Machine Learning:
   Instructor: Andrew Ng (Stanford Univ.)
   Duration: 10 weeks
   Statement of Completion: 12/23/13 (No “with Distinction” available)

Data Mining with Weka MOOC Course
   Instructor: Ian Witten (Univ. of Waikato, New Zealand)
   Duration: 5 weeks
   Statement of Complement: 10/20/13 (No “with Distinction” available)

October 9, 2013. Webinar: Big Data Visual Analytics with MicroDstrategy and Amazon EMR. MicroStrategy
August 27, 2013. Webinar: Achieving Business Value with Big Data by Bill Inmon, CIO

July 15-16, 2013. ArcGIS: Introduction to GIS: Instructor led online 16 hours training

June 27, 2013. Seminar: Cracking the Code Healthcare, North Star Network, Rochester NY


May 9, 2013. Webinar: Hadoop: Extending Your Data Warehouse, Cloudera.

April 3, 2013. Webinar: Making Sense of NoSQL


February 27, 2013. Webinar: Top Reasons to Consider Advanced Analytics for your Organization. TDWI


October 1, 2012. Webinar: Emerging Technologies 2013: The Information-Driven Future along with Emerging Technology Strategies for Big Data Analytics. TDWI.


August 13, 2012. Webinar: Agile Methods for Accelerating Value from Business Intelligence and Data Warehousing: An Inside Look at Trends and Best Practices. TDWI.


August 21, 2011. One-day Hands-on class: Intro to Mobile Business Intelligence (BI) Rochester, NY, MicroStrategy


July 22, 2011. Webinar: Scaling Your Database in the Cloud. Rightscale

July 12, 2011. Webinar: Designing and Implementing Dashboards and Mashboards by Nelson Ruest, Resolutions Enterprises


May 19, 2011. Webinar: Data Warehouse Packages: Quick, Mature, and Extensible. TDWI

May 5, 2011. Webinar: The Intersection of Big Data and Analytics. TDWI

April 21, 2011. Webinar: Making the Case for Just-in-Time Data and Analytics. TDWI


4. Other related computing experience (including teaching, industrial, governmental, etc.):


5. For the four years preceding the self-study, list all department, college, and/or university committees of which you are a member:
Departmental: Member of formal IST departmental committees: Faculty Search (academic year 2013- ); Undergraduate Curriculum (academic years 2001, 2006-7, 2012), Facilities (2006-7), Member of informal peer groups: Programming and Database (2001-12).

GCCIS: Member of Mid-Tenure (academic years 2013-2015); Curriculum (academic years 2008-2010); Tenure (academic years 2007-8); Academic Conduct (academic years 2003-4, 2006-7); RIT Student Scholars (2005-6, 2009-2010)

University: Member of Campus Environment Committee (CEM) (academic years 2011-12)

Other Service Activities: Advisor to the RIT Korean Student Association (KSA) (2003- )

6. Principal publications of the last five years; please state in standard bibliographic format.


Kang, J.W. Faculty Learning Community Portfolio, RIT Digital Media Library, sponsored by RIT Faculty Institute on Teaching & Learning (FITL). (https://ritdml.rit.edu/dspace/handle/1850/6273 )

Kang, J.W., May 28, 2008, Poster session: Lecture-By-Example (LBE) and Raffle Ticket Reward System, sponsored by RIT – Faculty Institute on Teaching & Learning (FITL).


7. Courses taught this and last two academic years term-by-term.

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Title</th>
<th>Course Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall (2011)</td>
<td>Introduction to Database and Data Modeling (4002-360-01 &amp; 03)</td>
<td>Data Warehousing (4002-789-01)</td>
</tr>
<tr>
<td>Winter (2012)</td>
<td>Introduction to Database and Data Modeling (4002-360-02)</td>
<td>Data Warehousing (4002-489-01)</td>
</tr>
<tr>
<td>Fall (2012)</td>
<td>Introduction to Database and Data Modeling (4002-360-01 &amp; 04)</td>
<td></td>
</tr>
</tbody>
</table>
Brief description of your major research and scholarly activities:

My scholarly activities are to discover novelties in the area of Data Warehousing (DW) in order to formulate specific problems to solve. I have found two problems: 1) Application of MDD (Multilevel Definition Dictionary) to validate & implement schema evolution operations: IUD (Insert, Update & Delete) of dimensional tables, attributes, hierarchical paths, levels based on Object-Oriented approach and 2) Fact trend analysis affected by dimensional data evolution rather than schema evolution. With the support from IST Dept. chair Prof. Zilora, I have a graduate research assistant pursuing the first research problem in which he has made substantial progress. I hope not only to disseminate this research next year but also to extend it further if it receives positive acceptance from the DW community. I also have another student who is interested in the same project using a different approach. He plans to work on this as his capstone project.
Deborah LaBelle, Ph.D.
dmlies@rit.edu
deblabelle16@gmail.com

375 Rockingham St.
Rochester, NY 14620
Cell: 610.937.6429

Education

Ph.D. Information Science and Technology, 2008
Drexel University, Philadelphia, Pennsylvania

Dissertation
“The influence of social motivations on performance and trust in semi-virtual teams”

MA Mathematics, May 1978
State University of New York, at Potsdam, New York

Master’s Thesis
“Bases in Banach Spaces”

BA Mathematics May 1978 *
State University of New York, at Potsdam, New York

Honors and Awards
Graduated Cum Laude
Honor’s Math Graduate
Vice President of Pi Mu, Epsilon Mathematics Honor Society
Member Kappa Delta Pi, Education Honor Society

New York State Permanent Teaching Certification - Mathematics 7-12

* Received both Master and Bachelor degrees in an accelerated “BA-MA” program for honor’s Math students. Started graduate courses in sophomore year, “skipped” the undergraduate math courses and took only graduate math courses starting in junior year of college.

Professional Experience

Lecturer, Information Sciences and Technology, Rochester Institute of Technology
August 2013-Present.

Teaching Responsibilities:
Web Design, Fundamental of Information Technology, Needs Assessment

Department Related Activities
Assessment Committee, Member
Student Master’s Project, Committee Member
Associate Professor and Program Director, Information Technology (IT)
Nazareth College, January 2006 – August 2013

**Program Director Responsibilities Include:** Develop the IT program curriculum and continually assess the program against student learning outcomes; maintain a viable pool of adjunct professors; convene regular Advisory Board meetings, perform site visits to internship locations


**College Wide Responsibilities Include:**

*Major Committee Work:*
Chair of the Institutional Review Board at Nazareth College (Human Subjects Review Committee);
Member of the Core Curriculum Committee – the college is transitioning to a new liberal studies core in fall 2013, and I am the elected representative for the School of Management;
Faculty Executive Committee – Ex-Officio member

*Other Committee Work:*
Adult Learners, Online Course Development, Liberal Studies Course Review, Core curriculum for School of Management, Search committees including search for IT services director, School of Management Dean, and various faculty searches

*College Wide Service to students:*
Advisor on a Service Learning “alternative-break” trip to The Mountain Institute in West Virginia (spring 2012);
Co-advisor on a “zip trip” to New York City (February 2010); Volunteer for Midnight Breakfast, “Experience Nazareth”, United Way Raffle, Experience Blackboard Day, Faculty Development Day, Alumni Day, and Open House for prospective students

Assistant Professor and Campus Champion, Information Sciences and Technology (IST)
Pennsylvania State University, Media, PA (Brandywine Campus) – 2001 to 2006

**Campus Champion Responsibilities Included:** Chair the Brandywine IT Advisory Board Committee, Attend regular State Wide Curriculum Meetings at University Park campus

**Teaching Responsibilities Included:** Distributed computing, JAVA and UML, Emerging Technologies, VB.net with ADO.net and ASP.net, Java, and C++. Web Design tools including XML, JavaScript and HTML with Front Page and Dreamweaver, Designing Interfaces and Applications for the Palm Pilot.

**College Wide Responsibilities Included:** Chair of campus Technology Advisory Committee, Organizing member of the committee to establish an undergraduate research symposium named EURECA: “Exposition of Undergraduate Research and Creative Accomplishment”, Mentor for new (non IT) students

**Professional Experience – continued**

Associate Professor and Chairperson for Computer Information Systems
Monroe Community College, Rochester, NY - 1982 to 2001

**Teaching Responsibilities Included:** 19 year career of teaching Computer Science and Computer Information Systems courses

**Chairperson responsibilities Included:**
Plan the master schedule of over 200 courses, build the department budget, hire new full-time and adjunct faculty, supervise the computer labs, and chair monthly department meetings (10 full time faculty members).

While Chair I developed a new curriculum for Information Technology. It included new courses in hardware technology, Microsoft applications, Visual Basic programming, and database design, Business Ethics, Technical Writing, and Business Management. This curriculum was designed for students to transfer easily into the Bachelor of IT Program at the Rochester Institute of Technology, or to gain employment in the computer related fields in the Rochester area. This curriculum, for the most part, is still intact today.

**College Wide responsibilities Included:**

- **Major Committee Work (highlights):** Administrative Advisement Committee for computing on Campus, Tenure and Promotion Committee, Damon City Campus Program Development Committee

- **Other Service to the College (highlights):** Organized department open house for students each semester, Developed the “Outstanding Computer Student” award to recognize a student during spring honor’s ceremonies, Club Advisor for “Association for computer Users”

- **Presentations to Campus and Rochester community included:** “Choosing a Computer Related Career” to undecided High School students; “Programming in Visual BASIC” to Hispanic High School Students interested in Engineering and Science; “Teaching in a virtual Classroom” at Beyond the Chalkboard “Introduction to Visual Basic” at the Rochester Computer Show

**Non-Teaching Professional Employment**

**Systems Analyst**
Astra Arcus AB, Södertälje, Sweden – July 1997 to July 1998 – one year sabbatical

Designed and developed an interactive system for the chemical compound database. Scientists in the pre-clinical research area registered substances, calculated and stored solvent values for combinatorial chemistry, and tracked the use and requisition of substances in the High Throughput Screening Lab. This interactive system included peripheral hardware such as balances, bar code printers and scanners.

**Applications Analyst, General Systems Design, Kodak Apparatus Division**
Eastman Kodak, Rochester, NY – 1979 to 1982

*Project leader* for industrial engineering system - Analyzed and designed a system for tracking work and incentive pay for employees working in production.

*Training Coordinator* for new employees - Trained new employees in PL/1, TSO, debugging and standards

**Software Engineer Fort Hauchuca Telecommunications Project**
GTE Sylvania, Needham, MA - July 1978 to August 1979

Litton 3050 Assembly language programmer for telecommunication system used by the US Army
Publications and Presentations


Professional and Scholarly Activities

Advisory Board Member – Monroe Community College Information Technology Advisory Board, attend meetings and advise on curriculum issues. Invited to help train faculty for new course work.

Evaluator for 2012 National Center for Women in Information Technology (NCWIT) award to aspiring teenage girls interested in a future in IT

Recipient of the 2012 “Friends of Student Development” award, Nazareth College, Rochester

Partnered as technical advisor with Social Work colleague in a “PhotoVoice” project (ongoing) – Photos taken by people who were homeless to help educate others on the experiences of homelessness. Coordinate with the Rochester Homeless Services Network to plan for future “blog” and other activities to keep the project alive.

Presented at the “Homeless Services Network” symposium, Rochester NY (September 2010) – Collaborative activity with colleagues from Nazareth College. In addition to presenting some of the results, I helped redesign input forms for the access database and helped input data collected from survey to assist in gathering data for research on Homelessness in Rochester


Board Member Small Business Council (SBC) of Rochester, 2007 to 2010: Chair of the SBC Headliner Committee and Member of Signature Networking Event Committee


External Curriculum Evaluator for Bunker Hill Community College, Computer Science Department. Produced a 20 page report on my review of the BHCC Computer Science Curricula (1998)

Curriculum Reviewer for the Board of Higher Education in Massachusetts. Evaluated Computer and Information Science Associate and Certificate programs offered by public higher education in MA. - (Bunker Hill CC recommended me). Reviewed Associate and Certificate programs in Computer and Information Science offered by five of the public higher education institutions in MA. Reported recommendations to the state’s Board of Higher Education as to the strength and currency of each program (1999)
Professional Development Activities (past few years only)

Completed a ten-week class "Design and Develop your Online/Hybrid Course” spring 2012

Review Applications for the “Aspirations in Computing” - 2011 - Present

Member of Digital Rochester, Attend meetings held by local chapter of The Association for Women in Computing and Digital Rochester

Member of the Association for Computing Machinery professional organization and Special Interest Group for IT Education – SIGITE (Member of ACM since mid 1980’s)

Attended the National University Telecommunications Network (NUTN) Annual conference on Distance Education in Saratoga, June 2009

Attended “Thinking, Writing, Speaking” Spring Training 2009 on Campus WAC seminar

ACM Special Interest Group in IT Education (ACM-SIGITE) Annual conference on IT education and workshop on using Game Programming in CS01 courses, November 2007

Attended Consortium for Computing in Small Colleges at Union College, Schenectady, NY, workshop on integrating DNA research algorithms into a CS01 course, April 2004

Member of the Virtual Math Team (VMT) Research Group at Drexel University – Research the issues associated with collaborative online learning, 2004 through 2006

Attended ACM SIG Group 2003, Sanibel Island, FL – Topic: Organizational and Behavioral issues and the implementation issues associated with group work.

Campus Grants Awarded

Teaching Innovation and Research Grant, 2012-13: “Gender differences in information seeking behavior” (Nazareth College)

Teaching Innovation and Research Grant, summer 2012: “Exposed – Photovoice of Rochester’s Homeless” (Nazareth College)

Teaching Innovation and Research Grant, 2008-09: “Case Discussions and Projects for Online Discussion Based Learning” (Nazareth College)

Teaching Development Grant, 2004-05: “Cultivating a Community of Learners” (Penn State University)

Teaching Development Grant, 2003-04: “Using blended technologies to enhance the student experience in group work” (Penn State University)

Professional Development Grant, 2003-04: Presented research findings of an empirical study of novice programmers at a conference in Ireland (Penn State University)

Collaborative Research Grant, 2002-03: “Designing applications for Geoscience courses” on Palm™ handheld platform (Penn State University)
Positions

**Rochester Institute of Technology**

9/93 – pres.  Professor of Information Technology

7/09 – 6/12  Professor and Chair, Department of Information Sciences and Technologies.

7/00 – 1/03  Professor and Director, Lab for Applied Computing

3/91 – 8/93  Associate Professor of Information Technology (tenured)

7/89 – 2/91  Associate Professor of Information Technology and Program Chair, Software Development and Management

9/86 – 6/89  Associate Professor of Computer Science

3/83 – 8/86  Assistant Professor of Computer Science

**Empire State College, SUNY**

6/82 – 2/83  Assistant Professor

1/81 – 12/81  Assistant Vice-Provost for Computing

7/77 – 12/80  Director of Administrative Computing

9/73 – 6/77  Assistant Professor of Information Systems

Sponsored Activities (PI unless otherwise noted)

9/09  10/11  ESD, STEP ($127,500)

9/09  8/10  Academic Director, IBM Software Innovation and Collaboration Lab @ RIT ($36,000)

9/08  8/09  co-Director, IBM Software Innovation and Collaboration Laboratory @ RIT, IBM Corp. ($71,500)

3/08  8/08  Faculty-in-Residence, IBM Software Innovation and Collaboration Laboratory @ RIT, IBM Corp. ($26,746)

1/08  12/08  Professor-in-Residence, Excellus BlueCross BlueShield ($36,716 + 175,000 co-op support budget)

1/07  12/07  Professor-in-Residence, Excellus BlueCross BlueShield ($35,000 + 325,000 co-op support budget)

1/06  12/06  Professor-in-Residence, Excellus BlueCross BlueShield ($35,000 + 325,000 co-op support budget)

12/04  11/05  Professor-in-Residence, Excellus BlueCross BlueShield
($33,000 + $325,000 co-op support budget)

9/03  5/04  Professor-in-Residence, Excellus BlueCross BlueShield
       ($28,000 + $325,000 co-op support budget)

6/01  12/02  alphaAve.com, Xerox Corporation ($165,000)

10/99  10/01  Network Processors (Co-PI), IBM, ($65,000)

4/99  6/00  MultiCasting (Co-PI), Sun Microsystems ($150,000)

12/98  12/01  Home Networking (Co-PI), Cisco Systems, ($100,000)

9/90  8/92  Conflict Resolution (CORE) for Software Quality Factors,
       Rome Air Development Center $79,955

3/89  8/90  Software Quality Methodology Integration, Rome Air
       Development Center, ($91,000)

11/88  Software Quality Measurement Methodology

Enhancements, Rome Air Development Center ($86,550)

1/88  12/90  Knowledge-Based Software Assistant (KBSA) Technology
           Transfer Consortium, Rome Air Development Center,
           funding from Xerox Corporation ($15,000)

1988  1992  Instruction in Software Engineering Education, Faculty
           Enhancement Program, National Science Foundation
           ($117,000)

6/89  10/91  Data & Analysis Center for Software, Rome Laboratory,
           Subcontract from Kaman Sciences Corporation ($75,000)

6/90  Software Metrics Workshop, Rome Air Development Center ($15,875)


**Professional activities**

Program Evaluator (IT), ABET (2012 –present)

Member, Technical Steering Committee, Intl Middleware Association, 1999

Conference Chair, ITE 97, (IT Education), June 1997

Conference Chair, ITE 95, (IT Education), October 1995

Conference Chair, ITE 94, (IT Education), RIT October 1994

Member, IEEE Task Force on Computer-Based Systems Engineering, 1992

*Workshop Chair, NSF Faculty Development Workshop, Object-Oriented Technology and Software Engineering*, August 1992

*Workshop Chair, NSF Faculty Development Workshop, Cleanroom Software Engineering*, May 1992

Program committee, 3rd Software Quality Conference, Alexandria Bay, NY,
August 11-15, 1991
Conference Co-Chair, 2nd Software Quality Workshop, RIT, August 1990

Workshop Co-Chair, Software Metrics Workshop, RIT, May 1990
Invited participant, Software Engineering Research Workshop, NSF, Atlanta, January 1990

Conference Co-Chair, 1st Annual Software Quality Workshop, RIT, August 1989
Workshop Chair, NSF Faculty Development Workshop, SE Education, RIT, June 1988
Member, SEI Software Acquisition Metrics Working Group, 1989 to 1991
Consultant, RADC Software Quality Laboratory Definition Study, IITRI, 1988
Invited participant SEI Workshop: Undergraduate SE Education, July 1989

Program committee member, 1988 SEI Conference on SE Education

Institute Committee Assignments
Chair, Resource Allocation and Budget Committee (9/12- present)
RIT Retirement Investment Committee (09-present)
Search Committee, VP/Research, (09-10)
Long Range Planning Committee, Academic Senate (09-10)
Long Range Planning Committee, Academic Senate (08-09)
Chair, Resource Allocation and Budget Committee, Academic Senate (07-08)
Chair, Resource Allocation and Budget Committee, Academic Senate (06-07)
Chair, Resource Allocation and Budget Committee, Academic Senate (05-06)
Chair, Resource Allocation and Budget Committee, Academic Senate (04-05)

Member, Ad-hoc Committee on Nanotechnology Education

IT Envoy, First-in-Class Initiative
Member, Senate Committee on Budget Allocation and Resource
Chair, Long Range Planning Committee, Academic Senate
Member, Intercollegiate Curriculum Committee
Representative, Academic Senate
Member, Institute Capital Budget Committee
Member, Stewardship Subcommittee of Strategic Task Force
Member, Working Group for Research Opportunities and Strategies
Institute Study Group for Classified Research Oversight

**MS Thesis and Project Supervision Chair (unless otherwise noted)**

Steve Colenzo 3/10 (member)


Jeffrey Hole, *Email Overload* (Thesis). (12/08)

David Swartz. *Current Explorer: Measuring Local Currents to Gain Strategic Advantage in Sailboat Racing*. (12/08)

Svetlana Pinchman. *Website’s Adaptability and User Modeling* (11/06).


Michael Magee, *Integrating Children into the Interactive Media Design Process* (12/05)

Juanita Ramirez, *Project Management Database Integration* (9/05)

Pradeep Saxena, A Prototype Web-Based Constituency Support Question Answer System (5/05)


Robert Campbell, *A Framework to Assess the Value of Web Services* (3/03)

**Lauri Bernard, IP v 6 and Residential Networking Databases**

Stephen Deal, *Heterogeneous Distributed Data Base Systems*

Ilia Levi, *An Interactive Query Language with Procedural Features*
Nancy Wisotski, *Implementing Record Structures in the UNIX and MSDOS file systems*

Charles Fung, *Extended Relational DBMS for Engineering Environments*

Eric Taylor, ERIK: *An Information Storage and Retrieval Research System*

Sally Fischbeck, *The Ubiquitous B-tree, Part II*

Karen Caviglia, *Signature Files*


Susan Vogel, *An Alternative Language Interface for Mistress*

John Sexton, *Detecting Errors in Software Using a C Syntax Checker*

Pat Sherwood, *Use of Inspections in Small-Scale Developments*

Charles Ju, *The Natural Language Front End Processor for Mistress Database*

Karen Steelman, *Fuzzy Data and Logical Data Base Design*

Diana Anglero, *Access Control Models and Authorization Mechanisms*

Robert Pesar, *AMISS: Microprogramming Simulation System*

Julia Deal, *Storing 3D CAD/CAM Graphical Data in a Database*

Marcelle Bicker, *A PROLOG Tool-Kit for Implementing Fuzzy Logic*

Frank Cost, *On the Architecture of Intelligent Systems for Typographic Design Work*

Kim Emanuel, *Recovery in Database Systems*

Craig McDonald, *A Simulation of Rochester's 911 Emergency System*

Richard Willison PyGraph::, *A Graphic Front-End for PAISLEY*

Barbara Gibson, *Ada as a Design Specification Language*

Mary Ann Kuntz, *Data Base Machines for Large-Scale Processors*

Larry Sullivan, *Data Base Machines for Medium-Scale Processors*

**Education**


1971  MS  (Information Systems) University of Minnesota.

1969  MBA  (Operations Research) Baruch College, CUNY.

1967  BBA  (Accounting/Finance) Baruch College, CUNY.
Awards

Beta Gamma Sigma (Graduate)
Minnesota Corporate Associates Fellowship

Updated Dec 2013
Curriculum Vitae

Esa Markus Rantanen

September 1, 2014

Department of Psychology, Rochester Institute of Technology
18 Lomb Memorial Drive, Rochester, NY 14623, USA
Tel. (585) 475-4412; Fax (585) 475-6715; email: esa.rantanen@rit.edu

AREAS OF INTEREST, SCHOLARSHIP, AND EXPERTISE

Human factors in complex systems, human performance measurement and modeling, mental workload, decision-making, and human error and reliability; in particular, human timing of actions, temporal decision-making, errors in timing, and the effects of time pressure and temporal uncertainty on workload and performance; development of cognitive models of human operators’ temporal awareness that will allow for prediction of their performance under various operational demands, and development of information displays and other augmented reality applications to support effective, error-free, and timely decision-making under conditions of uncertainty and time stress; development of methods and standards for human-centered design of successful products and systems. Also, human factors education, curriculum development, and program evaluation and accreditation; I believe that bridging the schism between applied and theoretical human factors in education, research, and practice is critical to the discipline’s impact and growth in the future.

CURRENT POSITION

Associate Professor of Psychology, Rochester Institute of Technology, Rochester, New York (Aug. 2007—present)

EDUCATION

DEGREES

Doctor of Philosophy, Engineering Psychology: May 2000
The Pennsylvania State University, University Park, Pennsylvania

Master of Science in Industrial Engineering, option in Human Factors/Ergonomics Engineering: December 1996
The Pennsylvania State University, University Park, Pennsylvania

Master of Aeronautical Science, specialization in Aviation/Aerospace Operations: December 1993
Embry-Riddle Aeronautical University, Daytona Beach, Florida

Bachelor of Science in Professional Aeronautics, minor in Aviation Business Administration: December 1992
Embry-Riddle Aeronautical University, Daytona Beach, Florida

OTHER

Finnish Civil Aviation Administration, Vantaa, Finland

Finnair Training Center, Kuopio, Finland

PROFESSIONAL CERTIFICATIONS

Certified Professional Ergonomist (CPE), by Board of Certification for Professional Ergonomics (BCPE), No. 1286
PROFESSIONAL EXPERIENCE

PRIMARY APPOINTMENT

Associate Professor of Psychology, Rochester Institute of Technology, Rochester, New York (Aug. 2007—present)

PREVIOUS APPOINTMENTS

Research Scientist/Usability Engineer, National Center for Supercomputing Applications (NCSA), University of Illinois at Urbana-Champaign (May—Aug. 2007). Reviewed the user interface and human factors aspects of the software produced by the Cyberenvironment and Technologies Directorate at NCSA for the Environmental Cyber Infrastructure Demonstration (ECID) and the systems-level interaction between ECID’s portal, content management, data provenance, and workflow systems

Assistant Professor, Institute of Aviation Human Factors Division and Department of Psychology, University of Illinois at Urbana-Champaign (Jan. 2000—May 2007)


Technical Information Specialist/Graduate Assistant, Pennsylvania Technical Assistance Program (PennTAP), Pennsylvania State University, University Park, Pennsylvania (May 1995—Aug. 1999). Answered client questions and assisted in gathering information concerning high technology for small manufacturing businesses

Research Assistant, Department of Industrial and Manufacturing Engineering, Pennsylvania State University, University Park, Pennsylvania (Aug. 1994—Dec. 1995). Worked on modeling of industrial visual inspection for Corning Corp. and on investigation of human attentional lapses through eye-movement data for NASA

Research Associate, Aeronautical Science Department, Embry-Riddle Aeronautical University, Daytona Beach, Florida (Dec. 1993—Aug. 1994). Developed research on performance measures and integrated ATC simulations, the University's ATC curriculum, course material, and instructional software

Air Traffic Controller, Helsinki Vantaa International Airport (EFHK), Finnish Civil Aviation Administration, Vantaa, Finland (Dec. 1984—Sep. 1991). Responsible for duties of an air traffic controller in accordance with International Civil Aviation Organization (ICAO) rules, licensed for EFHK tower and ground control, terminal approach radar, procedural approach; on-the-job instructor in the tower

TEACHING EXPERIENCE

GRADUATE STUDENTS ADVISED

ONGOING

Jonathan Umansky, MS, Experimental Psychology, Rochester Institute of Technology. Thesis topic: Workload in nursing

Paul Wiele, MS, Experimental Psychology, Rochester Institute of Technology. Thesis topic: Incidents in healthcare and patient safety


Nicholas Iuliucci, MS, Applied Experimental and Engineering Psychology, Rochester Institute of Technology. Thesis topic: Physicians’ diagnostic decision making and patient history elicitation

Krista Oinonen, Ph.D., Psychology, University of Turku, Finland. Dissertation topic: Effect of task interruptions on multiple object tracking (Co-Adviser with Dr. Lauri Oksama and Prof. Jukka Hyönen, University of Turku)

COMPLETED


5. Stéphanie Stankovic, Ph.D., Cognitive Psychology, Université de Toulouse, France (2008). Dissertation title: Cognitive processes involved in risk management for risky situations in air traffic control (Co-Adviser with Dr. Etienne Mullet, Ethics and Work Laboratory, Institute of Advanced Studies [EPHE], University of Toulouse, France)


2. Lisa Thomas, Ph.D., Psychology, University of Illinois at Urbana-Champaign (2005). Dissertation title: Effects of Display Dimensionality, Conflict Geometry, and Time Pressure on Conflict Detection and Resolution Performance Using a Cockpit Display of Traffic Information. (Co-Adviser with Prof. Christopher D. Wickens, Dept. of Psychology, University of Illinois at Urbana-Champaign)

1. Xidong Xu, Ph.D., Psychology, University of Illinois at Urbana-Champaign (2004). Dissertation title: Effects of air traffic geometry and conflict alerting system reliability on pilots’ conflict detection with cockpit display of traffic information. (Co-Adviser with Prof. Christopher D. Wickens, Dept. of Psychology, University of Illinois at Urbana-Champaign)

**OTHER TEACHING EXPERIENCE**

**Rochester Institute of Technology**, Rochester, NY: Associate Professor, Department of Psychology (Sep. 2007—present). Courses Developed and Taught (2007—2013, quarter system): Graduate Topics in Engineering Psychology (0514.788; topics included Temporal Awareness and Performance, Advanced Ergonomics/Human Factors—Human Performance Models, and Human Error and Reliability), Thesis Proposal (0514.889), Thesis (0514.890), Research Methodology (0514.786), Judgment and Decision-Making (0514.532), Research Methods (0514.402), Industrial and Organizational Psychology (0514.448; online course), Experimental Psychology (0514.400), Cognitive Psychology (0514.443); (2013—present, semester system): Graduate
Engineering Psychology (PSYC 714), Graduate Research Methods (PSYC 642), Industrial and Organizational Psychology (PSYC 234), Honors Special Topics: Engineering Psychology (PSYC 444)


University of Illinois at Urbana-Champaign, Champaign, IL: Instructor, Institute of Aviation (August—December 1999). Taught PSYCH/AVI 258/IE 240 course Human Factors in Human-Machine Systems

Pennsylvania State University, University Park, PA: Instructor, Department of Psychology (August—December 1998). Participated in development and co-taught the PSY432 Engineering Psychology course

Embry-Riddle Aeronautical University, Daytona Beach, FL: Instructor, Aeronautical Science Department (December 1993—August 1994). Continued development of the University's air traffic control (ATC) curriculum, course material, and instructional software; instructor for AT365, AT462 and AT464 ATC courses

Embry-Riddle Aeronautical University, Daytona Beach, FL: Teaching Assistant, Airway Science Simulation Laboratory (September 1991—December 1993). Designed curriculum for the University's ATC program, wrote specifications for the laboratory's ATC radar simulator, installed and programmed the simulator, developed course material and instructional software for the ATC courses; instructor for AT364, AT462 and AT464 undergraduate ATC courses

GRANTS AND CONTRACTS

PRINCIPAL INVESTIGATOR

New York State Energy Research and Development Authority (NYSERDA). $100,000 (Jun 1, 2013—September 30, 2014): Improving Operator Situation Awareness with Wide Area Geographic Data View Displays of the Electric Power Grid

Rochester Institute of Technology, Vice President For Research Proposal Revision Fund, $8,300 (Nov. 26, 2012—May 21, 2013), for revision and resubmission of a research proposal titled The Effect of Target Trajectory Uncertainty and Task Interruptions on Situation Awareness and Multiple Identity Tracking Performance to the National Science Foundation (NSF)


Rochester Institute of Technology, College of Liberal Arts Faculty Development Grant, $4,000 (Sep. 1, 2010—Aug. 30, 2011). The Effect of Target Trajectory Uncertainty and Task Interruptions on Situation Awareness and Multiple Identity Tracking Performance

Rochester Institute of Technology, College of Liberal Arts Faculty Research Fund, $750 (Feb. 15—Jun. 15, 2010): The Effect of Target Trajectory Uncertainty and Task Interruptions on Situation Awareness and Multiple Identity Tracking Performance

Federal Aviation Administration, $10,000 (Jun. 8—Oct. 6, 2006): Development of an Air Traffic Control Measures Database (Purchase Order # DTFAAC-06-P-08010)


Federal Aviation Administration, $130,800 (May 6, 2002—Sep. 31, 2004): Development and Validation of Objective Performance and Workload Measures in Air Traffic Control (Cooperative Agreement No. 02-G-019)

Federal Aviation Administration. $67,289 (May. 2—Dec. 31, 2001): The Effect of Audio Throughput Delay of the NEXCOM System on Air Traffic Controller Performance and Workload (Purchase Order No. DTFA0101P1029)


Total (2001-2014): $501,514

CO-PRINCIPAL INVESTIGATOR:


University of Illinois at Urbana-Champaign Critical Research Initiative Grant, $192,000 (Jul. 1, 2006—Jun. 30, 2008): Center for Air Transportation Research (with Mike Bragg and Natasha Neogi, UIUC-AE, P. R. Kumar, UIUC-ECE, and Kieran Donaghy, UIUC-URP).

Department of Energy (DoE) through Concurrent Technologies Corporation (CTC), $230,000 (Jan. 1, 2006—Mar. 30, 2007): Integration of PSERC Control Center Visualization Techniques into the TVA-Hosted Southeast Wide Area Display Environment (with Tom Overbye, UIUC-ECE).

Power Systems Engineering Research Center (PSERC), $190,000 (Jun. 1, 2005—Jun. 31, 2007): Effective Power System Control Center Visualization (with Tom Overbye, UIUC-ECE, Sakis Meliopoulos, Georgia Tech).


National Aeronautics and Space Administration, $182,575 (Jan. 1, 2001—Dec 31, 2002): Defining the Relationship Between Human Error Classes and Technological Interventions (Grant/Agreement No. NAG-1-02032).


Total (1999-2014): $3,135,015

OTHER GRANTS:

Rochester Institute of Technology, Provost’s Office and the Associate Provost for International Education and Global Programs, $1,600 travel grant (October 1–3, 2014) for participation in the second annual RIT-Malmö University Symposium in Malmö, Sweden.


Grand Total (1999-2014): $3,639,059
UNIVERSITY SERVICE


PROFESSIONAL ACTIVITIES

EDITORIAL BOARD MEMBER


REVIEWER

**Air Traffic Control Quarterly**, published by the Air Traffic Control Association, Inc., Arlington, VA

**Collegiate Aviation Review**, published by the University Aviation Association, Auburn, AL.

**Ergonomics**, published by Taylor and Francis Ltd., Oxfordshire, UK.

**International Journal of Human-Computer Studies**, published by Elsevier Science, B. V.

**International Journal of Industrial Ergonomics**, published by Elsevier Science, B. V.


**National Science Foundation**, Washington, DC

**Natural Sciences and Engineering Research Council of Canada (NSERC)**, Ottawa, Canada.

**Psychological Reports: Perceptual and Motor Skills**, published by Psychological Reports, Missoula, MO.

**Theoretical Issues in Ergonomics Science**, published by Taylor and Francis Ltd., Oxfordshire, UK.

HUMAN FACTORS CONSULTANT

**Civil Aviation Flight University of China (CAFUC)**, Guanhan, Sichuan Province, P. R. China (September 21–26, 2009). Provided guidance in the development of an aviation human factors laboratory at CAFUC.


**UserWorks, Inc.**, Silver Spring, MD (January–August 2006). Provided advice and guidance in literature review and analysis of staffing requirements, standards, and models, and on human factors in the staffing of air traffic control facilities.

**ComEd/Exelon Corp.**, Bulk Power Office, Lombard, IL (June 2005–June 2007). Conducted task- and function analyses of transmission dispatchers’ tasks and developed effective visualization tools for power system control centers’ use.

**Exelon Nuclear**, LaSalle County Generating Station, LaSalle Co., IL (June, 2005). Observed and evaluated nuclear power plant control room panel monitoring practices and procedures.

Muniz Engineering, NASA Johnson Space Center, Houston, TX (January–August 2004). Reviewed and critiqued a final report on root cause software analysis and comparison project, made recommendations for the methodologies, additional information, and evaluation parameters, and provided an expert opinion on the validity of the conclusions.

Abbott Power Plant, University of Illinois at Urbana-Champaign, Champaign, IL (June–July, 2004). Human factors expert; conducted task analyses, evaluated a new digital boiler control interface, and developed an electronic boiler start-up manual and checklist for the plant.

Sensis Corporation, 5793 Widewaters Parkway, DeWitt, NY 13214 (July–August, 2003). Evaluated the Aerobahn Advanced Surface Movement Guidance and Control System (ASMGCS) in terms of human factors requirements for its interface and operation.

Helsinki Airport, Finnish Civil Aviation Administration, Vantaa, Finland (1990–1991). Member and subject matter expert in surface movement radar and apron management task forces.

OTHER


PROFESSIONAL ASSOCIATIONS


☐ Member, Aerospace Systems (AS), Cognitive Engineering and Decision Making (CE), Education (E), Healthcare (HC) Human Performance Modeling (HP), and System Development (SD) technical groups.


☐ Member, HFES committee for review of HFES accreditation process and standards for graduate programs, 2006.

☐ Member, HFES subcommittee formulating criteria for recognition of outstanding undergraduate human factors programs, 2005—2006.


Association for Aviation Psychology, USA, member 1999–present.

SKILLS

Languages: Fully fluent in English, Finnish, and Swedish, reads and writes German.


PUBLICATIONS (Student contributions are denoted by a superscript *)

PEER-REVIEWED PUBLICATIONS IN JOURNALS, IN PRINT OR ACCEPTED


**PEER-REVIEWED PUBLICATIONS IN CONFERENCE PROCEEDINGS**


OTHER PUBLICATIONS IN CONFERENCE PROCEEDINGS


CHAPTERS IN BOOKS


INVITED PRESENTATIONS


10. A Human Factors Evaluation of Illinois Compass. Presented at the University of Illinois at Urbana-Champaign Campus Information Technologies and Educational Services (CITES) Educational Technologies Brown Bag, Champaign, IL, April 13, 2005.
9. Human Interaction with Complex Dynamic Systems: A case of Air Traffic Control. Presented at the First Midwest Institute of Industrial Engineers (IIE) Exchange meeting, Urbana, IL, April 8, 2005 (sponsored by IIE, SME, and Alpha Pi Mu societies).


6. Time-Based Measures of Taskload, Workload, and Performance in Air Traffic Control. Presented at the University of Iowa College of Engineering Industrial Engineering program Graduate Seminar, Iowa City, IA, February 5, 2004


1. Time-Based Measures in ATC Human Factors Research. A white paper presented at the Federal Aviation Administration Civil Aerospace Medical Institute in Oklahoma City, OK, on August 1, 2001.

TECHNICAL REPORTS


**OTHER PUBLICATIONS**


**POSTERS, DEMONSTRATIONS, AND PRESENTATIONS**


WORKSHOPS


2. *Special 'Brown Bag' lunch mentoring* sessions to provide students and early-career and transitional professionals opportunities to develop mentoring relationships with established professionals in the HF/E field. Three sessions during the Human Factors and Ergonomics Society 49th Annual Meeting, Sep. 27-29, 2005, Orlando, FL.

Adam Smith  
Associate Professor / Program Chair  
New Media Design and Imaging  
School of Design | College of Imaging Arts and Sciences  
Rochester Institute of Technology  
adam.smith@rit.edu

Professional Profile

With 12 years of academic experience coupled with over 15 years of freelance work in multimedia, e-learning, web design and UX design, I bring a unique and diverse educational and professional expertise to user experience design and development. With industry contacts and relationships, I have helped establish national recognition for Rochester and RIT through yearly student/industry collaborations, projects, lectures and events.

Education

Masters of Fine Art  
Computer Graphics Design  
Rochester Institute of Technology, Rochester, NY 2001

Bachelor of Fine Art, with high honors  
Advertising Photography  
Rochester Institute of Technology, Rochester, NY 1998

Key Qualifications

12 years of experience with graduate and undergraduate level teaching

15 years of freelance experience in instructional/interactive and user experience design

I instruct each subject area using a wide variety of custom teaching aids, motivational and implementation strategies to engage student/user in active learning and problem solving techniques. Lectures and labs are developed to increase students’ knowledge in computer software technology, design principles and aesthetics. I develop curricula with “real-world” clients and projects to better prepare students for industry and foster team productivity.

My professional work experience involves project planning, content creation, design and implementation across digital media formats and technologies. A large portion of this work has been involved with instructional learning applications, template creation and technical troubleshooting.
Awards, Conferences and Publications

2013 UCDA Design Education Summit Schedule
3D Enhanced Visual Design for Designers

2011 Presenter – Adobe Max
Building Workspaces of the Future – Today

2011 Technical Reviewer
iOS Wow Factor – Tim Wood, Apress

2010 Article - Adobe Online
Collaborative Education for Designers and Developers (2 articles)

2010 Presenter – Adobe Educational Conference
Creating an Interactive Designer in 4 years

2010 Panel Presenter
Adobe AEL Summer Institute

2009 Presenter – Adobe Max: Partners By Design Conference
Flash and Interactive Touch Screen Tables

2009 Presenter – Printing Industry Center Symposium
Typographic Expressiveness of Print Compared to Screen

2008 Award - Graphic Design USA
Website: David Lamb Photography

2008 Award - Graphic Design USA
Website: Hye-Hun Nae Portfolio

2007 Article - Design and Technology
Article written for “Design Magazine” in South Korea

2006 Contributor- Adobe article
Article highlighting the teaching methods and work of my students work at RIT

2005 Lecture - “Designing the Experience”
Society for Technical Communication Conference, Rochester, NY

2002 Best in Show Award for X-ray Safety Training
International conference for the Society for Technical Communication
2002 Distinguished Award for X-ray Safety Training
International conference for the Society for Technical Communication

Employment

Professional Development in Education

September 2014 to present, Associate Professor & RIT Online Coordinator
Rochester Institute of Technology
College of Imaging Arts and Sciences, School of Design
RIT Online User Experience Design & Development Coordinator

July 2010 to present, Associate Professor & Program Chair
Rochester Institute of Technology
College of Imaging Arts and Sciences, School of Design
New Media Design Program

July 2004 to 2010, Assistant Professor
Rochester Institute of Technology
CIAS | SOD | NMDI

July 2002 to 2004, Visiting Assistant Professor
Rochester Institute of Technology
CIAS | SOD | NMDI

July 2001 to 2002, Adjunct Professor
Rochester Institute of Technology
CIAS | SOD | NMDI
2001 to 2008, Kyoto Summer Program and Workshops

2002 to Present, Program List

Course materials and custom labs are available upon request.

• New Media Design (NMDE-BFA)
• User Experience Design and Development (UXDE-AC)

Educational Service

2009 - Present, CIAS support
(Developed all CIAS IAPs, Industry Day, RIT Magic Center, Search Committees)
2007 - 2009, Academic Support Committee
2006 - 2007, Academic Senator (elected)
2006 - Judge and Instructor for Digital Arts Competition & Exhibition
2005 - 2006, Professional Leaves Committee (elected)

Freelance Multimedia Development
Nae and Smith Design, September 2008 - Present
• Clients Effective UI/Rocky Mountain Health Providers, Afinos/Skin UX
• UI Design, Desktop Applications
• IA, UI and website redesigns

Novatek Communications, 2002 - 2005
• Design and Develop desktop based reference application
• Eastman Kodak, March 2002 to 2005
• Design and Develop multimedia/online training applications
• Create SCORM and LMS compliant templates
• Track user success through interactions and quiz results

Azonic Web, LLC, August 2001
• Web site development and implementation
• Author Promotional CD-ROMs
• Author Flash “commercial” Animations

In-Seitz, September 1999-2000
• Author Promotional CD-ROMS
• Sound editing and mixing
• Clients (Legacy Bank of Texas, Accede Co.)

Additional projects, work and presentation materials are available upon request
Tina M. Sutton (Canary)  
(updated August 2014)

Department of Psychology  
Eastman Building, Room 2386  
Rochester Institute of Technology  
Rochester, NY 14623

Office (585) 475-6773  
Home (585) 486-4632  
E-mail: tmsgsh@rit.edu

EDUCATION

2010 University at Albany, State University of New York  
Degree: PhD (Cognitive Psychology)  
Thesis title: The Influence of Emotion on Attention: Examining the  
Processing of Negative and Positive Emotion Words in the Dot Probe  
Task  
Committee Members:  
Dr. Jeanette Altarriba (Chair), Dr. James Neely, Dr. Renata Meuter

2004 University at Albany, State University of New York  
Degree: M.A. (Cognitive Psychology) GPA: 3.9  
Thesis title: The Structure and Representation of Emotion: An  
Investigation of Affective Priming in a Dominant Language  
Thesis Chair: Jeanette Altarriba, Ph.D.

2002 Union College, Schenectady, New York  
Degree: B.S. (Psychology), Magna Cum Laude and Honors in Psychology

RESEARCH INTERESTS

psychology of language, cognition and emotion, emotion word representation within and  
across languages, hemispheric specialization, and bilingualism

TEACHING EXPERIENCE
### Rochester Institute of Technology

**Undergraduate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Effectiveness Rating (1 = worst possible rating and 5 = best possible rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Psychology</td>
<td>3.8 (Fall 2012); 4.4 (Winter 2012); 4.7 Spring (2013); 4.0 Summer 2013; 4.6 Fall (2013); 4.6 Spring (2014); 4.2 Summer (2014)</td>
</tr>
<tr>
<td>Introduction to Psychology</td>
<td>4.6 (Fall 2013)</td>
</tr>
<tr>
<td>Psychological Statistics</td>
<td>4.5 (Spring 2013)</td>
</tr>
<tr>
<td>Research Methods II</td>
<td>3.8 (Spring 2014)</td>
</tr>
</tbody>
</table>

### Union College

**Undergraduate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Very Effective (1 = disagree and 5 = agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Psychology</td>
<td>4.7 (Winter 2011 Section 1); 4.7 (Winter 2011 Section 2)</td>
</tr>
<tr>
<td>Memory and Thinking</td>
<td>4.44 (Fall 2010)</td>
</tr>
<tr>
<td>Psychology of Language</td>
<td>4.39 (Spring 2011)</td>
</tr>
<tr>
<td>Sensation and Perception</td>
<td>4.60 (Fall 2011)</td>
</tr>
</tbody>
</table>

### University at Albany, SUNY

**Undergraduate Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Effectiveness Rating (1 = excellent and 5 = poor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Methods in Psychology</td>
<td>1.34</td>
</tr>
<tr>
<td>Memory and Cognition</td>
<td>1.31 (Summer 2005); 1.96 (Fall 2006); 1.67 (Spring 2007)</td>
</tr>
</tbody>
</table>
Statistical Methods in Psychology 1.53

The College of St. Rose

Undergraduate Courses

Course

Instructor Evaluation (averaged across a series of 10 questions (1 = poor and 4 = excellent)

Foundations of Psychology I 3.54 (Fall 2007); 3.70 (Spring 2008); 3.84 (Spring 2009)

Foundations of Psychology II 3.53

Cognitive Psychology 3.61

Graduate Courses

Research Methods in Counseling 3.76

GRANTS (awarded)

2004 Graduate Initiative Grant, University at Albany, SUNY ($150.00)
2005 Graduate Initiative Grant, University at Albany, SUNY ($400.00)
2005 GSO Travel Grant, University at Albany, SUNY ($450.00)
2006 Graduate Initiative Grant, University at Albany, SUNY ($100.00)
2011 Faculty Research Fund, Union College ($1500.00)
2012 Collaborative Microgrant, Rochester Institute of Technology ($3700.00)
2012 Research Seed Funding Program, Rochester Institute of Technology ($5000.00)
2014 Faculty Mentoring Grant, Rochester Institute of Technology ($1653.53)

PUBLICATIONS


MANUSCRIPTS UNDER REVIEW


MANUSCRIPTS IN PREPARATION


PUBLISHED PROCEEDINGS

PRESENTATIONS


PAPERS


HONORS AND AWARDS

2000    Psi Chi, National Honor Society for Psychology

2001    Union College $2000.00 Excellence Scholarship
2002 Lisa S. Gerhan Memorial Award (presented to a student who exudes academic excellence, a commitment to the field of psychology, and potential for future contributions to the field).

PROFESSIONAL

ACTIVITIES Editorial

Experience

Ad hoc reviewer, *Cognition & Emotion*

Ad hoc reviewer, *Psychonomic Bulletin & Review*

Reviewer, *Brain & Cognition*

Reviewer, *Cognition*

Reviewer, *Cognition & Emotion*

Reviewer, *International Journal of Bilingualism*

Reviewer, *Journal of the Mental Lexicon*

Reviewer, *Language Learning*

Reviewer, *PLOS ONE*

Reviewer, *Poznan Studies in Contemporary Linguistics*

Reviewer, *Psychonomic Bulletin & Review*
Ronald P. Vullo, Ph.D.

E-mail: rpv@mail.rit.edu  
Web: http://ist.rit.edu/~rpv/  
Phone: (585) 475-7281

Professional Experience

Rochester Institute of Technology 12/01 - present  
Associate Professor

• Courses:
  4002-206: Web Foundations  
  4002-306: Digital Image Creation  
  4002-310: Digital Video For WWW  
  4002-320: Introduction to Multimedia: The Internet & the Web  
  4002-406: Rapid Online Presence  
  4002-409: Web Site Design & Implementation  
  4002-535: Network-Based Multimedia  
  4002-536: Web Client Side Programming  
  4002-539: Web Server Side Programming  
  4002-546: Web Client Server Programming  
  4004-737: Website Design & Technology  
  4004-739: Programming for the WWW  
  4004-741: Fundamentals of Web-Based Multimedia  
  4006-230: Computers in Medicine  
  4006-410: The Electronic Health Record  
  4040-820: Discovery (Ph.D. Core)

• Director, Project Galen

• Director, Laboratory for Advanced Web Development and Molly Web Development System Project http://molly.rit.edu/

• Editorial Board Journal of Social Media Studies (JSMS)

• Committees:
  Faculty Search  
  IT Department Facilities (chair)  
  IT Department Graduate Curriculum  
  IT Department Online Presence (chair)  
  IT Department Graduate Futuring Committee  
  Chair, Web Semester Conversion Committee  
  GCCIS Ph.D. Program Development Committee  
  GCCIS Ph.D. Admissions Committee
GCCIS Technical Resource Group
Medical Informatics Advisory Board
Faculty Senate (GCCIS Senator)
MS Medical Informatics Admissions Committee

**St. Jude Children's Research Hospital** 5/00 - 8/01 Education Director, International Outreach
- Created education group, including writing job descriptions, hiring, and managing four direct reports.
- Designed, architected, and developed web-based learning, medical record, and online community system to support 15 partner sites world-wide (PHP, MySQL, Apache, Linux).
- Initiated transition from ISDN-based teleconferencing to internet-based (H.323) teleconferencing.
- Managed multiple outside vendors.
- Managed on-site international fellows program (Over 100 fellows per year).
- Established streaming webcast system to allow international partner sites to participate in on-campus lectures.

**izyx, inc.** 9/99 - 5/00 Founding Vice President, Chief Information Officer
- Wrote the technology portions of the company's business plan.
- Designed and/or selected corporate intranet and extranet infrastructures, technologies, and policies.
- Participated in corporate strategic planning.
- Managed the RFP and technology vendor selection process.
- Translated the company's strategic vision into specific programmer and staff tasks.
- Managed the process of building a web-based enterprise de novo.
- Managed the recruitment and hiring of technology staff.
- Designed user interfaces and database structures for both internal tools and the company's web sites (TCL, Oracle, AOLServer, Unix).
- Stepped in and assumed graphical design responsibilities when the company's graphics arts vendor failed to deliver as promised.
- Assisted in investment capital development.
- Developed and managed all strategic partnerships between the corporation and academic institutions.
University of Connecticut School of Dental Medicine 9/93 - 9/99 Director of Information Systems, Assistant Professor

- Managed all information systems for the school, including clinical, administrative, and academic computing for over 70 faculty, 120 staff, 260 pre- and postdoctoral students.
- Designed, planned, prototyped, and commenced implementation of a web-technology based electronic dental record for 180 chair clinic supporting over 250 providers and over 30,000 patients. Includes digital radiology and imaging, integral links to learning materials, and automated queries of library-based bibliographic databases.
- Designed the user interface and data dictionaries for a VAX-based dental clinic and billing system. Developed a cross-platform relational database data warehouse of the hierarchical data stored in that system.
- Developed a conceptual framework for online curricula, problem-based learning, and continuing education. Tightly integrated with the electronic dental record forming a single patient information/teaching/reference library environment, it is built with WWW technologies, and based on grant funded basic research.
- Webmaster and originator of the first dental school web site in the United States, authoring much of the content. First brought online when there were only approximately 2700 other web sites in the world, it continues to be a popular site receiving over 3,800 'hits' per day.
- Selected, tested, and implemented electronic application and admissions system, eliminating all paper applications to the school.
- Developed online Registrar, Transcript, and Course Schedule System. Built intranet web interface to same.
- Designed and supervised installation of dual platform (Windows and Macintosh) multimedia equipped classrooms including: computer & video projection, recordable whiteboards, teleconferencing, internet access, wireless audio, and wireless dual 35mm slide projection.
- Recruited and hired programming staff.
- Taught Clinical Medical Problem Solving (first and second year medical and dental course).

Committees
- Information Technology Steering Committee (Chair)
- Executive Committee of the Dental Staff
- Standing Committee on Information Systems
- Research and Technology Committee of Dental Council
- Foundations of Dental Medicine Curriculum Committee
- Quality Assurance Committee
- Electronic Medical Record Committee
- Multimedia Curriculum Coordinating Committee
- Educational Information Technology Planning Committee
Web/Internet Steering Committee
Video Advisory Grant Committee
Year 2000 Steering Committee

• Taught Clinical Medical Problem Solving (first and second year medical and dental course).

**State University of New York at Buffalo School of Dental Medicine** 5/89-8/93
Director of Information Services, Assistant Professor, Research Scientist
• Founding member of the informatics program, and principal designer of the systems and infrastructure for the school. Including the design and installation the school's first network, and first connections to the internet. Established the school's first ethernet.

• Recruited and hired programming staff.

• Developed the concept for, and co-authored a funded grant proposal to the Bureau of Health Professions Education to develop a prototype multimedia authoring and learning environment.

• Designed an online curriculum analysis system and supervised its development by an outside consulting firm. The current version is now a commercial product sold by the American Association of Dental Schools.

• Invited lecture series at three universities in Sweden on the design of hypermedia learning environments.

**Apollonia Systems, Inc.** 10/88-12/92 President and CEO
• Developed and marketed shrink-wrapped dental office management software for the Macintosh (second such system on the market).

• Established and maintained a Dentist-only dial-up bulletin board system.
  Developed and marketed a PC (MS DOS) word processor and drawing application for young children.

• Provided individual small business consulting

**New York State Department of Education** 4/88-10/88 Administrator, New York State Summer Institute for Science and Mathematics
• Administered and co-developed a pilot summer residential program for state identified gifted and talented science and mathematics students. Management of program counselors, staff, university faculty volunteers, and all arrangements for housing, meals, supplies, and travel.

**SUNY at Buffalo Center for Learning and Technology** 6/85-5/89 Associate Director
• Instrumental in the organization and management newly established state university center to research and develop new teaching technologies. Acting director during the director's sabbatical leave.
• Developed and formally tested a hypertext learning environment incorporating a simulation of an electron microscope.
• Developed Macintosh version of an Apple II Morse code speech prosthesis system or individuals with cerebral palsy and other communication disabilities.
• Supervised multiple ad hoc programming teams working on multiple projects on PCs, Macintoshes, Amigas, and Apple IIs.

Education
University at Buffalo Ph.D. 1991 Science Education / Instructional Software Design
University at Buffalo Ed.M. 1985 Science Education / Instructional Design
LeMoyne College B.S. 1981 Biology

Professional Associations
AMIA: The American Medical Informatics Association
DentalInformatics.org

Publications, Presentations and Software
• Vullo, Ronald P., Ph.D., Nicolas Thireos, MS, Chad E. Weeden, MS IT, Edward P. Holden, MBA; Project Galen: User-Centered Tablet EHR Development. Poster presented at the American Medical Informatics Association (AMIA) annual meeting, Chicago, Illinois (November, 2012).
• Vullo, Ronald P., Ph.D.; Molly: Simplifying Development of Complex Web Apps, invited presentation to the Rochester Joint Chapters of the IEEE Computer and Computational Intelligence Society, Rochester, New York (June, 2012)
• Vullo, Ronald P., Ph.D., Anne Haake, Ph.D. Chad Weeden.; User-Centered Multi-touch Slate Computing Interface Design for EHR. Poster presented at the American Medical Informatics Association (AMIA) annual meeting, Washington, D.C. (November, 2010).
• Vullo, Ronald P., Ph.D., Nicolas Thireos; Project Galen: An Open Source Electronic Health Record. Poster presented at the American Medical Informatics Association (AMIA) Spring Congress, Phoenix, Arizona (May, 2008).
• Vullo, Ronald P., Ph.D., Christopher A. Egert, Ph.D., Daniel S. Bogaard; Molly: Bringing Back Simplicity to Web Site Development and Web Research. White Paper, 2006
• Vullo, Ronald P., Ph.D., Bogaard, Daniel S., Hartpence, Bruce H.; Visualization Tool Development for Research, Learning, and Implementation, Upstate NY IEEE Workshop on Communications and Networking (2004)
• Bogaard, Daniel S., Ronald P. Vullo, Ph.D., Christopher D. Cascioli; SVG for Educational Simulations, SIGITE Conference, 2004.
• Vullo, Ronald P., Ph.D., Bogaard, Daniel S.; Better than HTML Web: XML for Programming-Free Dynamically Generated Web sites, WWW@10 (2004)
• Bogaard, Daniel S., Ronald P. Vullo, Ph.D.; Better than HTML Web: Dynamically Generated SVG Web sites, WWW@10 (2004)
• Roberson, Bobby J. Ph.D., Richard O’Brien, Ronald P. Vullo, Ph.D., Raul C. Ribeiro, M.D., Jesse J. Jenkins, M.D., Francisco Pedrosa, M.D., Teresa Santiago, M.D., Patricia
• Wilimas, Judith A. M.D., Emily Goldenberg, B.S., Bobby Roberson, Ph.D., Ronald P. Vullo, Ph.D., Deborah Blackstone, Raul C. Ribeiro, M.D.; Access to Pediatric

- Vullo, R.P., et al. (October, 2000). Telemedicine initiatives in International Outreach at St. Jude Children's Research Hospital. Presentation at the American and European Associations for Cancer Education Joint Meeting.
- Vullo, K.T., Vullo, R.P. (June, 1997) QuickQuit™ Clinically based smoking cessation program.
- Vullo, RP Project DENTAL
- Vullo, RP Traci (Real-Time Web "Chat Room" Engine, 1995)


• Tedesco, LA, Eisner, J., Vullo, RP & Hollway, J. University of Buffalo School of Dental Medicine Educational and Technological Initiatives. (Academic Booth, AADS 1992 National Conference)


• Vullo, RP DentLE: The Dental Learning Environment, a Prototype Hypermedia System. (Demonstration, "Teaching Tools for the 90s" Conference, Syracuse New York, November 1991)


• Vullo, RP Microcomputers in Dental Education. (Presentation, "We Don't Know What We Don't Know" Conference, Rochester New York, June 1991)

• Vullo, RP Doctoral Dissertation: The Design and Evaluation of a Computer Based Learning Environment for Secondary Students Incorporating Hypermedia and Simulation. (June 1991)


• Tedesco, LA, Eisner, J., Vullo, RP & Hollway, J. University of Buffalo School of Dental Medicine Educational and Technological Initiatives. (Academic Booth, AADS 1991 National Conference)
• Vullo, RP DentLE: An Application of HyperMedia in Higher Education. (Presentation, MacAdemia 1990 Regional Conference)
• Vullo, RP HyperMedia in Higher Education. (Panel Presentation, SUNY Computing Officers' Association 1990 State Conference)
• Tedesco, LA, Eisner, J., Vullo, RP & Hollway, J. University of Buffalo School of Dental Medicine Educational and Technological Initiatives. (Academic Booth, AADS 1990 National Conference)
• Vullo, RP HyperMedia in Dental Education. (Workshop, AADS 1990 Annual Session)
• Tedesco, LA, Vullo, RP InfoTech - Potential Educational Technologies Applications for the University at Buffalo School of Dental Medicine (1989 Mini-conference on Educational Technologies in Dental Schools)
• Vullo, RP Principles of Database Design (Presentation, 1989 Rochester Business Expo)
• Vullo, RP Principles of Database Design(Presentation, 1989 Buffalo Business Expo)
• Vullo, RP ADOMS™ Computerized Dental Office Management System
• Vullo, RP KidEdit™ (Computer text processor for young children)
• Vullo, RP Logo for Programmers MacTech Quarterly, Volume 1, No, 2, (Summer 1989), pp. 111-14
• Vullo, RP Socratic Dialog (Computer aided instruction/Survey administration system)
Michael Yacci
85 East Gibson St.
Canandaigua, NY 14424
(716) 394-8467

Education:

M.S. Instructional Technology, Rochester Institute of Technology. 1986. Major areas of study: Instructional Development and Computer-Based Training


Related Work Experience:
Rochester Institute of Technology, Information Technology/Instructional Technology Department. 1986-present.
- Current Rank: Professor
- Associate Dean for Academic Affairs, 2012-present
- Associate Director, PhD in Computing and Information Sciences, 2010-12
- Director, MS Human Computer Interaction 2011-12
- Program Chair, Information Technology Program, 1993-1996.

Responsibilities include: supervising curriculum and assessment processes within the Golisano College of Computing and Information Science, resolving student issues, teaching graduate and undergraduate courses in Information Technology, Instructional Technology, Computing and Information Sciences, teaching undergraduate service courses, developing new courses, revising and updating existing curriculum. Development of new degree proposals, including BS and MS Information Technology, MS Learning and Knowledge Management systems, and PhD in Computing and Information Sciences

Partial List of Courses Taught:
- Research Methods
- Interactive Courseware
- Performance Support System Design
- Fundamentals of Instructional Technology
- Evaluation of Instruction
- Program Evaluation
- Simulations and Learning Environments
- Individual Learning Styles
- Theories of Learning
- Human Factors
- Theories of Interactive Computing
- Technology Transfer
- Needs Assessment
- Intro to Programming (C++)
- Programming with Classes (C++)
- Programming with Components (Visual Basic)
- Software Scripting
• AI and Expert Systems
• Seminar on Intelligent Agents
• Agent-Based Modeling
• Technical Writing for Computer Science
• Teaching Skills Workshop

Consulting responsibilities included: instructional design, task analysis, script writing, project planning, computer authoring, and formative evaluation of interactive videodisk and computer-based training projects.

Consulting responsibilities included: instructional design and task analysis of computer-based training.

Consulting and full-time responsibilities included: instructional design, script writing, formative evaluation, project planning, proposal writing, team leadership, computer programming, and task analysis of interactive video, text, and computer-based training projects for IBM, Kodak, SRA.

Presentations and Experiences:


Kurzweifest, September, 2008. RIT. “Putting on a New Skin.”


InSite: Informing Sciences and Information Technology Education Conference, Varna, Bulgaria. Topic: “Active Learning for Classroom Management Model” (with Keith Whittington)


1st Workshop on Learner-Oriented Knowledge Management & KM-Oriented E-Learning. Kaiserslautern, Germany. Topic: “Automated Interactivity Design” 2005


Faculty Institute on Teaching and Learning, RIT. Topic: “Game-Based Learning.” Spring, 2003.


Online Learning Lunch and Lecture Series, RIT. Topic: “Hybrid Techniques in Online Learning.” 2002


AACE World Conference on Educational Multimedia, Hypermedia, and Telecommunications. Topic: “Factors Contributing to Ideal Instructional Interactivity” June, 2001. (Presentation was accepted but was not given.)


Online Learning Faculty Research Associate, RIT, 1999-2001


Concordia University/IDDE Interchange Program presenter, 1990. Syracuse NY. Topic: "Research and Development on Structural Learning."


Concordia University, 1988. Montreal, Canada. Presenter. Topic: "Is There a Difference between Difficult and Uninteresting Instruction and How Does it Affect the Design of Interactive Video."


Publications:

Book Chapters


Yacci, M. (2004). Interactivity, Games, and Objectivist Thought in Ethics and Values in Postmodernism: Challenges and Responsibilities in Distance Education Monterey Mexico: Tecnológico de Monterrey (ITESM) and the Center for Regional Cooperation for Adult Education in Latina America and the Caribbean

Books

Journals/Proceedings


Yacci, M. (2000). Interactivity Demystified: A Structural Definition for Online Learning and Intelligent CBT. *Educational Technology, July/August*


**Columns**

**Projects:**

Student Learning @ RIT Assessment Grant. Exploring the Exploration Program (with Gina Schevchuk). Project begun: September 2013


FEAD Grant, (with Bo Yuan and Mark Marcello). Detecting emotive states from text-based conversations and statements culled from a variety of non-hidden sources. Project report submitted December, 2011.


Emerging Technology Partnership (ETP) Program: Intelligent Agent for Classroom Use. Project completed Jun 2008 as collaborative partnership with RIT Online Learning.

Information Technology Assessment Initiative Coordinator. (2006-2008). Support and planning for department program assessment activities.


Explorations of Rapid Serial Visual Presentation Techniques. FEAD Grant, RIT.


FIPSE Grant (unfunded). The Conversational Diagnostic Agent. This was the only proposal from RIT to make it through the first round in years 2003 and 2004.

Developing a University Knowledge Management System. RIT Associate Provost’s Office Project, 2002-2003

FEAD Grant, RIT. Developing an Instructional Design Agent. 2001-2002 (folded into development of Conversational Diagnostic Agent development project)

RIT CAST Dean’s Project, Redesigning High Volume Courses/Corporate College, 2000. Re-design of self-paced courses in C++ programming using new online technology and differentiated staffing.


Committee Work

GCCIS Curriculum Committee (2009-present)
Information Technology Assessment Committee 2003-2008 (Chair, 2007-8)
GCCIS Assessment Committee (Chair 2012- present)
GCCIS Ad Hoc Portfolio Committee (2007)
RIT Assessment Council (2007)
Information Technology Graduate Curriculum Committee 2004-2006
Teaching and Learning Center Advisory Board, 2002-2003
RIT Prometheus Steering Committee, 2001-2
Provost’s Ad Hoc Evaluation Committee, 2002
CAST Strategic Planning Committee, 1994, 1995
CAST/CIAS Multimedia Committee, 1994, 1995
Information Technology MS Committee (Chair 1993-95), 1998,1999
CAST Tenure Committee, 1994
Information Technology Chair Search Committee (Chair) 1990, 1994
Information Technology Facilities Committee 1990, (Chair) 1991
Information Technology Curriculum Committee 1992-94, 1996-2002 (Chair, 2000-02)
Information Technology Strategic Planning Committee, 1999
Information Technology Undergraduate Degree Planning Committee 1990
Information Technology Evaluation Committee (Chair) 1998-99
Deborah Cahn Memorial Scholarship Committee (Chair) 1997, 1999, 2001
Interactive Media Design Curriculum Committee, 1989, 1990
Eisenhart Award Committee, 1989, 2002

Awards:

Eisenhart Award for Outstanding Teaching, RIT, 2000
RIT Online Learning Research Associate, 2000-2002
Burton Blatt Scholarship, Syracuse University, 1989.
School of Education Scholarship, Syracuse University, 1988.
Stephen J. Zilora

Associate Professor, Department of Information Sciences and Technologies
B. Thomas Golisano College of Computing and Information Sciences
Rochester Institute of Technology
Rochester, NY, 14623-5608, USA
Steve.Zilora@rit.edu  http://www.ist.rit.edu/~sjz/ (585) 475-7643

Educational Background

<table>
<thead>
<tr>
<th>Degree</th>
<th>Field</th>
<th>Institution</th>
<th>Date</th>
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<tbody>
<tr>
<td>Master of Science</td>
<td>Computer Science</td>
<td>NJ Institute of Technology</td>
<td>5/89</td>
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<tr>
<td>Bachelor of Science</td>
<td>Chemical Engineering</td>
<td>University of Rochester</td>
<td>5/80</td>
</tr>
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</table>

Prior Experience

St. John Fisher College, Adjunct Faculty Member, 2001-2002
  ▪ Instructed Freshmen and Sophomore students in “Introduction to Programming” (Visual Basic) for the Computer Science Department.

University of Rochester, Adjunct Faculty Member, 1995-2001
  ▪ Instructed Sophomore and Junior students in “Introduction to Programming” (FORTRAN, Visual Basic) for the Chemical Engineering Department.

Integrated Cabling and Communications, IT Manager, 1997-2001
  ▪ Managed all computing operations at corporate office and both permanent and temporary remote offices.
  ▪ With the President and Vice-President, served as a member of the company’s 3-person strategic planning committee.
  ▪ Co-authored a new business model that made operations more scalable and responsive to seasonal demands. Trained first-line supervisors in business and financial principles in order to make this new model a success.
  ▪ Instituted new Inventory Management and Control measures that cut staffing in half and reduced slippage to insignificant levels.
  ▪ Designed, developed, and implemented an enterprise resource planning system including Inventory Management, Customer Relationship Management, and Job Costing.
  ▪ Advanced both internal and external security systems for access to both physical and electronic resources.

Creative Software Solutions, Inc., Vice President, 1989-1997
  ▪ Oversaw daily operations of this quarter million dollar company including sales, marketing, and R&D.
- Assisted clients in the development of computing strategies and budgets, workflow analyses, and design and development of decision support systems.
- In a management consulting role, performed workflow and dataflow analyses in a variety of industries including Risk Management, Radio, and Real Estate.
- Pioneered web-based sales and service for the TeleForm™ market, thereby creating a national customer base for CSS.
- Developed various in-house programs including data analysis, form design, and accounting packages that are still in use by CSS.

Academic Scholarship


**Invited Talks**


**Litigation Support**


**Popular Writing**


“Smart Home”, *Rochester Business Journal*, 03/05/04.

**Curriculum Development**

New Course Development:

- 4002-250 Introduction to Informatics
- 4002-575 Local Data Integration
- 4002-576 Remote Data Integration
- 4002-590/890 Database Technologies for Bioinformatics
- 4002-771 XML Programming
- 4006-430 Medical Application Integration
- 4006-780 Design, Development, and Deployment
- ISTE-422 App Develop Practices
- ISTE-432 Database App Development
Course Revisions (re-wrote course or added substantial lecture material):
- 4002-208 Introduction to Programming (C++)
- 4002-210 Programming with Classes (C++)
- 4002-360 Introduction to Database and Data Modeling
- 4002-455 Needs Assessment
- 4002-460 Technology Transfer
- 4002-484 Database Client/Server Connectivity
- 4002-720 Data Object Development
- 4002-819 Integration Technologies
- 4002-830 Project Management
- ISTE-330 Database Connectivity & Access
- ISTE-340 Client Programming
- ISTE-341 Server Programming
- ISTE-760 Design, Development, and Deployment of Applications
- ISTE-764 Project Management

Training and Seminars:
- ACM SIGITE Annual Conference, Destin, FL (10/07)
- National Collegiate Honors Council Annual Conference, Philadelphia, PA (11/06)
- ASEE/IEEE Frontiers in Education Conference 2006, San Diego, CA (10/06)
- E-Learn World Conference 2005, Vancouver, BC (10/05)
- American Sign Language 201, RIT/NTID (Summer/05)
- ACM SIGITE Annual Conference, Salt Lake City, Utah (10/04)
- Project Management Institute: Project Management Core Competencies Training, Chicago, IL (8/04)
- Web Services East Conference, Boston, MA (3/03)
- VSLive Conference, NY, NY (6/02)

Grants, Contracts & Gifts

- **Received** ($36k) “Sub-award to RGH R01 project” from NIH, PI-Steve Zilora, 2011.
- **Received** ($18k) “Acute Otitis Media Database Project” from RGHS, PI-Steve Zilora, Co-PI: Dan Bogaard, 2011.
- **Submitted** ($314k) “Using Informatics to Make STEM Real for High School Students” to National Science Foundation, PI-Steve Zilora, Co-PI- Steven LaLonde, 2011.
- **Submitted** ($20k) “Acute Otitis Media Database Project” to RIT & RGHS Alliance, PI-Steve Zilora, Co-PIs: Dan Bogaard, Mike Pichichero, 2010.
- **Received** ($16k) funding for “NTHi Immunity in Young Children” from National Institute of Health via RGHS, PI-Steve Zilora, Supporting Personnel-Dan Bogaard, 2010.
- **Received** ($9k) funding for “Principle to Principled Practice: Faculty Seminar for Writing-to-Learn” from Provost Learning Grant, PI-Lisa Hermsen, Co-PIs: Andrew Perry, Steve Zilora, Michael Jackson, Bruce Ian Meader, Kristine Mook, Thomas Moran, Linda Rubel, Nancy Valentage.
Received ($30k) funding for “Intermodal Freight Transport in the Great Lakes: Development and Application of a Great Lakes Geographic Intermodal Freight Transport Model” from Great Lakes Maritime Research Institute, PIs: Jaime Winebrake et al., Supporting Personnel: Steve Zilora et al., 9/2007

Received ($14k) First-In-Class funding for “GIFT—Geographic Intermodal Freight Transport”, PIs: Jaime Winebrake et al., Supporting Personnel: Steve Zilora et al., 6/2007

Submitted ($25k) “Developing a Hybrid Undergraduate Course that Merges Scholarly and Applied Research in a Lab Environment” to National Collegiate Inventors and Innovators Alliance (NCIIA), 05/2005


Service to the Profession

- Co-Editor-in-Chief Transactions on Information Technology Research
- Reviewer for SIGCSE 2013 Conference, 9/2012.
- Reviewer for 2013 ASEE Annual Conference, 9/2012.
- Reviewer for FIPSE (Fund for Improvement of PostSecondary Education), 11/2003

Service to the Rochester Institute of Technology

Club Advisor
- Advisor to the RIT Chapter of National Society of Collegiate Scholars

Current Committee Positions:
- Institute Eisenhart Committee
- Medical Informatics Advisory Board
- Provost Advising Model Committee
- GCCIS Advising Model Committee

Other past contributions:
- GCCIS College Honors Advocate
- Course Assignment and Reservation System (CARS): a web application for management of faculty teaching assignments and loads. In production use by both the Information Technology and the Networking, Security, and Systems Administration Departments at RIT; production use planned by remaining GCCIS departments.
- **JeopRITdy**: a Jeopardy-like web application for use in a classroom for student review of material. This software was developed collaboratively with Prof. Daniel Bogaard.
- **Online committee voting facility**: Used by the Information Technologies and Sciences Department for election of faculty to Department committees.

## Service to the Community

### Projects
- Director of Teenformatics Project that works with area high schools to introduce students to the field of informatics

### Professional Society Memberships
- **American Institute of Chemical Engineers**
  - Member, 1980 – 2004
  - Member, Computing and Systems Technology Division, 1984 – 2004
  - Officer of Rochester Section, 1992 – 1997
- **American Society of Engineering Education**
  - Member, 2006 – present
- **Association of Computing Machinery**
  - Member, 2002 – present
  - Member, SIGApp, 2002 – 2010
  - Member, SIGITE, 2010 – present
- **Digital Rochester**
  - Member, 2000 – present
- **Project Management Institute**
  - Member, 2004 – present
- **Visual Developers of Upstate New York**
  - Member, 1999 – present

### Board Positions
- **Creative Scanning Solutions, Inc.** – Director, 1989 – present
- **Triad Networking Technologies, Inc.** – Director, 2002 – present
- **Penfield Central Schools Board of Education** – Member – July, 2006 – March, 2013 (President 2008-2010)
- **Monroe County School Boards Association Communications Committee** – Member – July, 2010 – March, 2013
- **Monroe County School Boards Association Legislative Committee** – Member – July, 2011 – June, 2012
- **Monroe County School Boards Association Labor Relations Committee** – Member – July, 2012 – March, 2013
APPENDIX G
Cost Model: Revenue / Cost Projections / Expenses

Include a detailed five-year projection of revenue and expenses as Appendix G. All information for these Financial Projections must be obtained from Finance and Administration (contact Jackie Taylor, Director of Partnership Relations).

Please refer to the Academic Affairs Academic Program Planning website for a list of important data and information that you should bring to the initial meeting with Finance and Administration in order to expedite the preparation of new program financial projections. This information is found on webpage entitled: “Undergraduate and Master’s Programs” (see step #3b “Checklist for Preparing New Program Financial Projections”).

https://www.rit.edu/academicaffairs/academicprogrammgmnt/new-program-proposal-requirements/rit-new-academic-program-proposal-form
## ROCHESTER INSTITUTE OF TECHNOLOGY
### FIVE YEAR PROJECTION OF REVENUE AND COSTS - FULL SHARED COSTS & ESTIMATED MARGINAL INDIRECT COSTS
#### Human Centered Computing

<table>
<thead>
<tr>
<th>TABLE A</th>
<th>2018-2019</th>
<th>2019-2020</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition - BS Students</td>
<td>666,620</td>
<td>1,321,680</td>
<td>1,993,980</td>
</tr>
<tr>
<td>Unfunded Financial Aid - BS Students</td>
<td>(233,171)</td>
<td>(489,267)</td>
<td>(722,438)</td>
</tr>
<tr>
<td><strong>Total Tuition Revenue</strong></td>
<td>433,449</td>
<td>832,413</td>
<td>1,265,862</td>
</tr>
<tr>
<td>Donations &amp; Gifts</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Other Revenue</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL REVENUE</strong></td>
<td>433,449</td>
<td>832,413</td>
<td>1,265,862</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th><strong>EXPENSE</strong></th>
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<tbody>
<tr>
<td>Shared Instruction Costs - if required FTE net loaded on Table B</td>
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<td></td>
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<tr>
<td>COLA</td>
<td>17,062</td>
<td>17,062</td>
<td>100,254</td>
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<td>CB</td>
<td>22,156</td>
<td>128,618</td>
<td>111,406</td>
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<tr>
<td><strong>Subtotal Shared Costs</strong></td>
<td>39,218</td>
<td>128,618</td>
<td>211,660</td>
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<tr>
<td>Incremental Costs</td>
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<tr>
<td>Academic Programs</td>
<td>214,407</td>
<td>621,995</td>
<td>828,390</td>
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<tr>
<td>Indirect Costs on Incremental Instruction</td>
<td>34,267</td>
<td>83,285</td>
<td>123,694</td>
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<tr>
<td><strong>Subtotal New Program Costs</strong></td>
<td>248,674</td>
<td>705,280</td>
<td>953,953</td>
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<tr>
<td><strong>TOTAL EXPENSE</strong></td>
<td>288,392</td>
<td>831,880</td>
<td>1,113,272</td>
</tr>
</tbody>
</table>

| Net Surplus/(Deficit) - Total Costs | 135,257 | 20,732 | 122,534 | 512,414 | 534,268 | 1,355,023 |
| % rev to costs | 146.9% | 102.5% | 110.5% | 142.4% | 142.8% | 127.9% |

- **Credit Hours Consumed**
  - 576
  - 1137
  - 1617
  - 2067
  - 2067

- **Cost per Credit Hour - Full & Estimated Marginal Costs Only**
  - $601
  - $732
  - $720
  - $565
  - $604

- **Total Fall Enrollment FTE**
  - 18.00
  - 35.00
  - 51.00
  - 66.00
  - 66.00

- **Tuition rate full time per semester**
  - $18,245
  - $18,245
  - $19,454
  - $20,229
  - $20,937

- **Tuition rate per credit hour**
  - $1.303
  - $1.540
  - $1.906
  - $2.444
  - $2.586

- **Unfunded Financial Aid Discount**
  - 35.5%
  - 35.5%
  - 35.5%
  - 35.5%
  - 35.5%

Prepared by: Dan Bogaard
Jackie Taylor
Date: 10/24/2014
Version: 4_FINAL

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New Program Financial Projection
10/24/2014
### Table 8

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<tbody>
<tr>
<td>New Full-Time Positions</td>
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<td>Associate Professor - GCCIS</td>
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<td>Associate Professor - COAS</td>
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<tr>
<td>Associate Professor - COLA</td>
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<td>Lecturer - GCCIS</td>
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<td>Administrative Support Staff - 25% FTE</td>
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<td>Technical Staff</td>
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<td>Program Director - GCCIS</td>
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<td>New Part-Time Positions</td>
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<td>COAS Adjunct Faculty</td>
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<tr>
<td>General Supplies</td>
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<tr>
<td>Travel - Faculty</td>
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<td>ITS Charge - Faculty &amp; Staff</td>
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#### CARBUDG Requirements

| Library - EST. MARGINAL                       |             |             |             |             |             |       |
| Student Services - CH-EST. MARGINAL           |             |             |             |             |             |       |
| TOTAL ESTIMATED MARGINAL                      |             |             |             |             |             |       |
| Audit and Other Costs                         |             |             |             |             |             |       |
| TOTAL COSTS DIRECT/ESTIMATED                   |             |             |             |             |             |       |

#### Table 6

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**Note:** The table provides a detailed breakdown of costs, including personnel, library, and various expenditure categories, for the fiscal years 2015-2020. It is part of the financial projection for the ROCHERSTON INSTITUTE OF TECHNOLOGY's Human Centered Computing program.