

New Degree/Certificate Cover Sheet

Date:

Institution:

Campus:

School or College:

Department:

Location: 50% or more online: Yes No *If yes please send to Office of Online Education

County:

Type: Financial Aid Eligible: Yes No

Degree/Certificate name:

Graduate/Undergraduate:

Degree Code:

Brief Description:

Rationale for new degree:

CIP Code:

Name of Person who Submitted Proposal:

Contact Information (phone or email):

Indiana University
School of Informatics and Computing
IUPUI campus

Ph.D. in Informatics
Program Proposal

IUPUI Ph.D. in Informatics

INSTITUTION: Indiana University, Indianapolis (IUPUI)

SCHOOL: School of Informatics and Computing

DEGREE PROGRAM TITLE: Ph.D. in Informatics

FORM OF RECOGNITION TO BE
AWARDED/DEGREE CODE: Doctor of Philosophy (Ph.D.)

SUGGESTED CIP CODE: 11.0104

LOCATION OF PROGRAM/
CAMPUS CODE: Indianapolis/IUPUI

PROJECTED DATE OF
IMPLEMENTATION: August 2014

DATE PROPOSAL WAS APPROVED BY INSTITUTIONAL BOARD OF TRUSTEES:

SIGNATURE OF AUTHORIZING INSTITUTIONAL OFFICER

DATE

DATE RECEIVED BY COMMISSION FOR HIGHER EDUCATION

COMMISSION ACTION

(DATE)

1. Characteristics of the Program

Title of Degree: Ph.D. in Informatics
IU School of Informatics and Computing, IUPUI Campus

Indiana University proposes a Ph.D. in Informatics, offered on the campus of Indiana University Purdue University Indianapolis (IUPUI) and administered by the School of Informatics and Computing.

- a. *Campus(es) Offering Program:* Indiana University-Purdue University Indianapolis
- b. *Scope of Delivery (Specific Sites or Statewide):* Indianapolis
- c. *Mode of Delivery (Classroom, Blended, or Online):* Blended
- d. *Other Delivery Aspects (Co-ops, Internships, Clinicals, Practica, etc.):* Internships, Research Practica
- e. *Academic Unit(s) Offering Program:* IU School of Informatics and Computing, IUPUI, Department of BioHealth Informatics, Department of Human-Centered Computing
- f. *Form of Recognition to be awarded/Degree code:* Doctor of Philosophy in Informatics
- g. *Suggested CIP code:* 11.0104
- h. *Projected Date of Implementation:* Fall 2014

2. Rationale for the Program

- a. *Institutional Rationale (Alignment with Institutional Mission and Strengths)*

Why is the institution proposing this program?

The School of Informatics and Computing has been administering the Ph.D. in Informatics since 2006 for students on both the Bloomington and IUPUI campuses; however, the degrees are administered by Bloomington, and thus the IUPUI campus and the Department of BioHealth Informatics and of Human-Centered Computing are not accurately credited for the contributions of their students and their faculty mentors. The Ph.D. in Informatics is compatible with, and essential to, the research and teaching missions of the school. Faculty engaged in research benefit from the engagement of doctoral students in their research. Many of our faculty members are working on federal and privately sponsored research grants that require skilled graduate research assistants able to commit to multiyear projects. The doctoral program provides the needed talent and skills for faculty research.

Although master's students assist faculty in their research laboratories and in the classroom as teaching assistants, they lack the necessary background and duration of commitment to engage fully in advanced, cutting-edge research. They may be unprepared to assist in teaching sections of courses and in particular lack skills required in some advanced undergraduate and graduate courses. Because most master's students do not have teaching as a career goal, they tend to be less interested in developing their pedagogical skills. Doctoral students, however, are typically preparing themselves for careers in academia and research that require pedagogical preparation. Moreover, some of our Ph.D. graduates will be hired to join the faculties within IU's nine-campus system.

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Even though the doctoral program has already been approved for, and is administered at, the School of Informatics and Computing at Indiana University, Bloomington, the three specialization areas that we propose to offer on the IUPUI campus are somewhat unique. The three specialization areas—bioinformatics, biomedical and health informatics, and human-computer interaction—all exploit the unique opportunities that exist on the IUPUI campus and in the city of Indianapolis. The biomedical and health informatics specialization exists only on the IUPUI campus and is geared to inform the optimal use of information, aided by technology and people, to improve individual health, personal and consumer health, healthcare, public health, and biomedical research. Both the bioinformatics and human-computer interaction programs at the Indianapolis campus are tailored toward applied research, thus meeting the need of Central Indiana's businesses and industry.

What will completing this program prepare the students to do?

The Ph.D. in Informatics prepares graduate who are able to define and investigate relevant research problems in the areas of specialization. The program trains students to address such research problems with inventive and creative solutions that generate new knowledge by demonstrating a high degree of intellectual merit and the potential for broader impact. The Ph.D. curriculum trains students to produce research contributions that advance the theory and practice of their specialization.

The program hones students' ability to (a) define, create, adapt, and apply rigorous research methods; (b) communicate research findings effectively to peers through scholarly, peer-reviewed publications that appear in international venues; (c) define, conduct, and manage a research project that involves several people and interdisciplinary expertise; (d) contribute to writing research grant proposals aimed at securing external funding to support research activities; (e) understand and address pedagogical, ethic and professional issues related to their research, including approval processes and certification for human-subject research. With these in-demand skills, the program aims at shaping graduates who can become successful researchers either in academic settings or in industrial research and development laboratories.

Examples of potential occupations upon graduation in the area of specialization include Assistant Professor, Post-doctoral Research Fellow, Lecturer, Director of Research, Principal Scientist, Data Scientist, Informatics Scientist, IT Application Architect, Senior Data Analyst, Strategic Innovation Manager, Big Data Consultant, Senior Consultant; (specifically for biomedical and health informatics) Behavioral Health Service Manager, Director of Outcomes Research, Safety Assessment Program Leader, Clinical Scientist, Biomedical Informatician, Senior Healthcare Analyst, (for bioinformatics) Senior Bioinformatics Analyst, Bioinformatics Director, Senior Staff Scientist–Bioinformatics, Bioinformatics Scientist, Director of Bioinformatics, Senior Bioinformatics Software Engineer, Bioinformatics Researcher, Computational Biologist, Bioinformatics Software Developer, Lead Formulation Scientist, Principal Bioinformatician, Bioinformatics Application Engineer, Bioinformatics Engineer; (for human-computer interaction) Senior

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User Experience Researcher, HCI Researcher, User Experience Consultant, and Application Design Architect.

How is it consistent with the mission of the institution and of the school/department?

IUPUI is Indiana's premiere urban research and academic health and life sciences campus. The Ph.D. in Informatics supports this mission through the applications of its specializations in Bioinformatics, Biomedical and Health Informatics, and Human-Computer Interaction to healthcare needs to improve the health and quality of life of Indiana's citizens. They also support local industry in the information technology sector.

IUPUI's vision is to be one of the best urban universities, recognized locally, nationally, and internationally for its achievements. Our Ph.D. program leverages on collaborative opportunities in Indianapolis that is unique in the state.

The campus' mission is to advance the State of Indiana and the intellectual growth of its citizens to the highest levels through research and creative activity, teaching and learning, and civic engagement. Premier institutions are distinguished by the success of their Ph.D. programs. With its strong commitment to teaching and research, IUPUI promotes the educational, cultural, and economic development of central Indiana and beyond, offering a distinctive range of bachelor's, master's, professional, and Ph.D. degrees. Our Ph.D. makes a substantial contribution to that portfolio. The University, through the Research Investment Fund (RIF) grant, recognizes the high productivity and impact of our Ph.D. students in their research publications and other endeavors, with our School ranking near the top of the list in terms of funding.

The proposed Ph.D. in Informatics aligns well with Indiana University's mission and vision, because it will be an exemplar of "an excellent world-class, relevant, and responsive education across a wide range of disciplines in baccalaureate, graduate, and professional education" ([Principles of Excellence](#), 2010). By addressing the demand for professionals capable of applying informatics principles to specific domains, it will also provide "leadership in creative solutions for 21st century problems." In addition, the PhD in Informatics aligns well with the University's vision, because it is an innovative program with few peers of its kind in the US and abroad.

The mission of the School of Informatics and Computing is to excel and lead in education, research, and civic engagement in the field of informatics, an integrative discipline that advances knowledge in computing, information, and media technologies, addresses the implications those technologies have for individuals and society, and applies them to any field of study, adapting it to the challenges and opportunities of the Information Age. The proposed Ph.D. in Informatics is consistent with the mission of the School of Informatics and Computing to transcend the study of technology itself: identifying, defining, and addressing information problems in a range of disciplines with a variety of technologies and methodologies. Our Ph.D. program focuses on disruptive translational research that transforms the way people use information and technology in other fields.

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How does this program fit into the institution's strategic and/or academic plan?

The Ph.D. in Informatics is consistent with IUPUI's strategic plan for increasing capacity for graduate education. It is aligned with a number of the strategic actions including the following: "2. Over the next seven years, expand capacity for Ph.D. education by doubling enrollments and degree conferrals in Ph.D. programs; increasing the number of research faculty and research publications by 50 percent; increasing research support that includes funding for graduate students by 30 percent. 3. Develop unique interdisciplinary Ph.D. degrees and Ph.D. degrees, including a degree program linked to the 'big and bold' research project proposed by the task force on accelerating innovation and discovery and a program linked to an active IUPUI research center."¹ Our Ph.D. students are actively engaged in research at a number of research centers on campus including the Center for Computational Biology and Bioinformatics and the Regenstrief Institute.

The Ph.D. in Informatics also aligns with strategic actions for leveraging IUPUI's strengths in the health and life sciences: "1. Become a national model for population health, healthcare delivery, and public-private healthcare partnerships.... 3. Improve the organization, integration, and alignment of IUPUI's healthcare education infrastructure to achieve the common goals of our various healthcare programs. 4. Educate community members on health and wellness to improve Indiana's health status and reduce vulnerability to disease. Promote early interventions that target quality-of-life (prevention, physical activities, decreased tobacco use, alternatives to violence, and so on)."²

The Ph.D. in Informatics is also consistent with the IUPUI Academic Plan, including its second and third goals, namely, the Signature Centers Initiative and Translating Research into Practice (TRIP).³ Our Ph.D. students have been engaged in Signature Centers from the very first round and work on translational research with TRIP scholars.

How does this program build upon the strengths of the institution?

The IUPUI campus and its surrounding community are home to the IU School of Medicine, Regenstrief Institute, several major hospital systems, and pharmaceutical, scientific, and technology corporations. The School of Informatics and Computing's location supports strategic collaborations with these organizations.

Describe the student population to be served?

The location of the program on the IUPUI campus enables nontraditional students who are employed by local industries to pursue a Ph.D. in Informatics while remaining employed at their institutions. This is a very significant need for the local community and is also one of the primary missions of the IUPUI campus.

¹ <http://strategicplan.iupui.edu/StudentSuccess>

² <http://strategicplan.iupui.edu/HealthLifeSciences>

³ <http://www.planning.iupui.edu/599.html>

Appendix 1: See link to *Institutional Rationale, Detail and institution's strategic plan or the plans.*

b. State Rationale

How does this program address state priorities as reflected in Reaching Higher, Achieving More?

We believe that the proposed Ph.D. in Informatics is critical to Indiana's economy as this program provides educational, research, and training opportunities for the citizens of Indiana in the highly critical areas of information technology innovation and health sciences. Having a Ph.D. program with specializations in biomedical and health informatics, bioinformatics, and human-computer interaction on the IUPUI Campus has a direct impact on local industries such as Eli Lilly & Co., Dow Agrosciences, IBM, ExactTarget, the Indiana State government (e.g., FSSA), and Indiana healthcare systems, just to name a few. The Ph.D. affords employees from local businesses the opportunity to engage with our faculty in research, which has three significant impacts: first, it helps the faculty to engage in industry-centered research problems brought in by Ph.D. students from industry; second, the students are obtain a Ph.D. while continuing their employment; and, third, input from industry can shape the curriculum, which is beneficial because informatics is a continually evolving field of study, and it is important for informatics to address fast changing market needs.

Information technology and computer-related occupations continue to demonstrate strong growth in Indiana and, more specifically, in central Indiana.¹ Our experience with past graduates of the Ph.D. program (as administered by Bloomington for research on the IUPUI campus) confirms that our Ph.D. students are often from the central Indiana industry base—individuals who seek the terminal credential needed to attain promotion within their industry. In a recent article, Forbes listed Indianapolis among the top ten US cities creating tech jobs²—citing the lower costs of cities like Indianapolis as a key factor in tech growth.

c. Evidence of Labor Market Need

i. National, State or Regional Need

This Ph.D. degree program shall address a national labor market need. Since the School of Informatics and Computing's Ph.D. program has been in existence for the past eight years (though administered by the Bloomington campus), our experience shows that most of our Informatics Ph.D.'s from IUPUI work in industry and some in the academy. As examples, a Ph.D. specializing in bioinformatics or biomedical and health informatics might take up work in a pharmaceutical firm, technology company, or within a healthcare system; a Ph.D. specializing in human-computer interaction might take up work in the usability lab of a software development company.

A study on "Recruitment and Retention of Faculty in Computer Science and Engineering" (John Stankovic and William Aspray, Computing Research Association, 2003 <http://www.cra.org/reports/r&rfaculty.pdf>) finds that estimated open slots, either

from the creation of new positions or faculty losses, outnumbered new Ph.D.'s going to academia by a total of 325 during the two-year period 1997–1999. That number more than doubled to 735 in the subsequent two-year period. Although the authors do not have longitudinal data showing how many of those open positions were eventually filled, their surveys reveal that doctoral institutions filled 66% of their open positions in the last academic year, while undergraduate colleges filled 64%. The authors note that recent economic changes predict that the balance between Ph.D. supply and demand in the near future will improve.

ii. Preparation for Graduate Programs or Other Benefits

The proposed Ph.D. program is a terminal degree program and, as such, does not prepare students for further graduate study.

iii. Summary of Indiana DWD and/or U.S. Department of Labor Data

The Bureau of Labor Statistics projects that for all 'Computer and Mathematical Applications,' the U.S. will see an increase of 18% between 2012 and 2022—or approximately 685,800 additional jobs. While the Bureau of Labor Statistics does not track information professionals specifically, it does track the industry code for 'Computer and Information Systems Managers' within the 'Computer and Mathematical Applications' category. For the industry code for 'Computer and Information Systems Managers,' the BLS expects an increase of 15.3%, or 97,100 jobs. The Indiana's Department of Workforce Development expects that by 2018, Indiana will see an increase of 1.5% or 604 additional jobs in the 'Information' sector.

Appendix 2: See *Summary of Indiana DWD and/or U.S. Department of Labor Data, Detail*

iv. National, State or Regional Studies

The Technology Workforce Report: Employment Trends and the Demand for Computer-Related Talent in Central Indiana, the Central Indiana Corporate Partnership (CICP) found that computer-related occupations were one of only two occupational groups in Central Indiana that are growing faster than the national average—at 7.3% locally as compared with 6.4% nationally.

Appendix 3: See the link to *National, State, or Regional Studies*

v. Surveys of Employers or Students and Analyses of Job Postings

A recent survey of job postings in Indiana listed over 2000 careers related to IT and Informatics. Many of these postings are looking for graduates to work in information content development, user experience design, health and bioinformatics, data analytics and other areas related to the knowledge and skills for which the proposed degree program will prepare students.

Appendix 4: See the *Survey results of Job Postings and Associated Details*.

vi. Letters of Support

As mentioned earlier, the proposed program has been administered on the IUPUI Campus since the program's inception in 2006 on the Bloomington Campus. Since then, 11 students have graduated from the program and most these graduates are currently employed at various businesses within Indiana. The letters of support provided in the Appendix shows the great appreciation among these graduates because of the availability of the programs in Indianapolis that allowed them to pursue their education along with their employment.

Appendix 5: *Letters of Support from previous graduates from the program.*

3. Cost of and Support for the Program

a. Costs

i. Faculty and Staff

Currently there are 20 full-time tenured/tenure-track faculty members available to teach in the program. The School also has over 15 adjunct faculty members from other Schools at IUPUI and from the business community. They are currently teaching in the school and conducting research in the areas of Bioinformatics, Biomedical and Health Informatics, and Human-Computer Interaction.

The existing faculty resources already in place are sufficient to offer the program.

Appendix 6: *See the list of faculty with appointments to teach in the program.*

ii. Facilities

The program uses existing facilities. No new facilities are needed for this program.

iii. Other Capital Costs (e.g. Equipment)

No other capital expenditures are necessary for the implementation of the major.

b. Support

Existing resources are currently in place to offer the program. No programs have been eliminated to create the program.

i. Special Fees above Baseline Tuition

No new fees shall be assessed to students enrolled in this program.

4. Similar and Related Programs

a. List of Programs and Degrees Conferred

- i. Similar Programs at Other Institutions (CHE summarizes the data.)*
- ii. Related Programs at the Proposing Institution (CHE summarizes the data.)*

b. List of Similar Programs outside Indiana

The closest program to our proposed Ph.D., both in terms of content and geographically, is the Information School at the University of Michigan. The School of Information Sciences and Technology at Pennsylvania State University is another comparison.

Within the state of Indiana, there really is no strictly comparable program. There are programs in computer science at IU, Purdue, and other universities in the state, but they are all more or less traditional computer science departments, not emphasizing the domain and human aspects of IT as does informatics. The Department of Information and Library Science at IUB emphasizes some of the human aspects; however, it does not emphasize the domain aspects.

5. Quality and Other Aspects of the Program

a. Credit Hours Required/Time to Completion

A total of 90 credit hours shall be required for this degree. No more than 30 of those hours would be counted from a master's degree taken at Indiana University or a graduate program at another university. An additional 6 hours of master's thesis or capstone project may be counted toward the Ph.D. at the discretion of the student's program committee, assuming the thesis or capstone project is of sufficient research quality. The 90 credit hours shall consist of courses in the informatics core areas, theory and methodology, specializations, minor, and dissertation work. Since there are three different specializations within the Ph.D. in Informatics (Bioinformatics, Health Informatics, and Human-Computer Interaction), the exact credit hours required in each specialization may vary slightly.

Core courses (21 to 33 credit hours)

The Ph.D. shall require three credit hours of an informatics common core course of all students who begin upon completion of an undergraduate degree. Additional courses in an informatics specialization offered in the school shall also be required. One three-hour course in pedagogy and professionalism shall be required to prepare students for entry to careers in industry or academia. Six hours of seminars in the student's specialization shall be taken in the school.

Theory and Methodology (18 to 24 credit hours)

Courses in theory and methodology applicable to the student's specialization in informatics shall be selected from courses both inside and outside the school.

Specializations (18 to 27 credit hours)

The proposed specializations are Bioinformatics, Biomedical and Health Informatics, or Human-Computer Interaction. Additional elective courses may be taken outside the informatics specialization program or the school. These areas would focus on scientific informatics, biomedical and health informatics, social informatics, personal and consumer health informatics, public health, media arts and sciences, human-computer interaction, or related disciplines. A student could include a minor among these courses in a related field to be approved by the student's advisory committee.

For students planning to focus on scientific informatics, a high level of computer programming competence would be required. Students focusing in biomedical and health informatics would be expected to have a background in one of the healthcare professions, or personal and consumer health informatics, healthcare administration, or public health. Students pursuing a focus on media informatics would need a background in media arts and sciences. Students planning to specialize in social informatics or human-computer interaction should be able to apply interaction design principles and have some grounding in the social sciences.

Minor Area of Emphasis (12 to 15 credit hours)

All students shall be required to have an appropriate minor from another department in the school or from outside the school. Minors shall be selected with the advisor's recommendation. The selected minor should be appropriate for the student's choice of specialization within informatics and might include another specialization in another department in the school. Appropriate minors outside the school would include biology, chemistry, cognitive psychology, computer science, public health, business management, healthcare administration, and biostatistics. In all cases the number of hours to be included in the minor shall be consistent with the requirements of the unit granting the minor. Some of the courses included in the minor may also be counted towards the student's Theory and Methodology requirement or other requirements. Although a minor area of emphasis within the schools may be completed in 12 credit hours, external minors are more typically 15 credit hours.

Qualifying Examinations - Written (Required)

All students shall take a written qualifying examination that aims to assess the student's knowledge and readiness to carry out successful research in the discipline. The exam covers the core courses as prescribed in each of the specialization areas: Bioinformatics, Biomedical and Health Informatics, and Human-Computer Interaction. The examination shall be set by a group of faculty who are familiar with the content of the core courses. Questions shall cover the material pertinent to the selected core courses. Individual specializations may have additional requirements, such as the preparation of a research paper or proposal. Examinations shall be offered after three or four regular (fall or spring) semesters. A retake examination shall be offered within one month to those who have failed to pass at 80% in all subject areas. Examinations must be completed by the beginning of the student's third year in the program but can be completed before that time once the core courses have been completed. Students who do not successfully complete the examination can retake the exam a second time but only for one part, either written or oral.

Qualifying Examinations - Oral (Required)

The oral qualifying examination covers in-depth knowledge of the student's primary research area or any part of the written exam. This examination is administered by a faculty committee within the program area of specialization. That committee consists of the advisor, a representative from the student's minor, a faculty member representing the student's primary research area (who can be, as appropriate, from outside the School of Informatics and Computing), and other faculty involved in preparing the written exam. The examination shall normally be completed within one month of passing the written exam. The student must pass this examination before passing on to candidacy. Only two attempts to pass this examination shall be allowed, if the student was not required to retake the written examination.

Dissertation Proposal

The research proposal for the dissertation must be approved by the student's research committee. That committee may have the same membership as the advisory committee or the student may choose different members. The committee shall consist of at least four faculty members and the majority of the voting members should be from within the School of Informatics and Computing. The chair for the dissertation shall be a faculty member in the School of Informatics and Computing and a member of the Graduate Faculty. The chair may not be the student's primary research advisor. At least one of the other members of the committee should have a primary appointment outside of the school. The student shall defend the proposal at a public colloquium in the school.

Dissertation (21 to 30 credit hours)

A written elaboration of original research that makes a substantial novel contribution to the field must be successfully presented to the research committee in a public defense as described in the Graduate School Bulletin.

Program Description

This Ph.D. in Informatics has three specializations: Bioinformatics, Health Informatics, and Human-Computer Interaction. The main program objectives include preparing students (a) to teach and conduct research in the areas of biomedical and health informatics, bioinformatics, and human-computer interaction; (b) to better understand the optimal use of information, aided by technology and people, to improve individual health, personal and consumer health, healthcare, public health, and biomedical research; (c) to gain insight into the role of informatics in the health *and* life sciences that may lead to an understanding of the genotypic and phenotypic characteristics of human diseases; (d) to gain skills and understanding in translating research in the health and life sciences into practice (translational informatics); (e) to develop human-centered technology that enables both human and technological systems to perform effectively specifically in healthcare applications; and (f) to gain insight into the complications and implications of the use of technology as it relates to human-machine communication, particularly in the health and life sciences.

The Ph.D. in Informatics shall encompass a range of informatics-based options for the student. Informatics is an integrated multidisciplinary field. The doctoral program shall

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provide a balance between technological, scientific, and social dimensions involved in the development and application of information technology.

Whatever the specific focus of their informatics doctoral study, students shall draw on coursework taken from several disciplines. In the scientific informatics area, the degree is built on a base of advanced computer programming skills, mathematics, and statistics; and scientific disciplines like molecular biology for bioinformatics, healthcare delivery systems for biomedical and health informatics, and psychology for human-computer interaction. Knowledge acquired from the integrated study of these areas is applied to research topics related to the storage, retrieval, analysis, and discovery of new knowledge from the data in the fields of bioinformatics and biomedical/health informatics. Such new knowledge may help lead to discoveries in personalized health, to a deeper understanding of diseases, or to the identification of novel drug targets.

For the student interested in biomedical and health informatics, the program offers the resources of one of the largest academic health centers in the country. The School of Informatics and Computing works closely with the School of Medicine (collaboration in and support of bioinformatics, primarily in the Center for Computational Biology and Bioinformatics), School of Nursing (faculty appointments in the Health Informatics Graduate Program, dual curricular development), School of Health and Rehabilitation Sciences (Health Education for the 21st Century Project), School of Dentistry, and the newly established Fairbanks School of Public Health. The School also collaborates with the Regenstrief Institute, with several faculty having affiliate or core scientist appointments in the Center for Biomedical Informatics, one of the premier research centers for biomedical informatics, located on the IUPUI campus.

For the student interested in human-computer interaction, the multidisciplinary program brings together computer programming skills, theory from the cognitive and behavioral sciences, and design principles to enable the student to address research topics related to the design, evaluation, and implementation of interactive computing systems in social and healthcare settings, in medical devices and software systems, and in handheld devices.

We anticipate that other specializations in the degree will be added as the school grows. For example, the Media Arts and Science program currently has both undergraduate and master's degree programs. This program does not currently have a strong enough of a research focus and research-oriented curriculum to include it in this proposal. However, we will offer the Ph.D. in Informatics with a specialization in this area (and perhaps others) as it develops. Any new specializations of the Ph.D. would carry the same core requirements as those outlined here.

Evaluation Plan

The Ph.D. program shall be reviewed and modified each year by the school's Graduate Program Committee on each campus. The program, its specializations, and individual courses shall be assessed based on their respective student learning outcomes by direct and indirect measures and with reference to the Principles of Graduate and Professional Learning. Two formal and external evaluations of the doctorate shall take place during

year three and again during year five. The third year review shall be a small one to two-day review that includes an external person. The fifth year review shall be a systematic three-day review that includes three external people. These reviews are not school reviews, but rather examine the strengths and weaknesses of the Ph.D. program. In both reviews, a written set of recommendations would be delivered to the University Dean of the School of Informatics and Computing and to the Dean of the Graduate School. Prior to each of these reviews, procedures for the review process shall be established consistent with similar reviews at Indiana University and at comparable institutions.

Admission Requirements

Candidates should have a master's degree in a related social science, health discipline, health science, or computer science with a GPA of 3.5 or higher (4.0 scale). The applicants are required to take the Graduate Record Examination (GRE) General Test (Quantitative, Verbal, and Analytical Writing). While we do not expect to institute a fixed minimum requirement, students shall be advised that successful candidates typically have scores above the 70th percentile in the verbal, quantitative, and analytic writing sections. Notably, the school will develop and implement data-driven guidelines for assessing the likely success of prospective applicants, both in the program and after degree completion.

For those applicants whose native language is not English, IUPUI requires a 79 on the Internet-based TOEFL or 550 on the paper-based TOEFL or a 6.5 on the IELTS or a G011 or higher on the IUPUI EAP Placement Exam taken from within the last two years.⁴ However, because of the importance of writing skills on a program with a dissertation requirement, for the Ph.D. in Informatics, applicants should typically score above the 70th percentile (i.e., 94 on the Internet-based TOEFL). Final decisions on admission shall be made by a Graduate Admissions Committee within each of the two departments: The Department of BioHealth Informatics and the Department of Human-Centered Computing.

Beyond these measures for admission, the applicants shall submit a written statement of purpose for entering the Ph.D. program, three letters of recommendation from individuals in professional positions able to judge success (two of whom would generally be tenured or tenure-track faculty), original transcripts, and a curriculum vitae.

Anticipated student clientele: While the program on the Bloomington campus is designed to meet the needs of traditional students, on the Indianapolis campus, students are more likely to be nontraditional and employed in a part-time or full-time position. Students also come to the IUPUI campus from diverse backgrounds—especially in biomedical and health informatics and human-computer interaction.

The School of Informatics and Computing has already been administering the Ph.D. in Informatics program on the Indianapolis Campus since the program's inception in 2006. We have admitted 4–5 students per year. Depending on the area of specialization, the

⁴ <http://iapply.iupui.edu/graduate/english/>

students have come mostly from local companies, such as Eli Lilly & Co., that specifically focus on the Health and Bioinformatics specializations.

Specific Student Clientele for Program

The population expected to be served by this program includes graduates of bachelor's or master's degree programs in computer science, biology, chemistry, physics, informatics, information systems/science, human-computer interaction, media arts and sciences, cognitive science, psychology, education, sociology, and business, and of clinical degree programs in medicine, dentistry, nursing, pharmacy, public health, and other related fields.

Appendix 7: See Sample Curriculum and course sequences for the program

Faculty and Administrators

Administrators

Robert Schnabel, Ph.D., University Dean and Professor, IUB

Mathew Palakal, Executive Associate Dean and Professor, IUPUI

Karl MacDorman, Ph.D., Associate Dean for Academic Affairs and Associate Professor, IUPUI.

Steven Mannheimer, M.F.A., Associate Dean for Faculty Affairs and Professor, IUPUI

Brad Doebbeling, M.D., Department Chair of BioHealth Informatics and Professor, IUPUI

Davide Bolchini, Ph.D., Interim Department Chair of Human-Centered Computing and Assistant Professor, IUPUI

Anthony Faiola, Ph.D., Director, Human-Computer Interaction Program and Associate Professor, IUPUI

Josette Jones, Ph.D., Director, Health Informatics Program and Associate Professor, IUPUI

Huanmei Wu, Ph.D., Director, Bioinformatics Program and Associate Professor, IUPUI

Appendix 6: See List of Faculty who will teach in the program

b. Exceeding the Standard Expectation of Credit Hours

The proposed program does not exceed the standard expectation of credit hours.

c. Program Competencies or Learning Outcomes

Graduates of the Ph.D. in Informatics program will demonstrate expertise in the following core competencies:

- Identify, discuss, and apply the fundamental concepts, theories, and practices in informatics, such as information representation and architecture, retrieval, structured query language, information extraction and integration from disparate data sources, information visualization and security, and data mining tools and methodologies
- Apply knowledge of statistics, including sampling and correlations, research paradigms, distinctions and limitations of qualitative, quantitative, and mixed method research designs, validity, and reliability
- Formulate steps involved in transforming data to knowledge, as well as introducing different techniques used at each step
- Prepare research proposals, conduct peer reviews, create an annotated bibliography, and create and present a high-level presentation pertaining to research
- Acquire and apply the ability to read and critique scientific articles by analyzing the problem presented, solutions proposed and critically looking at the solutions/results, as well as learn how to organize and write a scientific article through critical thinking and discussion
- Impact informatics on other disciplines from several perspectives, including the social and economic aspects
- Develop and deliver classroom lectures, including processes for critically evaluating classroom lectures and how to prepare effective teaching materials
- Apply research methods and acquire advanced knowledge in different areas of research through apprenticeship and mentorship

d. Assessment

Students will be assessed for mastery of program competencies with different methods in different classes. They will take exams, write papers, and engage in team-based projects. In addition to the learning outcomes and assessment methods in use in the online courses, the faculty is adopting best practices for maintaining rigor and quality in all courses. There will also be assessment by surveys.

e. Licensure and Certification

Graduates of this program will be prepared to earn the following:

State License: N/A

National Professional Certifications: N/A

Third-Party Industry Certifications: N/A

f. Placement of Graduates

Our experience shows that most of our Informatics Ph.D. graduates from IUPUI work in industry and some in academia. As examples, a Ph.D. graduate specializing in bioinformatics or biomedical and health informatics might direct research and development in a pharmaceutical firm, Technology Company, or within a healthcare system; a Ph.D. graduate specializing in human-computer interaction might lead a team

IUPUI Ph.D. in Informatics

in the usability lab of a software development company.

g. Accreditation

There are no specific accreditation requirements for a Ph.D. in Informatics.

6. Projected Headcount, FTE Enrollments & Degrees Conferred

As mentioned earlier, the proposed program has been administered on the IUPUI Campus since the program's inception in 2006 on the Bloomington Campus. The program grew steadily during the earlier years; however, we have significantly reduced admission for the past few years to cap the total number of students at 50–60. This is an optimal capacity that we can manage within the available resources and a means of ensuring highly competitive admissions. The table below shows the total number of students for each year, in each of the specialization areas.

Institution/Location:	Indiana University-Purdue University
Program:	Indianapolis
Proposed CIP Code:	Ph.D. in Informatics
Base Budget Year:	11.0104
	2013-24
	Current
	<u>Enrollment</u>
Enrollment Projections (Headcount)	
Full-time Students	16
Part-time Students	<u>38</u>
	54
Enrollment Projections (FTE)	
Full-time Students	16
Part-time Students	<u>29</u>
	45
Degree Completion Projection	11
CHE Code:	
Campus Code:	
County Code:	
Degree Level:	
CIP Code:	

Appendix

1. Link to Institutional Rationale, Detail and institution's strategic plan
2. Summary of Indiana DWD and/or U.S. Department of Labor Data, Detail
3. Link to National, State, or Regional Studies
4. Survey results of Job Postings and Associated Details
5. Letters of Support from previous graduates from the program
6. List of faculty with appointments to teach in the program
7. Sample Curriculum and course sequences for the program
8. Letter of support from the Dean of School of Informatics and Computing
9. PhD Program Faculty CV

Appendix

Appendix 1: Link to Institutional Rationale, Detail and institution's strategic plan or the plans.

<http://strategicplan.iupui.edu/>

Appendix 2: Summary of Indiana DWD and/or U.S. Department of Labor Data, Detail

Long Term Industry Projections: Indiana in 2018 (partial list)

From Indiana DWD / Hoosiers by the Numbers - <http://www.hoosierdata.in.gov/nav.asp?id=214>

Industry	Base Year Emp.	Projected Year Emp.	Percent Change	Numeric Change
Total Employment, All Jobs	3,096,546	3,362,953	8.6%	266,407
Total Self-Employed and Unpaid Family Workers, Primary Job	217,838	233,191	7.0%	15,353
Self-Employed Workers, Primary Job	215,418	231,301	7.4%	15,883
Unpaid Family Workers, Primary Job	2,420	1,890	-21.9%	-530
Goods-Producing	684,275	678,954	-0.8%	-5,321
Natural Resources and Mining	18,892	18,973	0.4%	81
Construction	144,482	172,270	19.2%	27,788
Manufacturing	520,901	487,711	-6.4%	-33,190
Services-Providing	2,194,433	2,450,808	11.7%	256,375
Trade, Transportation, and Utilities	578,805	607,929	5.0%	29,124
Information	39,589	40,193	1.5%	604

Financial Activities	132,853	140,007	5.4%	7,154
Professional and Business Services	284,825	347,179	21.9%	62,354
Education and Health Services	617,071	730,690	18.4%	113,619
Leisure and Hospitality	284,697	308,857	8.5%	24,160
Other Services (Except Government)	84,138	90,437	7.5%	6,299

Bureau of Labor Statistics Employment by Detailed Occupation 2012 and projected 2022

http://www.bls.gov/emp/ep_table_102.htm

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[INDUSTRY OUTPUT AND EMPLOYMENT](#)

[INTER-INDUSTRY RELATIONSHIPS \(INPUT-OUTPUT MATRIX\)](#)

[LABOR FORCE](#)

[OCCUPATIONAL EMPLOYMENT](#)

Employment by detailed occupation

Other available formats: [XLS](#), [1.5 MB](#)

Table 1.2 Employment by detailed occupation, 2012 and projected 2022 (Numbers in thousands)

2012 National Employment Matrix title and code		Employment				Change, 2012–22		Job openings due to growth and replacements	
		Number		Percent distribution		Number	Percent		
		2012	2022	2012	2022				
Total, all occupations	00-0000	145,355.8	160,983.7	100.0	100.0	15,628.0	10.8	50,557.3	
Management occupations	11-0000	8,861.5	9,498.0	6.1	5.9	636.6	7.2	2,586.7	
Top executives	11-1000	2,361.5	2,626.8	1.6	1.6	265.2	11.2	717.4	
Chief executives	11-1011	330.5	347.9	0.2	0.2	17.4	5.3	87.8	
General and operations managers	11-1021	1,972.7	2,216.8	1.4	1.4	244.1	12.4	613.1	
Legislators	11-1031	58.4	62.1	0.0	0.0	3.7	6.4	16.5	
Advertising, marketing, promotions, public relations, and sales managers	11-2000	637.4	700.5	0.4	0.4	63.1	9.9	203.3	
Advertising and promotions managers	11-2011	35.5	38.0	0.0	0.0	2.4	6.9	13.4	
Marketing and sales managers	11-2020	539.8	592.5	0.4	0.4	52.7	9.8	166.6	
Marketing managers	11-2021	180.5	203.4	0.1	0.1	22.9	12.7	61.7	
Sales managers	11-2022	359.3	389.0	0.2	0.2	29.8	8.3	106.9	
Public relations and fundraising managers	11-2031	62.1	70.1	0.0	0.0	8.0	12.9	21.3	
Operations specialties managers	11-3000	1,647.5	1,799.7	1.1	1.1	152.1	9.2	459.1	
Administrative services managers	11-3011	280.8	315.0	0.2	0.2	34.2	12.2	79.9	
Computer and information systems managers	11-3021	332.7	383.6	0.2	0.2	50.9	15.3	97.1	
Financial managers	11-3031	532.1	579.2	0.4	0.4	47.1	8.9	146.9	
Industrial production managers	11-3051	172.7	168.6	0.1	0.1	-4.1	-2.4	31.4	
Purchasing managers	11-3061	71.9	73.4	0.0	0.0	1.5	2.1	17.3	
Transportation, storage, and distribution managers	11-3071	105.2	110.3	0.1	0.1	5.1	4.9	29.1	
Compensation and benefits managers	11-3111	20.7	21.4	0.0	0.0	0.6	3.1	6.1	
Human resources managers	11-3121	102.7	116.3	0.1	0.1	13.6	13.2	40.6	
Training and development managers	11-3131	28.6	31.8	0.0	0.0	3.2	11.2	10.7	

Bureau of Labor Statistics Employment Projections – Employment by major occupational group, 2012 and projected 2022 - <http://www.bls.gov/news.release/ecopro.t06.htm>

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Table 6. Employment by major occupational group, 2012 and projected 2022
(Employment in thousands)

2012 National Employment Matrix title and code

		Employment		Change, 2012-22	
		2012	2022	Number	Percent
Total, all occupations.....	00-0000	145,355.8	160,983.7	15,628.0	10.8
Management occupations.....	11-0000	8,961.5	9,498.0	536.6	7.2
Business and financial operations occupations.....	13-0000	7,167.6	8,065.7	898.1	12.5
Computer and mathematical occupations.....	15-0000	3,814.7	4,500.5	685.8	18.0
Architecture and engineering occupations.....	17-0000	2,474.5	2,654.0	179.6	7.3
Life, physical, and social science occupations.....	19-0000	1,249.1	1,374.8	125.7	10.1
Community and social service occupations.....	21-0000	2,374.7	2,783.4	408.8	17.2
Legal occupations.....	23-0000	1,247.0	1,379.9	132.9	10.7
Education, training, and library occupations.....	25-0000	9,115.9	10,131.7	1,015.8	11.1
Arts, design, entertainment, sports, and media occupations.....	27-0000	2,570.9	2,751.6	180.6	7.0
Healthcare practitioners and technical occupations.....	29-0000	8,049.7	9,782.6	1,732.9	21.5
Healthcare support occupations.....	31-0000	4,110.2	5,266.0	1,155.8	28.1
Protective service occupations.....	33-0000	3,325.3	3,588.3	263.0	7.9
Food preparation and serving related occupations.....	35-0000	11,760.1	12,882.0	1,101.8	9.4
Building and grounds cleaning and maintenance occupations.....	37-0000	5,522.3	6,213.3	691.0	12.5
Personal care and service occupations.....	39-0000	5,375.6	6,498.5	1,122.9	20.9
Sales and related occupations.....	41-0000	15,105.0	16,200.5	1,095.5	7.3
Office and administrative support occupations.....	43-0000	22,470.1	24,004.1	1,534.0	6.8
Farming, fishing, and forestry occupations.....	45-0000	947.2	915.0	-32.2	-3.4
Construction and extraction occupations.....	47-0000	6,092.2	7,394.1	1,301.9	21.4
Installation, maintenance, and repair occupations.....	49-0000	5,514.8	6,046.0	531.2	9.6
Production occupations.....	51-0000	8,941.9	9,017.5	75.6	0.8
Transportation and material moving occupations.....	53-0000	9,245.7	10,036.4	790.6	8.6

Table of Contents

Appendix 3: National, State, or Regional Studies, Details

Battelle Technology Partnership Practice (Battelle Memorial Institute). (2012). Indiana's Competitive Economic Advantage: the Opportunity to Win the Global Competition for College Educated Talent. https://mpcms.blob.core.windows.net/e30e30cc-342f-4bd2-9b6e-c5cb1c39f202/docs/1d2a86b8-577b-4cae-8223-a23222396e09/cicp_battelle-college-workforce-study.pdf

Central Indiana Corporate Partnership. (2014). Technology Workforce Report – Employment Trends and the Demand for Computer-Related Talent in Central Indiana. <https://docs.google.com/file/d/0BzGlwixlZHZPYmw4UEtNZGtrUUU/edit>

Kotkin, Joe, “The Surprising Cities Creating the Most Tech Jobs”, *Forbes*, November 11, 2013. <http://www.forbes.com/sites/joelkotkin/2013/11/20/the-surprising-cities-creating-the-most-techjobs/>

Appendix 4: Surveys of Job Postings and Associated Details

Computing Research Association. (2012). Taulbee Survey May 2012

http://cra.org/uploads/documents/resources/taulbee/CRA_Taulbee_2011-2012_Results.pdf

National Science Foundation Survey: Characteristics of Recent Science and Engineering Graduates (includes employment data for graduates with master's degrees in science and engineering, page 6)

<http://www.nsf.gov/statistics/nsf12328/pdf/nsf12328.pdf>

Appendix 5: Letters of Support from previous graduates from the Program

Phone 317 276 2000

March, 16th, 2014

TO: Indiana Commission for Higher Education
Indiana University Trustees
Indiana University–Purdue University of Indianapolis Graduate Affairs Committee
Indiana University Bloomington Academic Leadership Committee

RE: Ph.D. in Informatics
School of Informatics & Computing, IUPUI

I received my Ph.D. degree from School of Informatics & Computing, IUPUI in April, 2010. The program has helped me to develop skills in academic, research, and practical problem solving. The curriculums were demanding but I was able to complete it while being a full-time employee of Eli Lilly, because it was offered at IUPUI.

Before started my Ph.D. study, I had contemplated pursuing higher education for many years. However, with a full-time job and family obligations, it was impossible for me to attend any program that was not offered locally. As soon as School of Informatics & Computing offered Ph.D. program, I applied immediately. I had a wonderful experience during my study and have always been grateful that this program is available to students like me.

Given the tightening job market, deciding to pursue higher education has become an even more difficult decision, especially for working professionals who have established but demanding jobs. Having the Ph.D. program at IUPUI is essential for students who are employed in Indianapolis to attending the program while keeping their jobs. In return, those students will bring to the school real-world experiences, diverse backgrounds and fresh intellectual perspectives.

Yue Webster
Sr. Research Scientist
Eli Lilly and Company





SOUTH EAST EUROPEAN UNIVERSITY
CONTEMPORARY SCIENCES AND TECHNOLOGIES

March 17th, 2014

TO: Indiana Commission for Higher Education
Indiana University Trustees
Indiana University–Purdue University of Indianapolis Graduate Affairs Committee
Indiana University Bloomington Academic Leadership Committee

RE: PhD in Informatics
School of Informatics & Computing, IUPUI

With this letter, I provide my strongest support to the proposal of a PhD program in Informatics on the IUPUI campus.

I graduated with a PhD in Informatics/Human-Computer Interaction track in August, 2012, with a dissertation titled *Design Foundations for Content-rich Acoustic Interfaces: Investigating Audemes as Referential Non-speech Audio Cues*. Working with faculty on the premiere Indiana urban campus has been invaluable component for my PhD curriculum and research.

A crucial factor to the success of my doctoral research was the collaboration IUPUI had with the Indiana School for the Blind and Visually Impaired in Indianapolis (ISBVI). During a five years period I had conducted more than a dozen experiments with the ISBVI students and staff to build novel acoustic interfaces to enhance the education of the blind and visually impaired students. The excellent results from this research attracted funding from the NSF and Google and an honorable mention certificate from Microsoft for the Imagine Cup'11 competition.

Mexhid Ferati, Ph.D.

Assistant Professor in Contemporary Sciences and Technologies
South East European University
Ilindenska n.335, 1200 Tetovo, Macedonia
email: m.ferati@seeu.edu.mk
web: <http://www.seeu.edu.mk/en/~m.ferati>
office: +389 44 356 187

March 17, 2014

TO: Indiana Commission for Higher Education
Indiana University Trustees
Indiana University–Purdue University of Indianapolis Graduate Affairs Committee
Indiana University Bloomington Academic Leadership Committee

RE: Ph.D. in Informatics
School of Informatics & Computing, IUPUI

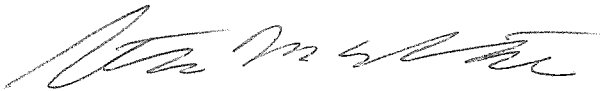
Dear Dr. Palakal,

I am writing this letter to describe my Health Informatics PhD experience at the IUPUI campus. As a full time employee at an Indianapolis-based company, the Informatics program offered at the IUPUI campus was extremely convenient, because the majority of the classes were offered after 5:30PM on week nights. This appreciation was expressed by many of my fellow coworkers who were also pursuing an Informatics degree from Indianapolis campus of Indiana University.

An additional benefit of the Indianapolis campus is the proximity to many medical facilities including: the IU Health campus, Roudebush VA hospital and Regenstrief Institute. Each of these organizations can provide students of the PhD programs with a wide variety of collaboration options for both Health Informatics and BioInformatics candidates. I personally benefitted from a collaboration with the Marion County Health and Hospital Corporation (HHC Corp) that my advisor had established before I joined the PhD program. This collaboration provided my data privacy research with a proprietary dataset as well as an experienced member from HHC Corp who was critical to the completion of my PhD.

I would like to end this letter with my sincerest gratitude for the opportunities that the Indianapolis campus has provided for me, and I hope that this will continue for current and future students.

Best Regards,

A handwritten signature in black ink, appearing to read 'Stuart Morton', written in a cursive style.

Stuart Morton, PhD
Health Informatics
Class of 2012

Luther Consulting LLC.

3/18/2014

TO: Indiana Commission for Higher Education
Indiana University Trustees
Indiana University–Purdue University of Indianapolis Graduate Affairs Committee
Indiana University Bloomington Academic Leadership Committee

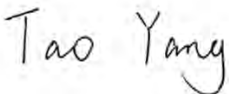
RE: PhD in Informatics
School of Informatics & Computing, IUPUI

With this letter, I provide my strongest support to the proposal of a PhD program in Informatics on the IUPUI campus.

I graduated with a PhD in Informatics/Human-Computer Interaction track in October 2013, with a dissertation titled Brand and Usability in Content-Intensive Websites. Working with faculty on the premiere Indiana urban campus has been invaluable component for my PhD curriculum and research.

The curriculum of the PhD program well equipped me with the knowledge and skills to conduct Human-Computer Interaction research and design. The faculties in our program prepared every class with adequate depth and breadth which allowed me to gain solid understandings of specific research areas while not losing the big picture. With the systematic training from all the classes that I took and the knowledge that I developed, I was able to pick a very interesting but understudied research topic out of the vast complexity of the informatics field to do my PhD dissertation. Most importantly, with the strong and genuine support from my academic advisor and my research committee members, I was able to publish most of the materials in my PhD dissertation in prestigious journals and conferences, even before passing the dissertation defense. In addition, I want to highlight that because my research topic was highly interdisciplinary, I got a great opportunity to work with a marketing professor from the Kelley School of Business for three years, and received a PhD minor in marketing by taking several core MBA classes. This experience greatly enriched my PhD education and strengthened the value of my research outcomes.

Sincerely,



Tao Yang, PhD
User Interface/Experience Intern
Luther Consulting, LLC
10435 Commerce Drive, Suite 140
Carmel, IN 46032

Appendix 6: List of Faculty who will teach in the program

Rachel Applegate, Ph.D., Associate Professor and Department Chair (LIS)
Pauline Baker, Ph.D., Associate Professor
Paul Biondich, M.D., Adjunct Assistant Professor, School of Medicine
David Bodenhammer, Ph.D., Adjunct Professor, School of Liberal Arts
Davide Bolchini, Ph.D., Assistant Professor and Interim Department Chair (HCC)
James Brown, Ph.D., Adjunct Professor, School of Journalism (emeritus)
Thomas Carr, M.D., Adjunct Associate Professor, School of Medicine
Jake Yue Chen, Ph.D., Associate Professor
Hsin-Liang (Oliver) Chen, Ph.D., Associate Professor
Andrea Copeland, Ph.D., Assistant Professor
Joseph Defazio, Ph.D., Associate Professor
Brian Dixon, Ph.D., Assistant Professor
Brad Doebbeling, M.D., M.Sc., Professor of Informatics, Medicine and Biomedical Engineering, and Department Chair (BHI)
Thompson Doman, Ph.D., Adjunct Associate Professor, Eli Lilly & Co.
Ernst Dow, Ph.D., Adjunct Professor, Eli Lilly & Co.
Stephen Downs, M.D., Adjunct Professor, School of Medicine
Jon D. Duke, M.D., Adjunct Professor, School of Medicine
Anthony Faiola, Ph.D., Associate Professor
Valita Fredland, J.D., Adjunct Professor, IU Health
David Haggstrom, M.D., Adjunct Professor
Mark Hill, M.B.A., Adjunct Professor, Collina Ventures, LLC
Sara Hook, M.B.A., J.D., Professor
Edgar Huang, Ph.D., Associate Professor
Marilyn Irwin, Ph.D., Associate Professor
Sarath Chandra Janga, Ph.D., Assistant Professor
Scott Jones, Ph.D., Adjunct Assistant Professor, ChaCha, TuneSat, Precise Path, MOG, Allos Ventures, Gazelle, TechVentures
Neil Kirby, Ph.D., Adjunct Professor, Dow
Xiaoman Li, Ph.D., Adjunct Assistant Professor, School of Medicine
Xiaowen Liu, Ph.D., Assistant Professor

Yunlong Liu, Ph.D., Adjunct Assistant Professor of Informatics, School of Medicine

Burke Mamlin, M.D., Adjunct Assistant Professor, School of Medicine

Xi Niu, Ph.D., Assistant Professor

Marc Overhage, M.D., Adjunct Associate Professor, School of Medicine

Edwin Parks, Ph.D., Adjunct Professor, School of Dentistry

Sandra Petronio, Ph.D., Adjunct Professor, School of Liberal Arts

David Russomanno, Ph.D., Adjunct Professor, School of Engineering and Technology

Katherine Schilling, Ed.D., Associate Professor

Li Shen, Ph.D., Adjunct Professor, School of Medicine

James Stevens, Ph.D., Adjunct Professor, Eli Lilly & Co.

William Tierney, M.D., Adjunct Professor, School of Medicine

Thankam Thyvalikakath, D.D.S., Ph.D., Associate Professor, School of Dentistry,

Tammy Toscos, PhD, Adjunct Assistant Professor, School of Nursing, IPFW

Amy Volda, Ph.D., Assistant Professor

Stephen Volda, Ph.D., Assistant Professor

Mu Wang, Ph.D., Adjunct Assistant Professor, School of Medicine

Yang Wang, Ph.D., Associate Professor, School of Medicine

Huanmei Wu, Ph.D., Associate Professor

Marianne Wokeck, Ph.D., Adjunct Professor, School of Liberal Arts

Jingfeng Xia, Ph.D., Associate Professor

Appendix 7: Sample Curriculum and course sequences for the program

Sample curriculum

The following example will cover a curriculum for bioinformatics, health informatics, and human-computer interaction, for students who enter the program after the master's degree in related areas.

Bioinformatics specialization curriculum

Semester One

B519	(3 credits)	Introduction to Bioinformatics
B536	(3 credits)	Statistical Methods in Bioinformatics
B501	(3 credits)	Introduction to Informatics

Semester Two

B529	(3 credits)	Machine Learning in Bioinformatics
B556	(3 credits)	Biological Database Management
B556	(3 credits)	Translational Bioinformatics Applications

Semester Three

I600	(3 credits)	Professionalism and Pedagogy of Informatics
B616	(3 credits)	Big Data Analytics for Biomedical Informatics
B606	(3 credits)	Algorithms for Bioinformatics

Semester Four

B668	(3 credits)	Advanced Seminar in Bioinformatics
B636	(3 credits)	Next Generation Genomics
B646	(3 credits)	Computational System Biology

Summer

B790	(3 credits)	Informatics Research Rotation (or INFO B699 Independent Study)
------	-------------	--

Semester Five

B590	(3 credits)	Advanced Informatics Research Methods for Biomedical Informatics
B585	(3 credits)	BioHealth Analytics
B890	(1–6 credits)	Thesis Readings and Research (Dissertation)

Semester Six

Elective	(3 credits)	PhD Minor Course 1
Elective	(3 credits)	PhD Minor Course 2
B890	(1–6 credits)	Thesis Readings and Research (Dissertation)

Semester Seven

Elective	(3 credits)	PhD Minor Course 3
B890	1–6 credits)	Thesis Readings and Research (Dissertation)

Semester Eight

Elective	(3 credits)	PhD Minor Course 4
B619	(3 credits)	Structural Bioinformatics
B890	(1–6 credits)	Thesis Readings and Research (Dissertation)

Biomedical and Health Informatics specialization curriculum

Semester One

B501	(3 credits)	Introduction to Informatics
B530	(3 credits)	Foundations of Health Informatics
B535	(3 credits)	Clinical Information Systems
Or I575	(3 credits)	Informatics Research Design

Semester Two

B581	(3 credit)	Health Informatics Standards and Terminology
B642	(3 credits)	Clinical Decision Support Systems
I575	(3 credits)	Informatics Research Design (or INFO B699 Independent Study)
Or B535	(3 credits)	Clinical Information Systems
B668	(1 credit)	Advanced Seminar in BioHealth Informatics

Summer

B790	(3 credits)	Informatics Research Rotation
Or B605	(3 credits)	Social Foundations of Health Informatics (elective)

Semester Three

Grad G660	(3 credits)	Clinical Research Methods
PBHL B651	(3 credits)	Introduction to Biostatistics
Elective	(3 credits)	Ph.D. Minor Course 1
B668	(1 credit)	Advanced Seminar in BioHealth Informatics

Semester Four (spring)

PBHL B652	(3 credits)	Biostatistics for Public Health II
B790	(3 credits)	Informatics Research Design (or INFO B699 Independent Study)
Elective	(3 credits)	Ph.D. Minor Course 1
B668	(1 credit)	Advanced Seminar in BioHealth Informatics

Semester Five

I600	(3 credits)	Professionalism and Pedagogy of Informatics
Elective	(3 credits)	Ph.D. Minor Course 2
Elective	(3 credits)	Ph.D. Minor Course 3
B668	(1 credit)	Advanced Seminar in BioHealth Informatics

Semester Six

	(3 credits)	Elective
B890	(1–6 credits)	Thesis Readings and Research (Dissertation)
B668	(1 credit)	Advanced Seminar in BioHealth Informatics

Summer

B890	(1–6 credits)	Thesis Readings and Research (Dissertation)
------	---------------	---

Semester Seven (fall)

Elective	(3 credits)	Elective course
B890	(1–6 credits)	Thesis Readings and Research (Dissertation)
B668	(1 credit)	Advanced Seminar in BioHealth Informatics

Semester Eight

Elective	(3 credits)	Elective course
B890	(1–6 credits)	Thesis Readings and Research (Dissertation)

Summer

B890	(1–6 credits)	Thesis Readings and Research (Dissertation)
------	---------------	---

Human-Computer Interaction specialization curriculum

Semester 1

H541	(3 Credits)	Interaction Design Practice (HCI 1)
H624	(3 Credits)	Advanced Seminar 1

Semester 2

I575	(3 Credits)	Informatics Research Design
H634	(3 Credits)	HCI Advanced Seminar 2

Summer

H790	(3 Credits)	Informatics Research Rotation
	(3 Credits)	Elective

Semester 3

H563	(3 Credits)	Psychology of HCI
H565	(3 Credits)	Collaborative and Social Computing
<u>Semester 4</u>		
H566	(3 Credits)	Experience Design for Ubiquitous Computing
	(3 Credits)	Research Methods Elective
<u>Summer</u>		
H790	(3 Credits)	Informatics Research Rotation
	(3 Credits)	Elective
H543	(3 Credits)	Interaction Design Methods (Usability and Evaluative Methods)
	(3 Credits)	Research Methods Elective
<u>Semester 5</u>		
H501	(3 Credits)	Introduction to Informatics for HCI
H564	(3 Credits)	Prototyping for Interactive Systems
<u>Summer</u>		
H890	(1-6 Credits)	Thesis Readings and Research (Dissertation)
<u>Semester 6</u>		
H890	(1-6 Credits)	Thesis Readings and Research (Dissertation)
	(3 Credits)	Elective – If needed.
<u>Semester 7</u>		
H890	(1-6 Credits)	Thesis Readings and Research (Dissertation)
	(3 Credits)	Elective – If needed.
<u>Summer</u>		
H890	(1-6 Credits)	Thesis Readings and Research (Dissertation)
	(3 Credits)	Elective – If needed.
<u>Semester 8</u>		
H890	(1-6 Credits)	Thesis Readings and Research (Dissertation)
H600	(3 Credits)	Professionalism and Pedagogy

The proposed curriculum contains the following existing courses:

INFO-I501 Introduction to Informatics (3 credits)
 INFO-H503 Social Impact of Information Technology (3 credits)
 INFO-H504 Social Dimensions of Science Informatics (3 credits)
 INFO-B505 Informatics Project Management (3 credits)
 INFO-B511 Laboratory Information Management Systems for Health and Life Sciences (3 credits)
 INFO-B512 Scientific and Clinical Data Management (3 credits)
 INFO-B519 Introduction to Bioinformatics (3 credits)
 INFO-H524 Seminar in Human-Computer Interaction I (3 credits)
 INFO-B529 Machine Learning for Bioinformatics (3 credits)
 INFO-B530 Foundations of Health Informatics (3 credits)
 INFO-B531 Seminar in Health Informatics (3 credits)
 INFO-B532 Seminar in Bioinformatics (3 credits)
 INFO-H534 Seminar in Human-Computer Interaction II (3 credits)
 INFO-B535 Clinical Information Systems (3 credits)
 INFO-H541 Interaction Design Practice (HCI 1) (3 credits)
 INFO-H543 Interaction Design Methods (Usability and Evaluative Methods) (3 credits)
 INFO-B551 Independent Study in Health Informatics (3 credits)
 INFO-B552 Independent Study in Bioinformatics (3 credits)
 INFO-B553 Independent Study in Chemical Informatics (3 credits)
 INFO-H554 Independent Student in Human-Computer Interaction (3 credits)
 INFO-B556 Biological Database Management (3 credits)

INFO-H561 Meaning and Form in HCI (HCI 2) (3 credits)
INFO-B562 Health Information Exchange (3 credits)
INFO-H563 Psychology of Human-Computer Interaction (3 credits)
INFO-H564 Prototyping for Interactive Systems (3 credits)
INFO-I575 Informatics Research Design (3 credits)
INFO-B576 Structural Approaches to Systems Biology (3 credits)
INFO-B578 Data Analysis for Clinical and Administrative Decision-Making (3 credits)
INFO-B581 Health Informatics Standards and Terminologies (3 credits)
INFO-B582 Health Information Exchange (3 credits)
INFO-B584 Practicum in Health Information Tech (3 credits)
INFO-I590 Topics in Informatics (3 credits)
INFO-I595 Professional Internship (3 credits)
INFO-G599 Thesis Research (0 credits)
INFO-I600 Professionalism and Pedagogy in Informatics (3 credits)
INFO-B601 Introduction to Complex Systems (3 credits)
INFO-H604 Human-Computer Interaction Design Theory (3 credits)
INFO-I609 Advanced Seminar I in Informatics (3 credits)
INFO-H611 Mathematical and Logical Foundations of Informatics (3 credits)
INFO-B619 Structural Bioinformatics (3 credits)
INFO-H624 Advanced Seminar I in Human-Computer Interaction (3 credits)
INFO-B627 Advanced Seminar I in Bioinformatics (3 credits)
INFO-H634 Advanced Seminar II in Human-Computer Interaction (3 credits)
INFO-H635 Advanced Seminar II in Social Informatics (3 credits)
INFO-B637 Advanced Seminar II in Bioinformatics (3 credits)
INFO-H638 Advanced Seminar II in Complex Systems (3 credits)
INFO-B641 Business of Health Informatics (3 credits)
INFO-B642 Clinical Decision Support Systems (3 credits)
INFO-B643 Natural Language Processing and Text Mining (3 credits)
INFO-B646 Computational Systems Biology (3 credits)
INFO-B656 Translational Bioinformatics Applications (3 credits)
INFO-B667 Seminar in Health Informatics I (3 credits)
INFO-B668 Seminar in Health Informatics II (3 credits)
INFO-H680 Human-Computer Interaction Professional Practice I (3 credits)
INFO-H681 Human-Computer Interaction Professional Practice II (3 credits)
INFO-I690 Topics in Informatics (3 credits)
INFO-I698 Research in Informatics (12 credits)
INFO-I699 Independent Study in Informatics (3 credits)
INFO-I709 Advanced Seminar II Informatics (3 credits)
INFO-I790 Informatics Research Rotation (3 credits)
INFO-I798 Professional Practice/Internship (0 credits)
INFO-I890 Thesis Readings and Research (1–12 credits)
INFO-G901 Advanced Research (0–6 credits)

Appendix 8: Letter of support from the Dean of School of Informatics and Computing



SCHOOL OF INFORMATICS AND COMPUTING

INDIANA UNIVERSITY

March 24, 2013

TO: Indiana Commission for Higher Education
Indiana University Board of Trustees
Indiana University–Purdue University Indianapolis Graduate Affairs Committee
Indiana University Academic Leadership Committee

RE: Ph.D. in Informatics
School of Informatics and Computing, IUPUI

I am pleased to strongly endorse the proposal to establish a separate PhD in Informatics at IUPUI. The distinct foci of graduate education in the IUPUI portion of our school, coupled with the strong qualifications of our IUPUI faculty to direct the program, make this the clear and correct step to take at this time.

As background, our school is nation's first School of Informatics. It was founded in 2000 at Indiana University in both Bloomington and Indianapolis and awarded its first degrees in 2002. The Department of Computer Science on the Bloomington campus joined the School in 2005, and then the School merged with the School of Library and Information Science on both campuses in 2013 to become the School of Informatics and Computing. These units, established in 1971 and 1951, respectively, have long-established national and international reputations in computer science, information science, and library science.

The original proposal for the PhD in Informatics was for programs at both the Bloomington and Indianapolis campuses. In the final stages of the approval process, however, Marion County was omitted. Nevertheless, when I arrived as dean in 2007 it was clear that the IUPUI faculty of the IUPUI portion of the school had the qualifications to lead a PhD program. Since that time the IUPUI portion of the School has been administering the PhD program with a high degree of autonomy, and the faculty quality has continued to grow considerably.

The Informatics program at IUPUI has its own unique foci and strengths relative to the Bloomington portion. With tracks in Bioinformatics, Biomedical and Health Informatics (BHI), and Human-Computer Interaction (HCI), the program is geared toward applied, translational scholarship and engagement with the local community. Indianapolis is IU's health and life science campus and home to the Schools of Medicine, Nursing, Pharmacy, Dentistry, Fairbanks School of Public Health, the Center Computational Biology and Bioinformatics and the Regenstrief Institute. Several of the IUPUI Informatics faculty have affiliate or core scientist appointments in the Regenstrief Center for Biomedical Informatics, and the Center for Computational Biology and Bioinformatics. Indianapolis is also home to six national or regional health systems, and many healthcare, biotechnology and health technology companies. The IUPUI Informatics PhD program has seized upon the opportunities that exist in its location.

Informatics research in biomedical and health Informatics at the IUPUI campus focuses on developing and using health information technology (IT) to transform health care delivery. Many of the IUPUI Informatics PhD research projects in bioinformatics and biomedical and

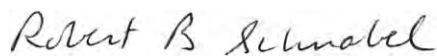
health informatics are closely tied to human diseases, medicine, and public health, and draw heavily upon the university, clinical and corporate medical and healthcare environment in the Indianapolis region. Students have the opportunity to collaborate with researchers and practitioners who are exploring basic, clinical and applied research frontiers throughout the biomedical, clinical and population health and information sciences fields. This research has been extensively supported by funding from the National Institutes of Health.

Human-computer interaction research in the Informatics PhD program at IUPUI has unique strengths in areas that have great societal impact. For example, in making the World Wide Web accessible to blind and visually impaired users, faculty in the School have received funding from the National Science Foundation and Google Faculty Research Awards. Research in accessibility is supported by collaborations with Indianapolis-based institutions, such as the Indiana School for the Blind and Visually Impaired and BOSMA Enterprises. The School at IUPUI also has the nation's first and only Android Science Center and this center engages several doctoral students in research on android science.

The IUPUI Informatics PhD program also allows students to receive research and training exposure that is unique to this Campus. Students have interacted closely with companies including Eli Lilly and Company, Dow Agrosiences, and Exact Target while conducting their PhD research.

The distinctive focus and strong track record of the IUPUI Informatics PhD program demonstrates that the program should be a distinct, autonomous program. I therefore urge your approval of this proposal. I note that just as with our distinct BS and MS programs at the two campuses, there will continue to be active collaboration between the two campus' faculties relative to our Informatics PhD programs.

Sincerely,

A handwritten signature in cursive script that reads "Robert B. Schnabel".

Robert B. Schnabel
Dean

Rachel Applegate

Indiana University, Indianapolis (IUPUI)
School of Informatics and Computing
rapplega@iupui.edu
317-278-2395

12689 Hollice Lane
Fishers, IN
rachel.applegate@comcast.net
317-753-8174

EDUCATION

B.A.	1980	Mary Washington College (now University of Mary Washington), Fredericksburg, Virginia History, Classical Studies Departmental honors: "Religion and the Two Charles"
M.A.	1983	University of North Carolina at Chapel Hill Medieval History Thesis: <i>Criminal and personal injury cases from the Yearbooks of Henry VIII</i>
M.S.L.S.	1986	University of North Carolina at Chapel Hill Library and Information Science Thesis: <i>Political science fiction: An annotated bibliography</i>
Ph.D.	1995	University of Wisconsin at Madison Library and Information Studies Dissertation: <i>User satisfaction with information services: A test of the disconfirmation-satisfaction model with a library OPAC</i>

FACULTY and ADMINISTRATIVE APPOINTMENTS

Indiana University School of Library and Information Science, Indianapolis (2004-2013)
Interim Executive Associate Dean (2012-2013)

Indiana University School of Informatics and Computing (merger; 2013-)

Department of Library and Information Science (from July 2013)

Chair, 2013-

Associate Professor, 2010-

Assistant Professor, 2004-2010

Teaching assignments:

S533 Online Searching

L651, S505: Evaluation of Library Sources and Services

L550, S552: Academic Library Management

L509, S506: Introduction to Research

Independent studies

Faculty service:

Indiana University: University Faculty Council (elected IUPUI representative) 2011-2013

IUPUI: Indianapolis Faculty Council, Executive Committee; 2011-12, 2013-15

Liaison to the Faculty Affairs Committee, Fringe Benefits Committee, Technology Committee

IUPUI Budgetary Advisory Committee, Chair, 2010-2011; Co-chair, 2009-2010

SLIS representative, 2004-present; committee secretary 2004-2005

IUPUI Faculty Council, SLIS representative, 2007-2011

IUPUI Academic Policies and Procedures Committee, 2007-2009

IUPUI Library Committee, 2008-2010

IU SLIS (Bloomington and Indianapolis)

Faculty Planning Committee, 2010-2012

OTHER APPOINTMENTS AND PROFESSIONAL CONSULTANTSHIPS

Professional Consultantships

Higher Learning Commission, North Central Association

Corps of Peer Reviewers, 2004-

Team Chair, 2010-

American Library Association, Committee on Accreditation

External Review Panel Member, 2007-present

American Library Association-Allied Professionals Association: Library Support Staff

Certification Project, external evaluator, 2008-2010.

Evaluator, project member, 2010-2013

Other: Evaluation, data design and/or analysis for Carmel Clay (IN) Public Library (2006, 2008), Hancock County (IN) Public Library (2007, 2008), Hussey-Mayfield Memorial Library (Zionsville, IN, 2008), Putnam County (IN) Public Library (2007), Southeastern Oklahoma State University Library (2008), Eastern Mennonite University (Harrisonburg, VA, 2009), Monroe County Public Library (2011-2013), Public Library Association executive leadership project (2012-2013)

PROFESSIONAL ORGANIZATIONS

American Library Association

Association of College and Research Libraries

ALA Library Research Round Table

Indiana Library Federation

Indiana Library Federation, Professional Development Subcommittee, 2006-2009

Indiana Academic Library Association, secretary-treasurer 2006-2009

Minnesota PALS consortium, Deans/Directors/Coordinators Executive Committee. Elected representative for private (non-MnSCU) college libraries, 1997-2000, 2003-2004; alternate, 2000-2003.

HONORS AND AWARDS

Glenn W. Irwin Experience Excellence Service Award, Indiana University Purdue University Indianapolis, Sept. 2010.

AT&T Fellow (research award, 2006)

Honor societies:

Phi Beta Kappa

Beta Phi Mu (Library Science honorary society)

Phi Alpha Theta (History honorary society)

GRANTS AND FELLOWSHIPS

Indiana University Purdue University Indianapolis: Integrative Department Grant. Exploring the use of electronic portfolios to document student learning outcomes for the MLS program. 2009-2011. **\$26,450** total, award amount \$8,550. Dr. Marilyn Irwin, director; team member year 1, faculty lead, year 2.

Institute of Museum and Library Services, Laura Bush 21st Century Librarian Grant, "Shaping Outcomes Continuing Education." Total Project Budget: **\$817,341**; IMLS award amount: \$396,286. Co-principal investigator, project director (primary author of grant proposal), 2007-2010.

Indiana University SBC (AT&T) Implementing Innovation grant. "Outcomes Evaluation of IUPUI University Library Information Commons," **\$8,180**. Spring-summer 2006. Principal investigator.

PRINT AND ELECTRONIC PUBLICATIONS

Refereed journal articles:

- Schilling, Katherine, and Rachel Applegate. "Best Methods for Evaluating Educational Impact: A Comparison of the Efficacy of Commonly Used Measures of Library Instruction." *Journal of the Medical Library Association* 100.4 (2012): 258-69.
- Applegate, Rachel. "Clarifying Jurisdiction in the Library Workforce: Tasks, Support Staff, and Professional Librarians." *Library Trends* 59.1-2(2010):288-314.
- Applegate, Rachel. "Job Ads, Jobs, and Researchers: Searching for Valid Sources." *Library and Information Science Research* 32(2010): 163-170. doi:10.1016/j.lisr.2009.12.005
- Applegate, Rachel. "Who Benefits? Unionization and Academic Libraries and Librarians." *Library Quarterly* 79.4(Oct. 2009):443-463.
- Applegate, Rachel. "The Library Is for Studying: Student Preferences for Study Space." *Journal of Academic Librarianship* 33.4 (2009): 341-46.
- Applegate, Rachel. "Whose Decline? Which Academic Libraries are 'Deserted' in Terms of Reference Transactions." *Reference and User Services Quarterly* 48.2(Winter 2008):176-189.
- Applegate, Rachel. "Gender Differences in Patrons of a Public Library." *Public Library Quarterly* 27.1(2008):19-31.
- Long, Chris Evin and Rachel Applegate, "Bridging the Gap in Digital Library Continuing Education: How Librarians Who Were Not Born Digital Are Keeping Up." *Library Administration and Management* 22.4(Fall 2008): 172-182. Student (later colleague) co-author. *Mr. Long designed the study and wrote the literature review; I analyzed the data and wrote the methodology; we collaborated on the discussion.*
- Gibbs, Paulette, Catherine Cowser, Jill Scarbrough, and Rachel Applegate. "Public Library Trustees: Characteristics and Educational Preferences: A Research Study." *Public Library Quarterly* 26.1/2(2007):21-43. *Student co-authors; I provided data analysis, written conclusion, and handled all revisions.*
- Applegate, Rachel. "Charting Academic Library Staffing: Data from National Surveys." *College & Research Libraries* 68.1 (2007): 59-68.
- Applegate, Rachel. "Student Learning Outcomes Assessment and LIS Program Presentations." *Journal of Education for Library and Information Science* 47.4(2006):324-336.
- Applegate, Rachel. "Faculty Information Assignments: A Longitudinal Examination of Variations in Survey Results." *Journal of Academic Librarianship* 32.4(July 2006):355-363.
- Applegate, Rachel. "Deconstructing Faculty Status: Research and Assumptions." *Journal of Academic Librarianship* 19(3, July 1993):158-64.
- Applegate, Rachel. "Models of User Satisfaction: Understanding False Positives." *RQ* 32(4, Summer 1993):525-39. <http://hdl.handle.net/1805/1883>

Invited journal article:

- Applegate, Rachel. "Resumes and Cover Letters for Library Employment." *Indiana Libraries* 28.2(2009):28-35.

Conference proceedings (peer-reviewed):

- Applegate, Rachel. "Designing Comprehensive Assessment Plans: The Big Picture Leads to the Little Picture." *Pushing the Edge: Explore, Engage, Extend. Proceedings of the Fourteenth National Conference of the Association of College and Research Libraries March 12-15, 2009, Seattle, Washington.* Chicago: Association of College and Research Libraries, 2009. 165-171. <http://hdl.handle.net/1805/1877>
- Applegate, Rachel. "Academic Library Support Staff Competencies: What Should Support Staff Know and be Able to Do?" *Pushing the Edge: Explore, Engage, Extend. Proceedings of*

- the Fourteenth National Conference of the Association of College and Research Libraries March 12-15, 2009, Seattle, Washington. Chicago: Association of College and Research Libraries, 2009. 282-290. <http://hdl.handle.net/1805/1878>
- Applegate, Rachel. "What Should 'Librarians' Know?" Association for Library and Information Science Education Annual Conference, Jan. 2009. Presentation plus inclusion in electronic conference proceedings: <http://blogs.iis.syr.edu/alise/>
- Schilling, Katherine, and Rachel Applegate. "Evaluating Library Instruction: Measures for Assessing Educational Quality and Impact." Sailing into the Future: Charting Our Destiny. Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries, March 29-April 1, 2007, Baltimore, Maryland. Chicago: Association of College and Research Libraries, 2007. 206-14. Also in-person and webinar presentations. *Dr. Schilling had the original data; I provided a secondary analysis; we both conducted the literature review and collaborated on the discussion.*
- Applegate, Rachel. "Build It and What? Measuring the Implementation and Outcomes of an Information Commons." Sailing into the Future: Charting Our Destiny. Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries, March 29-April 1, 2007, Baltimore, Maryland. Chicago: Association of College and Research Libraries, 2007. 167-73. <http://hdl.handle.net/1805/1880> Also presentation.
- Applegate, Rachel. "Shaping Outcomes: A Collaborative Museum-Library Project for Outcomes-Based Professional Development." Sailing into the Future: Charting Our Destiny. Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries, March 29-April 1, 2007, Baltimore, Maryland. Chicago: Association of College and Research Libraries, 2007. 22-25. <http://hdl.handle.net/1805/1879> Also presentation.
- Applegate, Rachel, and Dolores Hoyt. "Mining the Library for Program-Specific Data." A Collection of Papers on Self-Study and Institutional Improvement, 2007: Volume 3: Leading for the Common Good: Assessing and Improving Student Learning. Chicago: Higher Learning Commission, 2007. 124-25. Also presentation.
- Applegate, Rachel. "Evaluating Libraries and Other Support Areas: Accomplishing Your Institution's Purposes." A Collection of Papers on Self-Study and Institutional Improvement, 2003: Volume 2: Organizational Effectiveness and Future Directions. Chicago: The Higher Learning Commission; 108th Annual Meeting, April 13-16, 2003. Also presentation.

Book:

- Managing the Small Academic Library.* Libraries Unlimited, 2010.
- Practical Evaluation Techniques for Librarians,* Libraries Unlimited, 2013.

Book chapters:

- Applegate, Rachel and Marilyn Irwin. "Learning Outcomes Assessment via Electronic Portfolios." Advances in Librarianship: Contexts for Assessment and Outcome Evaluation in Librarianship, edited Anne Woodward; pp. 135-150. Vol. 35. Emerald, 2012
- Applegate, Rachel and David Lewis. "Renewing the Tech-Forward Library: Information Commons Development at the University Library of Indiana University Purdue University Indianapolis." In *Our New Public, a Changing Clientele: Bewildering Issues or New Challenges for Managing Libraries?*, edited by James R. Kennedy, Lisa Vardaman and Gerard McCabe, 225-40. Westport, Conn.: Libraries Unlimited, 2008.
- Applegate, Rachel. "Models of Satisfaction," Vol. 60, pp. 199-227 in Encyclopedia of Library and Information Science, Ed. Allan Kent. New York: Marcel Dekker, 1997.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. DO NOT EXCEED FOUR PAGES.

NAME Davide Bolchini		POSITION TITLE Assistant Professor (tenure-track) in Human-Computer Interaction	
eRA COMMONS USER NAME (credential, e.g., agency login) dbolchin			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Lugano, Switzerland	Licentiate	2000	Communication Science, concentration in Communication Technologies
University of Lugano, Switzerland	Ph.D.	2003	Communication Science, concentration in Communication Technologies

A. Personal Statement. With a background in communication sciences, Dr. Bolchini joined the School of Informatics at IUPUI in 2008 with a strong research background in the area of web and ubiquitous computing, data-intensive interactive application design, as well as usability evaluation for human-computer interaction (HCI). Dr. Bolchini's research found applicability of his HCI expertise in various domains including ubiquitous computing and web navigation modelling. In the proposed project, Dr. Bolchini will lead the efforts of developing ANFORA to improve its user experience design and technology, to make it a commercially viable product.

B. Positions and Honors.

2000-2002	Graduate Teaching and Research Assistant, University of Lugano, Faculty of Communication Sciences, Technology-Enhanced Communication Laboratory, CH.
2003	Visiting Scholar, University of Toronto (Canada), Dept. of Computer Science.
2003	Distinguished Visiting Scholar, North Carolina State University, College of Computing.
2003-2006	Adjunct Lecturer and Researcher, Politecnico di Milano, Faculty of Comp. Engineering, Italy.
2004-2007	Post-Doctoral Teaching Assistant, Lecturer and Senior Researcher, University of Lugano, Faculty of Communication Sciences, CH.
2007-2008	Senior Visiting Research Fellow, University College London, Dept. of Computer Science, UK.
2008-present	Assistant Professor (tenure-track) in Human-Computer Interaction, Indiana University, School of Informatics at IUPUI.
2012-present	Director, Human-Computer Interaction Program, Indiana University, School of Informatics at IUPUI. The HCI program includes a MS and PhD program with approximately 85 students enrolled, as well as an undergraduate and a graduate certificate.

Selected Professional Service (since 2011)

Reviewer for Federal Agencies:

2011—present US National Science Foundation (NSF), Grant Panelist and Reviewer.

Program Chair for Peer-reviewed International Conferences and Symposia:

2011 Program Chair for the 13th IEEE International Symposium on Web Systems Evolution Symposium (WSE 2011), Williamsburg, VA, September 2011.

2011 Program Chair of the PhD Workshop at the ENTER International Conference on ICT for Travel and Tourism, Innsbruck, Austria, January 2011.

Programme Committees for International Conferences:

2011 Programme Committee of Second International Workshop on “The Web and Requirements Engineering (WeRE)”, held in conjunction with the 11th International

Invited Peer Reviewer positions for International Journals and Conferences:

2011—present CHI – ACM International Conference on Human Factors in Computing.

2011—present INTERACT Conference

2011—present *ACM Transactions on Human-Computer Interaction* (TOCHI)

2011—present *Interacting with Computers*

C. Selected peer-reviewed publications most relevant to the project (out of over 90 since 1999)

Rohani, R., Palilonis, J., Bolchini, D., Mobile Web Browsing with Aural Flows: an Exploratory Study, accepted at the International Journal of Human-Computer Interaction (IJHCI) (February 2013). DOI: 10.1080/10447318.2013.773875

Ferati, M., Pfaff, M., Mannheimer, S., Bolchini, D., Audemes at work: Investigating features of non-speech sounds to maximize content recognition, International Journal of Human-Computer Studies (IJHCS), 70 (12), 2012, 936–966.

Yang, T., Ferati, M., He, L., Bolchini, D., Navigating by Index and Guided Tour for Fact Finding, In Proceedings of the 30th ACM international conference on Design of communication (SIGDOC '12). ACM, New York, NY, USA, 181-190.

Rohani, R., Ferati, M., Yang, T., Bolchini, D., Back Navigation Shortcuts for Screen Reader Users, Proceedings of the 14th international ACM SIGACCESS conference on Computers and accessibility (ASSETS '12). ACM, New York, NY, USA, 1-8.

Yang, T., Ferati, M., Liu, Y., Rohani, R., Bolchini, D., Aural Browsing On-The-Go: Listening-based Back Navigation in Large Web Architectures, in Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems (CHI '12). ACM, New York, NY, USA, 277-286.

Pandurino, A., Mainetti, L., Paiano, R., Bolchini, D., Dialogue-based Modeling of Rich Internet Applications: The Rich-IDM Approach, International Journal of Web Information Systems, International Journal of Web Information Systems, 8 (2) 2012, 157 - 180.

Yang, T., Linder, J., Bolchini, D., DEEP: Design-oriented Evaluation of Perceived Usability, International Journal of Human-Computer Interaction (IJHCI), 28 (5) 2012, 308-346.

Pandurino, A., Bolchini, D., Mainetti, L. Paiano, R., Streamlining Complexity: Conceptual Page Re-modeling for Rich Internet Applications, 2nd Workshop on The Web and Requirements Engineering (WeRE'11) in ICWE'11 Proceedings of the 11th International Conference on Current Trends in Web Engineering, LNCS Springer 2011, 289-301.

Rohani Gahari, R., Bolchini, D., ANFORA: Investigating Aural Navigation Flows on Rich Architectures, in Proc. of the 13th IEEE International Symposium on Web Systems Evolution (WSE 2011), Williamsburg (VA), USA, IEEE Press, September 2011, 27-32.

Ferati, M., Mannheimer, S., Bolchini, D., Usability Evaluation of Acoustic Interfaces for the Blind, in Proc. of the 29th ACM International Conference on Design of Communication (SIGDOC), Pisa, Italy, 2011, 9-16.

Spagnolo, L., Bolchini, D., Paolini, P., Di Blas, N., Beyond Findability: Search-Enhanced Information Architecture for Content-Intensive RIAs, Journal of Information Architecture, 2 (1) 2010, 19-36.

Pandurino A., Bolchini D., Mainetti L., Paiano R., Rich-IDM: Extending IDM to Model Rich Internet Applications, in ACM Proceedings of 12th International Conference on Information Integration and Web Based Applications & Services (iiWAS2010), 8-10 November, 2010, Paris, France, 145-152.

Selected Exhibited Posters (non refereed) – Outreach and Dissemination of ANFORA Concept

Rohani Ghahari, R., George-Palilonis, J., Moon, S., Archibald, C., Kaser, L., Bolchini, D., Eyes-free Web Browsing with Linkless Navigation, IUPUI Innovation to Enterprise Showcase & Forum, IUPUI Campus Center, Indianapolis (IN), November 28, 2012.

Rohani Ghahari, R., George-Palilonis, J., Bolchini, D., ANFORA – Aural Navigation Flows on Rich Architectures, poster presented at the 2012 Women in Technology, IUPUI Campus Center, Indianapolis, April 11, 2012.

Rohani Ghahari, R., George-Palilonis, J., Bolchini, D., ANFORA – Aural Navigation Flows on Rich Architectures, poster presented at the 2012 IUPUI Research Day, Student Showcase, IUPUI Campus Center, Indianapolis (IN), April 13, 2012.

Bolchini, D., Ferati, M., Rohani Ghahari, R., Yang, T., Navigating the Aural Web, poster presented at the 2012 IUPUI Research Day, Faculty and Community Showcase, IUPUI Campus Center, Indianapolis (IN), April 13, 2012.

Bolchini, D., Ferati, M., Liu, Y., Luebke, J., Rohani Ghahari, R., Yang, T., Navigating the Aural Web, poster presented at the 2011 World Usability Day, organized by the Indiana Chapter of the Usability Professionals' Association (UPA) Indianapolis (IN), November 10, 2011.

Bolchini, D., Rohani Ghahari, R., George-Palilonis, J., ANFORA – Aural Navigation Flows on Rich Architectures, poster presented at the 2011 World Usability Day, organized by the Indiana Chapter of the Usability Professionals' Association (UPA) Indianapolis (IN), November 10, 2011.

Bolchini, D., Rohani Ghahari, R., George-Palilonis, J., ANFORA – Aural Navigation Flows on Rich Architectures, invited poster presented at the 2011 IUPUI TRIP (Translating Research Into Practice) Showcase, Indianapolis, IUPUI Campus Center, September 12, 2011.

Patent Filed

Aural Navigation of Information Rich Visual Interfaces, IURTC No.13006, US Provisional Patent Application No. 61/699,748, Date filed: 09/11/2012. Co-inventors: Davide Bolchini (primary contact) and Romisa Rohani (PhD student).

D. Research Support (since 2007)

Awarded Grants as Principal Investigator (4):

1. Title: HCC: Small: Navigating the Aural Web
Source: National Science Foundation Award #1018054, Human-Centered Computing Program
Principal Investigator (PI): Davide Bolchini

Total award amount: \$ 424'311

Duration: 08/01/2010 — 07/31/2013

<http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=1018054>

2. Title: Research Experiences for Undergraduates (REU) Supplement on funded grant #1018054

Source: National Science Foundation, Human-Centered Computing Program

Principal Investigator (PI): Davide Bolchini

Total award amount: \$ 16'000

Duration: 04/01/2012 — 07/31/2012

3. Title: Research Experiences for Undergraduates (REU) Supplement on funded grant #1018054

Source: National Science Foundation, Human-Centered Computing Program

Principal Investigator (PI): Davide Bolchini

Total award amount: \$ 16'000

Duration: 04/01/2011 — 07/31/2011

4. Title: Usability Requirements and Design Patterns for Large Information-intensive Applications

Source: Swiss National Science Foundation Fellowship for Advanced Researchers, SNSF 117456.

Principal Investigator (PI): Davide Bolchini

Amount awarded: CHF 85'000

Duration: 09/01/07 — 08/31/08

<http://www.projectdb.snf.ch/WebForms/ProjectDetail.aspx?ID=3dd8386f-db0f-43b5-af48-4e07301a1410>

Awarded Grants as Co-PI and Co-Investigator (2):

4. Title: ISE Pathways: Audemes, Metaphors and Aural Games: A Pathways Project to Make STEM

Engaging for the Blind and Visually Impaired

Source: National Science Foundation, Award # 1114597, Informal Science Education Program

Principal Investigator (PI): Steve Mannheimer

Co-PI (s): Davide Bolchini and Mathew Palakal

Amount granted: \$ 249'999

Duration: 08/15/2011 — 07/31/2013

5. Title: Support Grant for Purchase of BioPac Psychophysiological Measuring Equipment

Source: Indiana University Purdue University Indianapolis, Research Support Funding Grant

Principal Investigator (PI): Mark Pfaff

Co-PI (s): Davide Bolchini (et al.)

Amount granted: \$ 13'905

Duration: equipment acquisition from 01/06/10

6. Title: Anti-Smoking Video Game for Pre-adolescent Girls

Sub-award: Usability Evaluation of Health Games

Source: US National Institute of Health (NIH), 2R44CA112875-02A2 SBIR NIH Sub-award

Principal Investigator (PI): Anna McDaniel

Co-Investigator(s): Davide Bolchini (et al.)

Amount granted: \$ 1,046,038 – Sub-award amount: \$ 13'318

Sub-award Duration: 08/01/09 — 07/31/10

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Chen, Jake Yue	POSITION TITLE Associate Professor of Informatics		
eRA COMMONS USER NAME JAKECHEN	Director, Indiana Center of Systems Biology and Personalized Medicine		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Peking University, Beijing, China	B.S.	1995	Biochemistry and Molecular Biology
University of Minnesota, Minneapolis, MN	M.S.	1997	Computer Science and Engineering
University of Minnesota, Minneapolis, MN	Ph.D.	2001	Computer Science and Engineering

A. Personal Statement

Dr. Chen has more than 18 years of practical research and development experience in bioinformatics, genomics, proteomics, and systems biology. This includes nearly 6 years spent in the biotech and pharmaceutical industry prior to joining as a founding bioinformatics faculty member at the joint campus of Indiana University and Purdue University (IUPUI). He currently serves on the editorial boards of BMC Systems Biology, Personalized Medicine, Network Biology, and IEEE Journal of Biomedical Informatics and Health Informatics. He is the local chair of the IEEE Engineering in Biology and Medicine Society (central Indiana chapter), and senior members of both IEEE and ACM.

Supported by the School of Informatics and IUPUI, CSBPM that Dr. Chen founded back in 2007 has been hosting bioinformatics, computer science, applied mathematics, biology, chemistry, and medical students and staffs to perform translational biomedical research computing projects. The center has been an excellent and unique hub that links biomedical scientists, genome scientists, computer scientists, and clinical researchers, on a central theme of informatics-driven translational medicine. It has been highly recognized as a pioneer institution that bridges the gap between systems biology innovations and personalized medicine applications.

As an investigator, Dr. Chen has been experienced in translational bioinformatics research in both the industry and Academia. His training is interdisciplinary, with a BS degree in biochemistry from Peking University and MS/PhD degrees in computer science from the University of Minnesota. In 1998-2003, he took several technical and management positions in the biopharmaceutical industry and gained progressive experience in both technical and management positions. His work at Affymetrix, Inc., Santa Clara, California impacted tens of thousands of life science users as he designed GeneChips products. He led large multi-million dollar scientific projects to map the human proteome at Myriad Proteomics, Inc., Salt Lake City, Utah. His current primary research interest is in developing computational systems biology databases and simulation models that can facilitate predictive and personalized medicine. He has published more than 100 peer-reviewed research papers and filed several key patents in systems pharmacology—through IU or his startup company Medeolinx founded in 2006. In 2011, he was selected by the National Academy to serve on an Institute of Medicine committee that advises FDA on food and drug regulatory systems harmonization matters in developing countries. He was cited by HealthTechTopia as one of the “17 Informatics Experts Worth Listening To” in 2011. In 2012, he received a “Cancer Systems Biology Grand Challenge Award” by Innocentive.com, for successfully predicting a cancer drug’s molecular mechanisms of action among the site’s 250,000 community of scientists worldwide.

B. Positions and Honors

Positions and Employment History

2012- Founding (Visiting) Director, Institute of Biopharmaceutical Informatics and Technologies, Wenzhou Medical University, Zhejiang Province, China

2010- Associate Professor of Informatics, Indiana University School of Informatics, Indianapolis, IN

2010- Associate Professor of Computer Science (joint appointment), Department of Computer and Information Science, Purdue University School of Science, Indianapolis, IN

2007- Director, Indiana Center for Systems Biology and Personalized Medicine, Indianapolis, IN

2006- Scientific co-founder, Predictive Physiology and Medicine, Bloomington, IN

2006- Member, IU Center for Computational Biology and Bioinformatics, Indianapolis, IN

2006- Member, IUPUI Center for Biocomputing, Indianapolis, IN

2004-2010 Assistant Professor of Informatics, Indiana University School of Informatics, Indianapolis, IN

2004- Member, Indiana University (IU) Melvin and Bren Simon Cancer Center, Indianapolis, IN

2002-2003 Head of Computational Proteomics, Myriad Proteomics (renamed to “Prolexys Pharmaceuticals”), Inc., Salt Lake City, UT

1998-2002 Bioinformatics Computer Scientist, Affymetrix, Inc., Santa Clara, CA

1996-1998 Research Assistant, Computational Biology Center, University of Minnesota, Minneapolis, MN

1995-1996 Biochemistry Research Fellow, University of Minnesota Medical School, Minneapolis, MN

Professional Committees and Review Panels

2013- Associate Editor, IEEE Journal of Biomedical Informatics and Health Informatics

2011- Editorial Board, Personalized Medicine

2011- Editorial Board, Network Biology

2011 Committee on Strengthening Core Elements of Regulatory Systems in Developing Countries, Institute of Medicine, the National Academies

2009- Associate Editor, BMC Systems Biology

2009 Scientific Advisory Board, HIV Neurobehavioral Research Center (HNRC) at UC San Diego

2008-09 Indiana University Cross-campus Information Technology Strategic Planning Committee

2007- Editorial Board, International Journal of Bioinformatics Research and Applications

2007- Advisory Committee, Susan Coleman Breast Tissue Bank at Indiana University Cancer Center

2006- Advisory Committee, Translational Genomics Core, Indiana University Simon Cancer Center

2006- Advisory Committee, Indiana University Center for Environmental Health

2005- Chair, IEEE Central Indiana Chapter Society of Engineering in Biology and Medicine, USA

2004- I have been serving regularly as a panelist for National Institute of Health, Department of Energy, Department of Defense, National Science Foundation, Alzheimer’s Association, and Texas Norman Hackerman Advanced Research Funding Program, and Research Grants Council (RGC) of Hong Kong.

Selected Bioinformatics/Systems Biology Meeting Organizations

- *Co-chair*, International Workshop on Data Mining in Bioinformatics (BIOKDD ’06-13) at ACM International Conference on Knowledge Discovery and Data Mining.
- *Program Chair*, IEEE International Conference on Electro and Information Technology (EIT2012), Indianapolis, IN
- *Workshop Chair*, IEEE International Conference on Bioinformatics and Biomedicine (BIBM2011), Atlanta, GA
- *Special Track Chair*, 23rd IEEE International Symposium on Computer-Based Medical Systems (CBMS2010), Perth, Australia
- *Co-chair*, Data Mining for Biomarker Discovery Workshop at the IEEE International Conference on Bioinformatics & Biomedicine (BIBM ’09-11).
- *Track Co-chair*, Ontologies for Biomedical Systems, CBMS ’09, Albuquerque, NM.
- *Track Chair*, Translational Bioinformatics: Bridging Bioinformatics and Biomedical Informatics in Translational Medicine Track at the InnovationWell ’09 Annual Meeting, Philadelphia, PA.
- *Chair*, “Bioinformatics and Diseases” Area, BIBM ’08, Philadelphia, PA
- *Chair*, Mini-symposium on Biomarker Discovery and Systems Biology, IUPUI, Indianapolis, IN.
- *Co-chair*, eBioinformatics Workshop at Fourth IEEE Conference on e-science 2008, Indianapolis, IN.
- *Track Co-Chair*, Ontologies for Biomedical Systems at CBMS ’08, Finland

Selected Honors and Awards

2013	Finalist, the “Technology Educator of the Year” MIRA Award, IN
2012	Innocentive.com Grand Challenge Award Winner, on “Cancer Drug Systems Biology”
2012	Outstanding Academic Talent, Zhejiang Province, China
2011	Scientific Advisory Board Member, ProteinLounge, Inc., San Diego, CA
2011	“17 Informatics Experts Worth Listening to”, HealthTechTopia
2010-13	Finalists, in Healthcare IT category, Indiana MIRA Award, IN
2010,13	Cambridge Health Institute’s Distinguished Speaker List
2009	Senior Member, Association of Computing Machinery (ACM)
2008	Dragon Star in Bioinformatics Lectureship Award, China National Science Foundation, China
2008	Chancellor’s Prestigious External Awards Recognition (PEAR), IUPUI
2008	Translational Research into Practice (TRIP) Scholar Recognition, IUPUI
2007	Bioinformatics Platform Dissemination Award, Canary Foundation
2004	Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
1999, 2000	Project Achievement Awards, Affymetrix, Inc., San Jose, CA

C. Selected recent journal publications

(I have published more than 100 peer-reviewed articles in journals and conference proceedings)

1. **Jake Y. Chen**, M Piquette-Miller, and Barry P. Smith (2013) Network Medicine: Finding the Links to Personalized Therapy. *Clinical Pharmacology & Therapeutics*, Vol. 94, No. 6, pp613–616.
2. Huajun Chen, Tong Yu, and **Jake Y. Chen*** (2013) Semantic Web Meets Integrative Biology: A Survey. *Briefings in Bioinformatics*, Vol. 14, No. 1, pp. 109-125.
3. Liang-Chin Huang, Xiaogang Wu, and **Jake Y. Chen*** (2013) Predicting Adverse Drug Reactions by Integrating Protein Interaction Networks with Drug Structures. *Proteomics*, Vol. 13, No. 2, pp. 313-324.
4. Hui Huang, Xiaogang Wu, Madhankumar Sonachalam, Sammed N. Mandape, Ragini Pandey, Karl F. MacDorman, Ping Wan*, **Jake Y. Chen*** (2012) PAGED: A Pathway and Gene-set Enrichment Database to Enable Molecular Phenotype Discoveries. *BMC Bioinformatics*, Vol. 13, Supplement 15, S2.
5. Hui Huang, Xiaogang Wu, Ragini Pandey, Jiao Li, Guoling Zhao, Sara Ibrahim, **Jake Y. Chen*** (2012) C2Maps: A Network Pharmacology Database with Comprehensive Disease-Gene-Drug Connectivity Relationships. *BMC Genomics*, Vol. 13, Supplement 6, S17.
6. Jiliang Li, Fan Zhang, and **Jake Y. Chen*** (2011) An Integrated Proteomics Analysis of Bone Tissues in Response to Mechanical Stimulation. *BMC Systems Biology*, Vol. 5, Suppl. 3, S7.
7. Xiaogang Wu, Hui Huang, Madhankumar Sonachalam, Sina Reinhard, Jeffrey Shen, Ragini Pandey, and **Jake Y. Chen*** (2011) Reordering Based Integrative Expression Profiling for Microarray Classification. *BMC Bioinformatics*, Vol. 13, Suppl. 2, S1.
8. Sudhir Chowbina, Youping Deng, Junmei Ai, Xiaogang Wu, Xin Guan, Mitchell S. Wilbanks, Barbara Lynn Escalon, Sharon A. Meyer, Edward J. Perkins, and **Jake Y. Chen*** (2010) Dose Responsive Pathway-Connected Networks in Rat Liver Regulated by 2,4DNT. *BMC Genomics*, Vol. 11, Suppl. 3, S4.
9. Fan Zhang and **Jake Y. Chen*** (2010) A Systems Biology Approach to Discovering and Validating Breast Cancer Protein Biomarkers in Human Plasma. *BMC Genomics*, Vol. 11, Suppl. 2, S12
10. Mingyi Wang and **Jake Y. Chen*** (2010) A GMM-IG Framework for Selecting Genes as Expression Panel Biomarkers. *Artificial Intelligence in Medicine*, Vol. 48, No. 2-3, pp.75-82.
11. Qian You, Shiaofen Fang, and **Jake Y. Chen*** (2010) GeneTerrain: Visual Exploration of Differential Gene Expression Profiles Organized in Native Biomolecular Interaction Networks. *Information Visualization*, Vol. 9, No. 1, pp.1-12.
12. Jiao Li, Xiaoyan Zhu, and **Jake Y. Chen*** (2009) Building Disease-specific Drug-Protein Connectivity Maps from Molecular Interaction Networks and PubMed Abstracts. *PLoS Computational Biology*, 5(7): e1000450.

Books

1. **Jake Y. Chen** and Stefano Lonardi, ed. (2009) *Biological Data Mining*. 656 pages. Published by Chapman & Hall/CRC, USA. ISBN: 978-1420086843.
2. **Jake Y. Chen** and Amandeep Sidhu, ed. (2007) *Biological Database Modeling*. 224 pages. Published by Artech House, Boston, MA, USA. ISBN: 978-1596932586.

Hsin-liang (Oliver) Chen
School of Informatics and Computing
Department of Library and Information Science
Indiana University
755 West Michigan Street, UL 3100N
Indianapolis, Indiana 46202-5195
chenhsin@iupui.edu
<http://pages.iu.edu/~chenhsin>
317-278-2388 (phone)
317-278-1807 (fax)

EDUCATION

UNIVERSITY OF PITTSBURGH

Ph.D. Library and Information Science, 12/1999

Dissertation: "An Analysis of Image Queries and Image Retrieval Tasks in the Field of Art History"

NEW YORK UNIVERSITY

M.A. Educational Communication and Technology, 09/1995

Thesis: "A Computer-based Slide Catalogue"

FU-JEN CATHOLIC UNIVERSITY, TAIWAN, R.O.C.

B.A. Library Science, 06/1992

Dean's List

TAIPEI MUNICIPAL TEACHERS COLLEGE, TAIWAN, R.O.C.

Diploma, Elementary Education, 06/1985

Dean's List

RESEARCH AND TEACHING

Research Areas

Digital Media Design and Management
Digital Libraries and Museums
Information Systems and Social Impact
Human Computer Interaction
Instructional Technology
Information Seeking
User Studies

Courses Taught

Indiana University

Audio and Visual Sources
Digital Libraries
Human Computer Interaction
Library Systems
Organization and Representation of Knowledge and Information
Systems Analysis and Design

University of Missouri

Developing and Managing Media Collections
Organization of Information
Seminar in Digital Libraries

University of Texas
Digital Media Design I & II
Human Information Interaction
Understanding and Serving Users

AWARDS

Trustees Teaching Award, Indiana University, 2012

The 2008 Highly Commended Award, Emerald Literati Network, U.K. (A socio-technical perspective of museum practitioners' image-using behaviors. *The Electronic Library*, 25(1), 18-35)

Beta Phi Mu, International Honor Society for Library and Information Science, 1999

Jay Daily Award, School of Information Sciences Alumni Society, University of Pittsburgh, 1998

PUBLICATIONS

Monograph (Refereed)

Rice-Lively, M. L., & Chen, H. (2006). *Scenarios and Information Design: A User-centered Practical Guide*. Oxford, England: Chandos Publishing

Book Chapters (Refereed)

Chen, H., & Moeller, R. B. (2014). A new research agenda on mass communication, social informatics and children's literature in US: Implications for researchers in Asia-Oceania region. In T. Du, Q. Zhu & A. Koronois (Eds.). *Library and Information Science Research in Asia-Oceania: Theory and Practice*, pp. 165-185. Hershey, PA: IGI Global.

Williams, J. P., & Chen, H. (2008). Computer-mediated communication and multi-modal instruction in higher education. In S. Kelsey & K. St. Amant, (Eds.). *Handbook of Research on Computer Mediated Communication*, pp. 128-145, Hershey, PA: Information Science Reference

Roy, L., Chen, H., Cherian, A., & Tuiono, T. (2008). The relationship of technology, culture and demography. In J. Voogt, & G. Knezek (Eds.). *International Handbook of Information Technology in Primary and Secondary Education*, pp. 819-831, New York: Springer

Encyclopedia Entries (Invited/Refereed)

Chen, H. (2010). Instructional technology. *Encyclopedia of Library and Information Sciences*, 3rd ed. 2797-2803. Boca Raton, FL: Taylor & Francis

Chen, H. (2003). Instructional technology. *Encyclopedia of Library and Information Science*, 2nd ed. 1373-1378. New York: Marcel Dekker

Refereed/Scholarly Papers

Albee, B., & Chen, H. (in press). Public library staff's perceived value and satisfaction of an open source library system. *The Electronic Library*, 32(3)

Niu, X., Zhang, T., & Chen, H. (forthcoming). Study of user search activities with two discovery tools at an academic library. *International Journal of Human-Computer Interaction*.

Lacy, M., & Chen, H. (2013). Rethinking library instruction: Using learning outcome based design to teach online search strategies. *Journal of Information Literacy*, 7(2), 126-148

GRANTS

November 2013-October 2014

Mentor, Mentee, Dr. Xi Niu (School of Informatics and Computing)

Enhanced Mentoring Program with Opportunities for Ways to Excel in Research (EMPOWER) Grant
Indiana University, \$6,000

September, 2012

Overseas Conference Grant

Understanding situational factors of smartphone use: A pilot study of user diaries. ISIC2012: the Information Behaviour Conference, Keio University, Tokyo, Japan (with David Thompson).

Indiana University, \$1,000.

January-December, 2010

CO-PI, Impact of the Evergreen Indiana Project on Public Libraries and Library Patrons (with Barbara Albee)

Library Service and Technology Act Grant

Indiana State Library, \$28,189

January-December, 2010

CO-PI, Impact of Open Source Library Automation System on Public Library Users (with Barbara Albee)

OCLC/ALISE Library and Information Science Research Grant

OCLC, \$14,250

January-May, 2009

CO-PI, Evaluating the Utility of Metadata Elements of a Photojournalism Image Database: A Web Analytics Approach (with Dr. Thomas Kochtanek)

Research Council, Office of Research

University of Missouri, \$4,667

January-July, 2005

CO-PI, Video Exploration of the Soil Animal World (with Drs. R. Richardson and P. Richardson)

The Center for Instructional Technologies

University of Texas at Austin, \$1,000

2004-2005

PI, Re-positioning Art and History Museums in the Virtual World

Alumni Teaching Fellowship

School of Information, \$3,000

2003-2004

PI, The Digital Video Library

Temple Teaching Fellowship

School of Information, \$4,000

2002-2003

PI, The Challenge of the Chinese Heritage: Digitizing and Managing Museum Collections

Faculty Development Program Summer Research Assignment, University of Texas-Austin, \$11,818

Temple Teaching Fellowship, School of Information, \$2,500

Research Associate
Russian History Online, (PI: David B. Gracy II, School of Information)
Carnegie Corp., \$50,000

EXPERIENCE

ASSOCIATE PROFESSOR 07/11-present

ASSISTANT PROFESSOR 06/09-06/11

School of Library and Information Science, Indiana University

* teaching System Evaluation and Design, Human-Computer Interaction, AV Sources and Digital Libraries courses

ASSISTANT PROFESSOR 08/07-05/09

School of Information and Learning Technologies, University of Missouri at Columbia

* taught Organization of Information (master's core course) and Digital Libraries, Information Visualization, Developing and Managing Media Collection courses

ASSISTANT PROFESSOR 09/00-05/07

School of Information, The University of Texas at Austin

* taught Understanding and Serving Users (master's core course), Digital Media Design I and II, Human Information Interaction, and Developing and Organizing Media Collections courses

ASSISTANT PROFESSOR 09/99-08/00

School of Library and Information Science, University of Wisconsin-Milwaukee

* taught instructional technology, information seeking and multimedia production courses

STUDENT ADVISING

Indiana University

Masters students' independent studies:

2013

- Hedlund, O. *Digital Libraries for American Women's History*

2012

- Wilhelm-South, M. *The Butler Collegian Archive* (a digital library project)
- Thompson, D. *Understanding Situational Factors of Smartphone Use: A Pilot Study of User Diaries*

2011

- Parker, S. *XML Applications in Libraries*
- Johnson, J. *Developing an Online Course on AV Sources*

University of Missouri at Columbia

Doctoral students' committees:

- Member, Xin Wang (School of Information Science and Learning Technologies), doctoral qualifying examination, Spring 2009.
- Member, Anindita Paul, (School of Information Science and Learning Technologies), *The Use of Web Analytics on an Academic Library Website*, Ph.D., Fall 2009.

University of Texas at Austin

Doctoral students' committees:

- Chair, Gilok Choi (School of Information), course work completed, defended dissertation proposal, Spring 2007.

ANDREA J. COPELAND

Department of Library & Information Science	ajapzon@iupui.edu
School of Informatics and Computing	317.274.0114
Indiana University at Indianapolis	

EDUCATION

Ph.D., Information Studies, 2009

College of Information Science & Technology, Drexel University, Philadelphia, PA

Dissertation: *Exploration of the motivation for and knowledge of digital preservation practices for personal digital information*

Committee Chair: Denise E. Agosto, Ph.D.

M.A., Geography, 2002

Department of Geography, Hunter College of the City University of New York, New York, NY

Thesis: *A neighborhood analysis of public library use in New York City*

M.S., Library Science, 1994

College of Information, Florida State University, Tallahassee, FL

B.A., English, 1992

Department of English, University of Florida, Gainesville, FL

FUNDED AWARDS AND HONORS

2013, Outstanding Reviewer 2013, for *Collection Building*. An Emerald Literati Networks Awards for Excellence.

2013, Digital Humanities Data Curation Institute. Graduate School of Library and Information Science at the University of Illinois Urbana-Champaign. Travel Grant of \$700.

2013, Trustees Teaching Award, from the IUPUI Office of Academic Affairs. Received \$2,500.

2012-2013, IUPUI, Developing Diverse Researchers with Investigative Expertise. Received \$11,750 to support the following research: The use of personal value estimations to guide the selection of publicly available digital content.

2005-2009, Laura Bush 21st Century Librarian Fellowship, Institute of Museum and Library Services. Fellowship to cover doctoral tuition and living stipend at Drexel University's College of Information Science & Technology.

2002-2003, SWG Fellowship, Society of Woman Geographers. Fellowship supported research for master's thesis on public library use in New York City at Hunter College of the City University of New York.

RESEARCH AND TEACHING INTERESTS

Community Collections & Archives
Digital Preservation
Information Behavior

Personal Information Management
Public Libraries
Reference & Information Services

TEACHING EXPERIENCE AND DEVELOPMENT

School of Library and Information Science, Indiana University at Indianapolis

Assistant Professor

S506: Introduction to Research, (Spring, Summer, Fall 2010; Spring 2011; Fall 2011; Summer 2012; Fall 2012; Spring 2013; Fall 2013; Spring 2014)
S524: Adult Readers Advisory, (Spring 2010; Spring 2011; Spring 2012)
S501: Reference, (Fall 2009)
S553: Public Library Management, (Fall 2009; Fall 2010; Fall 2011; Fall 2012; Fall 2013)
S550: Perspective on Librarianship, (Spring 2013; Summer 2013)

College of Information Science & Technology, Drexel University

Instructor, MLIS Program

INFO650: Public Libraries, (Winter 2009)
INFO650: Public Libraries, Online, (Summer 2008)
INFO511: Information Services & Resources II, Online, (Spring 2008)

University of Maryland University College

Adjunct Associate Faculty (Fall 2005 – present)

LIBS 150: Information Literacy and Research Methods, 1 credit, undergraduate (online)
UCSP 611: Introduction to Graduate Library Research Skills, non-credit, graduate (online)

PUBLICATIONS

Refereed Articles

Copeland, A. (in progress). Perceptions of privacy and personal information storage locations. *Canadian Journal of Information Science*. Special issue: LIS Perspectives on Privacy and Management.

Tracey, S. & **Copeland, A.** (in progress). Examining the future of public access computing in public libraries. *RUSQ*.

Copeland, A. (Submitted). The use of personal value estimations to select images for preservation in public library digital collections. *Future Internet*. Special Issue on Community Archives.

- Lipinski, T. & **Copeland, A.** (2013). Look before you License: The Use of Public Sharing Websites in building Patron Initiated Public Library Repositories. *Preservation, Digital Technology & Culture*, 42(4), 174-198.
- Hedlund, O. & **Copeland, A.** (2013). Collection Management and the Budget Crunch: Are We Adequately Preparing Library Students for Current Practices? *Collection Building*, 32(4), 128-132 .
- Agosto, D. & **Copeland, A.**, & Zach, L. (2013). Testing the Benefits of Blended Education: Using Social Technology to Foster Collaboration and Knowledge Sharing in Face-To-Face LIS Courses. *JELIS*, 54(2), 94-107.
- Lacy, M. & **Copeland, A.** (2013). The role of mentorship programs in LIS education and in professional development. *JELIS*, 54(2), 135-146.
- Copeland, A.** & Agosto, D. (2012). Diagrams and relational maps: The use of graphic elicitation techniques with interviewing for data collection, analysis, and display. *International Journal of Qualitative Methods*, 11(5), 513-533.
- Gray, D. & **Copeland, A.** (2012). E-Book versus print: A per title cost and use comparison of a public library's popular titles. *RUSQ*, 51(4).
- Copeland, A.** (2011). Analysis of public library users' digital preservation practices. *Journal of the American Society for Information Science & Technology*, 62 (7), 1288-1300.
- Copeland, A.** & Barreau, D. (2011). Helping people to manage and share their digital information: A role for public libraries. *Library Trends*, 59(4), 637-649.
- Mon, L., Abels, E. G, Agosto, D. E., **Japzon, A.**, Most, L., Masnik, M., & Hamann, J. (2008). Remote reference in U.S. public library practice and LIS education. *Journal of Education for Library and Information Science*, 49(3), 180-194.
- Gong, H., **Japzon, A.**, & Chen, C. (2008). Public libraries and social capital in three New York City neighborhoods. *Tijdschrift voor Economische en Sociale Geografie*, 99(1), 65-83.
- Anderson, N., Hodge, G. & **Japzon, A.** (2007). Harnessing NASA Goddard's grey literature: The power of a repository framework. *The Grey Journal*, 3(3), 154-158.
- Japzon, A.** & Gong, H. (2005). A neighborhood analysis of public library use in New York City. *Library Quarterly*, 45, 446-463.
- Cotter, G., Carroll, B., Hodge, G., & **Japzon, A.** (2005). Electronic collection management and electronic information services. *Information Services & Use*, 25, 23-34.
- Williams, C. & **Japzon, A.** (2005). The impact of technology and a no remediation policy on non-traditional students. *Research Strategies*, 20(4), 433-441.

Japzon, A. & Anderson, N. (2005) Wallops Island balloon technology: Can't see the repository for the documents. *The Grey Journal*, 1(2),77-82.

Japzon, A. (2004). A narrative history of resource sharing in the state of Maryland. *Journal of Access Services*, 2(2), 47-52.

Refereed Book Chapters

Japzon, A. & McGlaughlin, K. (2008). Usability case study: NASA Goddard Library. In *Making Library Web Sites Usable: A LITA Guide*, New York, Neal-Schuman.

Early, C., **Japzon, A.**, & Endres, S. (2006). Creating a knowledge base: Analyzing a veteran reference librarian's brain. In *The Virtual Reference Desk: Creating a Reference Future*, New York, Neal-Schuman.

Book Reviews

Copeland, A. (2012). [Review of the book *Collection Development and Management for 21st Century Library Collections: An Introduction*.] *Library Quarterly*, 82(4), 518-520.

Copeland, A. (2012, June). [Review of the book *Reading Places: Literacy, Democracy, and the Public Library in Cold War America*.] *Indiana Magazine of History*.

Copeland, A. (2012). [Review of the book *From Fear to Flow: Personality and Information Interaction*.] *American Society for Information Science & Technology*, 63(2), 424-25.

Japzon, A. (2008). [Review of the book *Theorizing Digital Cultural Heritage*.] *Journal of the American Society for Information Science & Technology*, 59(8), 1360-61.

Japzon, A. (2007). [Review of the book *What They Didn't Tell You About Knowledge Management*.] *Journal of the American Society for Information Science & Technology*, 58(12), 1909-1910.

Refereed Conference Proceedings

Japzon, A. (2008). A model of and support for a digital preservation infrastructure that connects individuals to libraries. *Proceedings of the World Library and Information Congress: 74th General Conference and Council*. <http://www.ifla.org/IV/ifla74/papers/084-Japzon-en.pdf>

Allen, R., **Japzon, A.**, Achananuparp, P., & Jung Lee, K. (2007). A framework for text processing and supporting access to collections digitized historical newspapers. *HCI*, 9, 234-244.

Encyclopedia Entries (Invited)

Copeland, A. (forthcoming). Libraries. In *Encyclopedia of the Social & Behavioral Sciences 2nd Edition*. Oxford, Elsevier.

Joseph M. Defazio, Ph.D.
CURRICULUM VITAE

Email: jdefazio@iupui.edu
 Phone: 317-278-4148

EDUCATION

B.S.	1988	Indiana State University	Applied Computer Technology
B.A.	1994	Indiana State University	Music Performance (Piano)
M.S.	1993	Indiana State University	Applied Computer Technology
Ph.D.	2008	Indiana University	Instructional Systems Technology

ACADEMIC APPOINTMENTS

2013 – present	Program Director, Media Arts & Science Program, Department of Human-Centered Computing, IU School of Informatics & Computing, IUPUI
2010 – present	Associate Professor, Media Arts & Science Program, Department of Human-Centered Computing, IU School of Informatics & Computing, IUPUI
2003 - 2010	Assistant Professor, Media Arts & Science Program, IU School of Informatics & Computing, IUPUI
2001 - 2003	Assistant Professor, Dual Appointment, Department of Computer Technology and Media Arts & Science Program, IU School of Informatics & Computing, IUPUI
2000 - 2001	Assistant Professor Department of Computer Technology, IUPUI
1999	Lecturer, Department of Computer Technology, IUPUI
1999	Adjunct Instructor, Department of Computer Information Systems, Indiana Wesleyan University
1995 - 1999	Instructor, Computer Information Systems Department, Ivy Tech Community College

OTHER APPOINTMENTS AND PROFESSIONAL CONSULTANTSHIPS

2011- 2012	Consultant, The Renal Network Inc. Indianapolis, Indiana
2009 - present	Senior Consultant, Exaromed, Carmel, Indiana
2008 – 2009	Co-Mentor for Nerissa Bauer, MD, MPH, for the CTSI Young Investigator Award in Translational Research program
2005 - 2007	Interim-Associate Director, Media Arts and Science, IUPUI

2005	Consultant, Rubicon Consulting In: Go-To-Market Strategies
2005 - 2006	School of Informatics Faculty Council President-elect, IUPUI
2004 - 2007	Associate Graduate Program Director, School of Informatics Media Arts and Science, IUPUI
1996 - 1999	Program Chair/Instructor, Computer Information Systems Department, Ivy Tech Community College
1990 – 1995	Manager and Educator of Computer Systems Support Department, Indiana State University
1989	IT Project Manager Office Automation Department, Thomson Consumer Electronics

UNIVERSITY SERVICE

University Committees

2013 – present	IUPUI Graduate Curriculum Committee
2013 – present	IUPUI Academic Affairs Committee
2011-2012	IUPUI Sabbatical Committee
2009	Indiana University Informatics Policy Committee
2009	IUPUI On-Line Pre-Orientation Committee
2007	Explore IUPUI
2005 – 2013	IUPUI PRAC Committee
2005 - 2007	Indiana University Informatics Policy Committee
2005	IUPUI/Informatics Faculty Council Representative
2005	IUPUI Technology Committee
2003	Explore IUPUI

School Committees

2013	SOIC HCC Search and Screen Committee
2013 – present	SoIC Leadership Committee - Indy
2013 – present	SoIC Indy Department Faculty Policy Committee (HCC Representative)
2011 – 2012	Faculty Council Secretary
2011 - 2013	PRAC Report Review Sub-Committee
2010 - present	School of Informatics Promotion and Tenure Unit Committee
2010 - 2011	School of Informatics Media Arts and Science Search and Screen Committee
2009 - 2011	School of Informatics CUE Teaching and Assessment Committee

2009- present	School of Informatics, IUPUI, Performance Review and Assessment Committee, Preparing for the 2012 University Accreditation
2009-present	School of Informatics, IUPUI, Instructor/Course Evaluation Instrument Design and Development
2009 - present	School of Informatics, IUPUI, Nominating, Awards and Scholarship Committee
2009	School of Informatics, IUPUI, Student Experience Committee
2006 - 2007	School of Informatics, IU, Search and Screen Committee
2005 – present	School of Informatics/Media Arts and Science, IUPUI, Graduate Curriculum Committee
2005 – 2009	School of Informatics/New Media, IUPUI Undergraduate Curriculum Committee
2005 - present	School of Informatics, IUPUI, Agenda Committee
2005 – present	School of Informatics, IUPUI, Nominating Committee
2005	School of Informatics, IUPUI, Technology and Library Resources Committee
2005 – 2008	School of Informatics, IUPUI, Budgetary Affairs Committee
2005	Dr. Darrell Bailey Administrative Review Committee
2004	Department of Computer Information Technology, IUPUI, Search and Screen Committee
2005	School of Informatics, IUPUI, Student Affairs Committee
2004 – 2005	Department of Computer Information Technology and School of Informatics, IUPUI, Security/Informatics Curriculum Committee
2004 – 2006	School of Informatics/New Media, IUPUI, Capstone Committee
2002 – 2006	School of Informatics, IUPUI, Media Arts and Science Graduate Committee
2001 – 2002	Department of Engineering, IUPUI, Student Affairs Committee (<i>Chair</i>)
2000 – 2002	Department of Computer Information Technology, IUPUI, Curriculum
2000	Department of Computer Information Technology, IUPUI. Web Technologies Committee

SUMMARY	39 Total Service Activities (11University Service + 28 School Service)
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LICENSURE AND CERTIFICATION

1998	TIA-COMP A+ Certification
1998	Novell CNA Certification
1995	HP-UX System Administrator

1995	HP/Unigraphics System Management
1990	Apple Computer Technician
1984	Eastman School of Music Advanced Recording Engineer

PROFESSIONAL ORGANIZATIONS

2008 - present	American Composers Forum
2008 - present	American Music Center
2004 - present	Member Berkley School of Music Society
2004 - present	Member Grounded Theory Society
2003 - present	Member AECT (Association for Educational Communications and Technology)
2003 - present	Member AACE (Association for the Advancement of Computing in Education)
1999 - present	IEEE Society
1998 - present	Member ASCAP Music Publishing Organization
1996	Society for Applied Learning Computer Technology

HONORS AND AWARDS

2013	IU School of Informatics Excellence in Instruction
2013	IUPUI Chancellor's Academic Honors Convocation Award
2011	IUPUI University College – iCare Award
2008	IU School of Informatics Excellence in Instruction
2004	Renal Network, Inc. President's Award (<i>Peer-reviewed</i>)
2003	The American Association of Museums Media and Technology (MUSE) Award (<i>Peer-reviewed</i>)
2003	Girls Incorporated of Indianapolis Participants Award (<i>Peer-reviewed</i>)
2003	IU School of Informatics Excellence in Instruction
1998	Glenn W. Sample Award for Excellence in Instruction
1996	Glenn W. Sample Award for Excellence in Instruction
1995	Phi Kappa Lambda, Music Honor Society
1994	Indiana State University Sycamore ExtraMile Award
1990	Phi Kappa Phi Honor's Society

Resume

NAME Dixon, Brian Edward		POSITION TITLE Assistant Professor, Health Informatics	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
DePauw University Greencastle, Indiana	B.A.	05/01	Computer Science
Indiana University Indianapolis, Indiana	M.P.A.	05/05	Public Management
Indiana University Indianapolis, Indiana	Ph.D.	05/11	Health Informatics

A. Credentials/Background

My long-term goal is to improve the health of individuals and populations by translating innovative informatics solutions into practical (real-world) solutions that can be broadly disseminated to many health care and public health organizations. My research focuses on developing and evaluating innovative technologies and processes for managing knowledge regarding individual patients and populations. My recent work has involved leveraging health information exchange (HIE) technologies to enable secondary use of clinical and administrative data to improve public health surveillance, the determination of disability, and clinical decision support. I am involved in a number of initiatives to translate my research into practice, including the Nationwide Health Information Network (NwHIN), the Clinical Decision Support Consortium (CDSC), and the Indiana Center of Excellence in Public Health Informatics (ICEPHI). Prior to becoming a researcher, I developed software for extracting clinical information out of large data repositories and electronic messages to exchange health information across health IT systems.

I am particularly well suited to the proposed project given my experience leveraging large data repositories to identify cohorts and answer important health services research questions. I am also a part-time VA researcher, which gives me access to the VA resources and data that will be necessary to achieve the aims of the work requested by the CDC.

B. Positions and Honors

Positions and Employment

2001-2005 Computer Programmer, Medical Informatics, Regenstrief Institute, Indianapolis, IN
 2005-2011 Health Information Project Manager, Medical Informatics, Regenstrief Institute, Indianapolis, IN
 2011- Assistant Professor, Health Informatics, Indiana University, Indianapolis, IN
 2011- Research Scientist, Center for Biomedical Informatics, Regenstrief Institute, Indianapolis, IN
 2011- Investigator in Residence, VA Center of Excellence on Implementing Evidence-Based Practice, Roudebush VA Medical Center, Indianapolis, IN

Other Experience and Professional Memberships

2004- Member, American Society for Public Administration (ASPA)
 2006- Member, American Medical Informatics Association (AMIA)
 2007- Member, Healthcare Information Management Systems Society (HIMSS)
 2007- President, Indiana Chapter of ASPA
 2009-2010 Chair, Nationwide Health Information Network Specifications Factory Profile Development Team, Office of the National Coordinator for Health Information Technology
 2011- Member, International Society for Disease Surveillance (ISDS)
 2011-2012 Member, Scientific Programming Committee for the AMIA Annual Symposium
 2012- Member, AcademyHealth
 2012-2013 Member, Public Policy Committee, AMIA
 2012-2014 Member, Annual Conference Education Committee, HIMSS

Honors

1994 Eagle Scout Award, Boy Scouts of America
 2010 AMIA Doctoral Consortium on Sociotechnical Issues in Medical Informatics [Invited]
 2011 "Best Paper" of 2010 Selection for the 2011 *IMIA Yearbook of Medical Informatics*, International Medical Informatics Association (IMIA)

C. Selected Peer-reviewed Publications

Most relevant to the current application (in chronological order)

1. Zafar A, **Dixon BE**. Pulling back the covers: Technical lessons of a real-world health information exchange. *Stud Health Technol Inform*. 2007; 129(Pt 1):488-92.
2. **Dixon BE**, Zafar A, Overhage JM. A framework for evaluating the costs, effort, and value of nationwide health information exchange. *J Am Med Inform Assoc*. 2010 May 1; 17(3):295-301. PMID: PMC2995720
3. Comer KF, Grannis S, **Dixon BE**, Bodenhamer DJ, Wiehe S. Incorporating geospatial capacity to clinical data systems to address social determinants of health. *Public Health Rep*. 2011;126 Suppl 3:54-61. PMID: PMC3150130
4. **Dixon BE**, Grannis SJ. Why asking questions about data and their sources is important to public health informatics practice and research. *Online Journal of Public Health Informatics*. 2011 Dec 22; 3(3).
5. **Dixon BE**, McGowan JJ, Grannis SJ. Electronic laboratory data quality and the value of a health information exchange to support public health reporting processes. *AMIA Annu Symp Proc*. 2011:322-330. PMID: PMC3243173

Additional recent publications of importance to the field (in chronological order)

1. Crandall DK, Brokel JM, Schwichtenberg T, Henderson S, Haskins R, Wakefield D, Ward M, **Dixon BE**. Redesigning Care Delivery through Health IT Implementation: Exploring Trinity Health's IT Model. *J Healthc Inf Manag*. 2007; 21(4): 41-48.
2. **BE Dixon**. A National Roadmap for the Adoption of e-Health. *E-Service Journal*. 2007; 5(3): 3-13.
3. **Dixon BE**, McGowan JJ, Cravens GD. Knowledge sharing using codification and collaboration technologies to improve health care: Lessons from the public sector. *Knowledge Management Research & Practice*. 2009 Aug; 7(3):249-259.
4. **Dixon BE**. Enhancing the informatics evaluation toolkit with remote usability testing. *AMIA Annual Symp Proc*. 2009: 147-151. PMID: PMC2815364
5. Simonaitis L, **Dixon BE**, Belsito A, Miller T, Overhage JM. Building a production-ready infrastructure to enhance medication management: early lessons from the Nationwide Health Information Network. *AMIA Annual Symposium*. 2009: 609-613. PMID: PMC2815381
6. Zayas-Cabán T, **Dixon BE**. Considerations for the design of safe and effective consumer health IT applications in the home. *Qual Saf Health Care*. 2010 Oct;19 Suppl 3:i61-7.
7. Gamache R, Stevens KC, Merriwether R, **Dixon BE**, Grannis S. Development and assessment of a public health alert delivered through a community health information exchange. *Online Journal of Public Health Informatics*. 2010 Oct 26; 2(2).
8. Grannis SJ, **Dixon BE**, Brand B. Leveraging immunization data in the e-health era: Exploring the value, tradeoffs, and future directions of immunization data exchange. *Public Health Informatics Institute*. 2010.
9. **Dixon BE**, Kaneshiro K. Improving Access to HIV and AIDS Information Resources for Patients, Caregivers, and Clinicians: Results from the SHINE Project. *Online Journal of Public Health Informatics*. 2012 May 17; 4(1).
10. Whipple EC, **Dixon BE**, McGowan JJ. Linking Health Information Technology to Patient Safety and Quality Outcomes: A Bibliometric Analysis and Review. *Informatics for Health and Social Care*. 2012 Jun 1. [Epub ahead of print]

D. Percent of Effort on Proposed and Other Projects

Proposed: 20%, Lyme Disease and Cat Scratch Disease in Veterans: Epidemiology & Economic Burden

Other: 80%

BIOGRAPHICAL SKETCH

NAME Bradley N. Doebbeling		POSITION TITLE	
eRA COMMONS USER NAME bdoebbel		Professor of Informatics, Medicine, & Engineering	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Colorado State University, Fort Collins, CO	B.S. *	1981	Psychology
University of Colorado School of Medicine, Denver,	M.D. **	1985	Medicine
University of Iowa College of Medicine, Iowa City, IA	M.Sc.	1990	Preventive Medicine

* With Distinction ** With Honors

A. Personal Statement

Physician researcher, mentor and consultant in informatics, healthcare systems engineering and implementation science. Leader of multiple performance improvement and redesign collaboratives, successfully administered the projects, collaborated with healthcare leaders and staff, and other researchers, and produced important impacts on quality of care and multiple peer-reviewed publications. Focuses on understanding multilevel factors important in integrating clinical decision support, work and information flow, modeling care transitions, to develop tools to support teamwork and informed decision-making. Integrates organizational interventions, systems delivery research, applied informatics research, and program development. 20 years' experience, various management roles as Director of Employee Health, Director of Quality Improvement and Hospital Epidemiologist at the Iowa City VAMC. Led UI's NIH K30 Clinical Research Curriculum and NIH K12 Mentored Clinical Research Awards, funded by NIH grants over \$7M. At IU, served as founding Director of Regenstrief Institute's Health Services Research Program, founding Director of Indianapolis VA's Center of Excellence from 2003-2010. He has published over 170 peer-reviewed articles, 20 chapters and received over \$34M in peer-reviewed funding. Editorial board of several journals, including Implementation Science; Associate Director AHRQ Health Services Research Fellowship. Served on multiple grant review panels for VA, AHRQ and NIH.

Dr. Doebbeling will lead efforts at the IUPUI Biohealth Informatics Learning Lab ("BILL") in the School of Informatics and Computing, which will focus on building research and development collaborations at the interface of education, research and practice innovation across multiple interconnected areas in Health IT and clinical and public health practice. Dr. Doebbeling will specifically seek to engage faculty from across IUPUI, Indianapolis and IN in the development and use of the lab, to support collaborative research projects, software and hardware development and entrepreneurial activities to foster this work.

Positions and Honors

Positions and Employment

1985-88	Resident, Internal Medicine, University of Iowa (UI), Iowa City, IA
1988-89	Fellow, Clinical Epidemiology/General Medicine, UI, Iowa City, IA
1989-91	Fellow, Clinical Epidemiology/Infectious Diseases, UI, Iowa City, IA
1990-91	Chief Resident, Internal Medicine, University of Iowa, Iowa City, IA
1991-96	Assistant Professor, Internal Medicine, UI College of Medicine (COM), Iowa City, IA
1996-01	Associate Professor, Internal Medicine & Preventive Medicine, UI COM, Iowa City, IA
2000-03	Director, NIH K30 Clinical Research Curriculum Award, 1 K30 HL04117-01A1
2001-03	Professor, Internal Medicine & Epidemiology, UI COM and Public Health, Iowa City, IA
2003-03	PI, NIH K12, Mentored Clinical Research Scholar Program Award, \$7.8 M, UI, Iowa City, IA
2003-09	Director, Health Services Research, Roudebush VA Medical Center (RVAMC), Indianapolis, IN
2004-09	Founding Director, VA HSR&D Ctr. of Excellence, Implement. Evid.-based Practice, Indpls., IN
2003-09	Director, IU Center for Health Services & Outcomes Research, Indiana University, Indpls., IN
2003-09	Associate Director, Health Services Research, Regenstrief Institute, Indpls., IN
2003-13	Research Scientist, Regenstrief Institute, Inc. and VA HSR&D Ctr. of Excellence, Indpls., IN
2006-10	Principal Investigator, AHRQ ACTION Collaborative, IN-THRI, Indianapolis, IN
2009-	Site PI, VA Consortium for Healthcare Informatics Research, Indianapolis, IN
2007-	Professor, Biomedical Engineering, Purdue University, West Lafayette, IN.
2011-	Professor, Informatics, IUPUI, Now School of Informatics & Computing (SOIC), Indianapolis.

2013- Founding Chair and Professor of Informatics, Department of BioHealth Informatics, SOIC.

National Advisory Committees & Service

1999-04 Council on Clinical Practice Guidelines, VA, (1999-04); Scientific Advisory Panel, Patterns of Illness and Care Before Deployment, IOM

2001, 2002 Scientific Advisory Committee, Millennium Cohort Study, DoD and VA, (2001-05); Review Panel, K awards, Patient-Oriented Research Career Awards, NIH

2001-2003 Consultant, National Immunization Program, CDC, (2001-03); Advisory Panel, Program Evaluation and Improvement, QUERI, VA

2003-2005 VA-DoD National Clinical Practice Guidelines Council (NCPGC), (2002-05); VA-DoD Executive Council Deployment Health Work Group

2003-2006 VA HSRD Research Career Development Panel

2003-2008 VA Decision Support Systems Workgroup

2007-2009 Technical Expert Panel on Benchmarking, Statistical Methods for Quality Initiatives, CMMS

2007-2010 VA HSR&D QUERI Research& Methods Review Panel

2007-2009 IN State HealthCare Reform Policy Committee

2008-10 VHA System Redesign Steering Committee

2008- AHRQ Health Care Systems Grant Review Panel

2009-2010 VHA Performance Improvement Review Panel

2009-13 NIH CTSI Community Engagement, Comparative Effectiveness Research Key Function Committee

2011 NIH Implementation & Dissemination Research Review Panel

2012 Patient Centered Outcomes Research Initiative (PCORI) Review Panel

2012- PI, CDC SHEPherd IDIQ Proposal: Domain 1 HAI Prevention Implementation

2012-13 Technical Expert Panel, System Redesign Conceptual Frameworks, AHRQ and RTI

Honors and Awards

1988, 1992 American Board of Internal Medicine (ABIM), Diplomate and Infectious Diseases

1992 Elected, Central Society for Clinical Research

1993 NIOSH Special Emphasis Research Career Award; Elected to Fellowship, ACP

1993 ICAAC Young Investigator Award, American Society of Microbiology

1994 Holloway Award for Research in Health Sciences Education, UI

1996 Collegiate Teaching Award, UI

1997 Elected to Fellowship, Infectious Diseases Society of America

2002-2008 Best Doctors in U.S.

2005 *Undersecretary of Health Certificate of Appreciation, National Guidelines Council, VA

2005- *Editorial Boards, *Implementation Science* (2005-); *J Primary Care & Comm. Health* (2009-); *J Healthcare Engineering* (2010-); *J Bioengineering & Biomedical Science* (2010-)

2005 Outstanding Researcher Award, General Medicine and Geriatrics, Medicine, IUSM

2008 Indiana Public Health Foundation's Excellence in Health Science Research Award

2012- Best Doctors in Indianapolis, Indianapolis Monthly Magazine

2013- Distinguished Scholar & Fellow, National Academies of Practice (elected)

B. Publications

Publications for the Past 3 Years

1. Wu, S., Lehto, M.R., Yih, Y., Saleem, J.J., and **Doebbeling, B.N.** Impact of Clinical Reminder Redesign on Physicians' Priority Decisions. *Applied Clinical Informatics* 1 (4):466-485, (Oct.-Dec), 2010.
2. Haggstrom, D.A., Rosenman, M., Myers, L.J., Teal, E., **Doebbeling, B.N.** VA-INPC: Linking Department of Veterans Affairs (VA) and Indiana Network for Patient Care (INPC) Data to Assess Surveillance Testing Among Veterans with Colorectal Cancer. *AMIA Annu Symp Proc.* 266-70, Nov 13, 2010. PMID: 21346982.
3. Upenieks, V.V., Lee, B., Flanagan, M.E., **Doebbeling, B.N.** Healthcare Team Vitality Instrument (HTVI): Developing and Validating a Tool Assessing Healthcare Team Functioning. *J. Advanced Nursing* 66, 168-176, 2010. PMID: 19968727
4. Russ AL, Saleem J, Justice CF, Hagg H, Ebright PR, Woodbridge PA, **Doebbeling BN.** Electronic health information in use: Characteristics that Support Employee Workflow and Patient Care, *Health Informatics Journal* 16(4):287-305, Dec., 2010. PMID: 21216808

5. Haggstrom, D.A., **Doebbeling, B.N.** Quality Measurement and System Change of Cancer Care Delivery. *Medical Care*, Oct 11, 2010. [Epub ahead of print], 49:S21-S27. Dec., 2011, PMID: 20940654
6. Saleem, J.J., Russ, A.L., Neddo, A., Blades, P.T., **Doebbeling, B.N.**, Foresman, B.H. Paper Persistence, Workarounds, and Communication Breakdowns in Computerized Consultation Management. *Int J Med Inform.* Epub 2011 May 6; Jul;80(7):466-79, 2011. PMID: 21530383.
7. Mohammed-Rajput, N.A., Smith, D.C., Mamlin, B., Biondich, P., **Doebbeling, B.N.**, for the Open MRS Collaborative Investigators. OpenMRS, A Global Medical Records System Collaborative: Factors Influencing Successful Implementation. *AMIA Annu Symp Proc.* [Epub 2011 Oct 22] 960-8, 2011. PMID: 22195155.
8. Saleem, J.J., Haggstrom, D.A., Militello, L.G., Flanagan, M., Kiess C.L., Arbuckle, N., **Doebbeling, B.N.** Redesign of a Computerized Clinical Reminder for Colorectal Cancer Screening: A Human-computer Interaction Evaluation. *BMC Med Inform Decis Mak.* 11:74, Nov 29, 2011. PMID: 22126324.
9. Flanagan, M, Welsh, C.A., Kiess, C., Hoke, S., **Doebbeling, B.N.** A National Collaborative in Reducing Healthcare Associated Infections: Current Initiatives, Challenges and Opportunities, *Am. J. Infect. Control* 2011 Jun 11. [Epub], Oct;39(8):685-689, 2011. PMID: 21665329.
10. **Doebbeling, B.N.**, Flanagan, M. Emerging Perspectives on Transforming the Health Care System: Key Conceptual Issues. *Med Care.* 49 Suppl: S3-5, Dec. 2011. PMID:21623241.
11. **Doebbeling, B.N.**, Flanagan, M. Emerging Perspectives on Transforming the Health Care System: Redesign Strategies and a Call for Needed Research. *Med Care* 49 Suppl:S59-64, Dec, 2011. PMID: 22095034.
12. Wesorick, B., **Doebbeling, B.N.** Lessons from the Field: The Essential Elements for Point-of-Care Transformation. *Medical Care.* 49:S21-S27. Dec., 2011, PMID: 20940654.
13. Flanagan, M.E., Arbuckle, N., Saleem, J.J., Militello, L.G., Haggstrom, D.A., **Doebbeling, B.N.** Development of a Workflow Integration Survey for Implementing Computerized Clinical Decision Support. *AMIA Annu Symp Proc.* Oct 22; 427-34, 2011.
14. Russ, A.L., Zillich, A.J., McManus, M.S., **Doebbeling, B.N.**, and Saleem, J.J. Prescribers' Interactions with Medication Alerts at the Point of Prescribing: A Multi-Method, *In Situ* Investigation of the Human-Computer Interaction. *Int J Med Inform.* [Epub 2012 Jan 31] 81(4):232-43, 2012. PMID:22296761.
15. **Doebbeling, B.N.**, Burton, M., Wiebke, E.A., Miller, S., Baxter, L., Miller, D., Alvarez, J.L., Pekny, J.F. Optimizing Perioperative Decision Making: Improved Information for Clinical Workflow Planning. *AMIA Annu Symp Proc*, 154–163, 2012. PMCID: PMC3540545.
16. Abrahamson, K., Fox, R., **Doebbeling, B.N.** Facilitators and Barriers to Clinical Practice Guideline Use among Nurses. *Am J Nurs.* 112(7):26-35; quiz 46,36, Jul, 2012. PMID: 22705494, 2012.
17. Flanagan, M.E., Saleem, J.J., Militello, L.A., Russ, A.L., **Doebbeling, B.N.** Paper- and Computer-based Workarounds to Clinical Decision Support Use at Three Benchmark Institutions. *JAMIA.* Jun;20(e1):e59-66. Epub Mar 14, 2013. PMID:23492593.
18. Flanagan, M.E., Saleem, J.J., Militello, LA, Russ, AL, **Doebbeling, B.N.** Paper- and Computer-based Workarounds to Clinical Decision Support Use at Three Benchmark Institutions. *J Am Med Inform Assoc.* Jun;20(e1):e59-66. Epub Mar 14, 2013. PMID:23492593.
19. Saleem, J.J., Flanagan, M.E., Wilck, N.R., Demetriades, J., **Doebbeling, B.N.** The Next-Generation Electronic Health Record: Perspectives of Key Leaders from the U.S. Department of Veterans Affairs. *J Am Med Inform Assoc.* 2013 Jun;20(e1):e175-7. Epub Apr 18, 2013. PMID:23599227.
20. Kho, A.N., Doebbeling, B.N., Cashy, J.P., Rosenman, M.B., Dexter, P.R., Shepherd, D.C., Lemmon, L., Teal, E., Khokar, S., Overhage, J.M. A Regional Informatics Platform for Coordinated Antibiotic Resistant Tracking, Alerting and Prevention. *Clin Infect Dis.* 2013 May 16. [Epub ahead of print] PMID:23575195.
21. Saleem, J.J., Adams, S., Franke, I R.M., **Doebbeling, B.N.**, Patterson, E.S. Efficiency Strategies for Facilitating Computerized Clinical Documentation in Ambulatory Care. *Stud Health Technol Inform.* 2013;192:13-17.
22. Chen, S., Zillich, A.J., Melton, B., Johnson, E., Weiner, M., Russell, S.A., McManus, M.S., **Doebbeling, B.N.**, Russ, A.L. The effect of redesigned computerized drug-drug interaction alerts on medication errors and prescribing efficiency. *Value Health.* 2013 May;16(3):A13. (In press). Epub 2013 May 3. PMID:23693337.
23. Militello, L.G., Arbuckle, N.B., Saleem, J.J., Patterson, E, Flanagan, M., Haggstrom, D., **Doebbeling, B.N.** Sources of Variation in Clinical Workflow: Implications for the Design of Cognitive Support, *Health Informatics J.* (In press), 2013.

Other Relevant Publications

1. **Doebbeling, B.N.**, Chou, A.F., Tierney, W.M. Priorities and Strategies for Implementation of an Integrated Informatics and Communications Technology System for Evidence-based Practices. J. Gen. Intern. Med. 21:S98-S105, 2006.PMID: 16637961
2. Kopach, R., Lawley, M., Criswell, M., Hasan, I., Chakraborty, S., Pekny, J., **Doebbeling, B.N.** Applying Systems Engineering Principles in Improving Health Care Delivery. J Gen Intern Med. 2007 Dec;22 Suppl 3:431-7. PMID: 18026813
3. Saleem JJ, Militello LM, Arbuckle N, Flanagan M, Haggstrom DA, Linder JA, **Doebbeling BN.** Provider Perceptions of Colorectal Cancer Clinical Decision Support at Three Benchmark Institutions. AMIA Annu. Symp. Proc., 558-62, 2009.PMID: 20351917.

C. Research Support:

Ongoing Research Support

AHRQ Downs / Doebbeling (Co-PI)

7/01/08-6/30/11

Role: Co-PI

“Institutional Training Grant (T32) in Health Services Research”

Develop and implement the Indiana Health Services Research Training Program – to prepare high quality clinical investigators to conduct research that will improve the health of the public by optimizing access, quality and cost effectiveness of health services.

VA HSR&D Doebbeling (PI)

3/01/09-2/28/13

Role: PI

“Consortium for Healthcare Informatics Research: Applied Data Mining”

The overall goal of this project is to create and validate informatics tools which utilize data mining techniques to identify individuals with MRSA, in order to support the implementation of evidence-based practices for preventing and reducing MRSA infections in the hospital setting.

PCORI Doebbeling (PI)

6/1/13-5/30/16

Role: PI

“Improving Healthcare Systems for Access to Care by Underserved Patients”

The primary goal of this research is to improve health systems in Community Health Centers so underserved people and their caregivers can better access health care for common problems.

Completed Research Support

VA HSR&D Doebbeling (PI)

12/01/09-11/30/12

Role: PI

“Simulation Based Planning Model for Mental Health Care Services”

This grant’s aims are to: 1) Formulate and implement a set of procedures for a collaborative planning approach using simulation models as a decision support tool; 2) Construct and validate simulation models, and 3) Evaluate the utility of the collaborative planning approach.

AHRQ/CDC Doebbeling (PI)

9/29/08- 5/30/12

Role: PI

“Spreading Techniques to Radically Reduce MRSA”

The objectives are to (1) facilitate the implementation and inter- and intra-hospital spread of evidence-based practices and strategies to reduce MRSA; (2) utilize information technology to share information on MRSA case status and feedback on progress; (3) investigate risk factors for healthcare-associated community acquired MRSA; and (4) work with hospitals in and outside Indianapolis, AHRQ and CDC in sharing lessons learned about implementing and sustaining culture change (lean, positive deviance) interventions and tools.

NIH STTR Doebbeling (PI)

8/01/10-7/30/11

Role: PI

“Optimizing Operating Room Efficiency”

Our aims are to assess the feasibility of development of a novel optimization tool; define the task flow network and determine data required to assess scheduling solutions, and demonstrate the technical feasibility of the model solution and analysis for tactical purposes, and compare model solutions to actual efficiency.

AHRQ Doebbeling (PI)

10/01/07-3/30/11

Role: PI

“Implementing and Improving the Integration of Decision Support into Outpatient Clinical Workflow”.

The aims are to identify key approaches to CDS development for effective integration into clinical workflow; and social, technical and external factors predicting integration into workflow and adherence with clinical reminders.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Faiola, Anthony		POSITION TITLE Associate Professor of Informatics and Computing Director, Human-Computer Interaction (HCI) Dept. of Human-Centered Computing	
eRA COMMONS USER NAME (credential, e.g., agency login) afaiola			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
State University of New York at New Paltz, NY	B.F.A.	1973-75	Fine Arts
The Ohio State University, Columbus, OH	M.F.A.	1977-79	Experimental Media
The Ohio State University, Columbus, OH	M.A.	1982-84	Industrial Design & GUI Design
Purdue University, West Lafayette, IN	Ph.D.	2002-05	Communication

A. Personal Statement

My research (and that of my research group) centers on human activity in the context of sociocultural psychology and computer-mediated communication. From the perspective of application, it resides at the intersection of healthcare, human-centered computing, and distributed intelligence through health information technologies. In sum, my work draws upon research from several interrelated areas within the social sciences and computing, with greater attention to theories related to cultural-historical development, social consciousness, and cognitive processes associated with the transforming effects of pervasive technologies. Since 2008 my application of cultural mediation has been in the clinical environment. In particular, focusing on the design and sociocultural impact of medical data visualization decision-support systems and their potential to improve critical care. Approaches to observing the contextual complexities of clinical workflow in the Intensive Care Unit (ICU) provide opportunities to better understand how decision-support systems can facilitate information gathering and analysis, complex communication, and diagnostic protocol. To better support the theoretical underpinning of this research, I further developed a clinical activity model derived in part from the research of Leont'ev' and Engeström. By applying CHAT to decision support systems, brought a new approach to understanding the impact that mediating technologies have on clinical workflow, medical cognition, and the managing patient health. A novel integrated mobile data visualization-communication (VizCom) application for the ICU was designed that offers: 1) a user-centered medical data visualization system for patient diagnosis for all ICU subspecialists and 2) a specialized ICU inter-communication tool that promotes quick and direct access to sub-specialist team members, with synchronous and asynchronous access to and distribution of data visualization models and other patient information for immediate review, diagnosis and decision-making. The technology will reduce intensivist time and effort, communication breakdown, and cognitive resources, while optimizing workflow and inter-connectivity among patient-centered medical teams for prompt decision-making and communication. Other collaborative research with a clinical focus was carried out with several other colleagues in the areas of game design for hypoglycemic patients, data visualization of medication side effects, and serious games for adolescents coping with diabetes. I will contribute to the IUPUI Biohealth Informatics Learning Lab ("BILL") in the School of Informatics and Computing, which will focus on building research and development collaborations at the interface of education, research and practice innovation across multiple interconnected areas in Health IT and clinical and public health practice. I will specifically seek to engage faculty and graduate students from across IUPUI, Indianapolis and Indiana in the development and use of the lab, to support collaborative research projects, software and hardware development and entrepreneurial activities to foster this work.

B. Positions and Honors

Positions and Employment

1998—2001 Assistant Prof., Purdue University, School of Tech., West Lafayette, IN, Dept. of Computer Graphics
2001— Associate Prof., Indiana University, School of Informatics & Computing (SoIC)
Dept. of Human-Centered Computing, Indiana University Purdue University Indianapolis (IUPUI)
2003— Director, Human-Computer Interaction, Indiana University, SoIC, IUPUI
2007—2009 Director, Media Arts & Science, Indiana University, SoIC, IUPUI

2008—2013 Executive Associate Dean, Indiana University, SoIC, IUPUI

Other Experience (Selected)

Peer Reviewer

2003— Behavior & Information Technology	(Taylor & Francis Publishing)
2003— Journal of Management Information Systems	(M.E. Sharpe Publishing)
2006— Interacting with Computers	(Elsevier Publishing)
2009— Human-Computer Interaction Journal	(Taylor & Francis Publishing)

Honors and Scholarships

1999 Fulbright Scholar, Media & Interaction Design, St. Petersburg State University of Information Tech.
2001 University of New York Alumni Honor Roll, Albany, NY.
2002 Fulbright Scholar, eBook Technologies, Moscow State University of the Printing Arts
2003 Indiana University Board of Trustees Excellence in Teaching Award
2003 Fulbright Scholar, Media & Interaction Design, Moscow State University of the Printing Arts
2013 Distinguished Service Award, Dean's Award, Indiana University SoIC, IUPUI

Industrial Appointments

1991—1998 Assistant Director, LME Publications: Humanitarian Group, St. Petersburg, Russia
1986—1991 Art Director, Crown Communications: Design & Diversified Media, Columbus, OH
1985—1986 Art Director, Frigidaire/White-Westinghouse, Corp. Advertising Div., Columbus, OH
1982—1985 Senior Designer, Merrill Publishing (A Bell+Howell Co.), Columbus, OH

Most Relevant Conference Chair/Committee Positions (Since 2003)

2004 Program Committee, ACM SIGCHI, Selection Committee, SIGCHI Distinguished Speakers List.
2005 Session Co-Chair, 9th International Conference on Information Visualization, London, UK, HCI Symposium, Thematic Area: Visualization and Interaction Design
2006 Session Co-Chair, 10th International Conference on Information Visualization, London, UK., HCI Symposium Thematic Area: Visualization and Interaction Design
2007 Session Co-Chair, 11th International Conference on Information Visualization, London, UK, HCI Symposium Thematic Area: Visualization and Interaction Design
2008 Program Committee, IDC 2009, The 8th International Conference on Interaction Design for Children, In cooperation with ACM-SIGCHI, Polytechnic Institute of Milano, Italy.
2008 Program Committee, LCEA'09 Symposium, Lansdown Centre for Electronic Arts, Middlesex University, Middlesex, England.
2009 Session Co-Chair, HCI International Conference 2009, San Diego, CA., Usability for Bio and Health Informatics; Thematic Area: Ergonomics and Health Aspects of Work with Computers
2011 Session Chair, HCI International Conference 2011, Orlando, FL; Biomedical and Health Visualization HCI Design, Thematic Area: Ergonomics and Health Aspects of Work with Computers
2011 Program Committee, SeGAH 2011: 1st International Conf. on Serious Games and Applications for Health.
2011 Program Committee, DUXU 2011: Design, User Experience, and Usability, HCI International Conference, Orlando, FL.

C. Selected Peer-Reviewed Publications (Selected from 73 publications) (First author = Lead author)

Most relevant to the current application

1. Faiola, A. & Hillier, S. (2006). Multivariate Relational Visualization of Complex Clinical Datasets in a Critical Care Setting: A Data Visualization Interactive Prototype, Proceedings of the HCI Symposium –Information Visualization Conference 2006, IEEE, London, England, 460-465.
2. Duke, J. & Faiola, A. (2009). Health Informatics and Drug Effect Ranking: A Novel Data Visualization of Medication Side-Effects in Multi-Drug Regimens. In G. Salvendy and J. Jacko (Ed.), Proceedings of the 13th International Conference on Human-Computer Interaction. San Diego, CA, Vol. 5613, pp. 478-487.
3. Faiola, A. & Downey, M. (2011). Transforming Clinician Psychology via Health Information Technology as Tools of Mediation: Understanding Medical Information Visualization Systems Using Cultural-Historical Theory,

Proceedings of the 12th International Readings of L.S. Vygotsky: Sign as a Psychological Tool, Russian State University for the Humanities, Moscow, Russia, November 14-17.

4. Faiola, A. and Newlon, C. (2011). Advancing Critical Care in the ICU: A Human-Centered Biomedical Informatics Approach to Designing Data Visualization Systems, In G. Salvendy & J. Jacko (Ed.), Proceedings of the 14th International Conference on Human-Computer Interaction. Orlando, FL, 2011, Vol. 6779, pp. 119-128.
5. Faiola, A., Boston-Clay, C., Jones, J., Newlon, C., and Downey, M. (2012). Managing Patient Health Across Diverse Spaces: Using Activity Theory to Model Clinical Decision-Support for the Home. In CHI '12 Extended Abstracts: Bridging Clinical and Non-clinical Health Practices: Opportunities and Challenges (Workshop Paper), Austin, TX, May 5, 2012. ACM Press, New York, NY.
6. Faiola, A. (2013). Distributed Creative Activity: Augmenting Interpersonal Cognition in Clinical Activity through Health Information Technology, Proceedings of the Scientific Conference on Fundamental Problems of Psychology, Parallel Session on the Psychology of Humans Immersed in Information Technology, Moscow State University, Moscow, Russia, May 30 - June 1, 2013, 295-299.

Additional recent publications of importance to the field (in chronological order)

1. Faiola, A. & Matei, S. (2005). Cultural cognitive style and web design: Beyond a behavioral inquiry of computer-mediated communication. In C. Ess & F. Sudweeks (Eds.) Culture and Computer-Mediated Communication: Toward New Understandings. *Journal of Computer-Mediated Communication*, 11(1).
2. Faiola, A. & MacDorman, K. (2008). Exploring the influence of web designer cognitive style on information design: A cross-cultural comparison of a holistic and analytical perspective. *Information, Communication and Society*, 11(3), 348-374.
3. Kharrazi, H., Faiola, A., & Defazio, J. (2009). Healthcare Game Design: Behavioral Modeling of Serious Gaming Design for Children with Chronic Diseases. In G. Salvendy and J. Jacko (Ed.), *Proceedings of the 13th International Conference on Human-Computer Interaction*. San Diego, CA, Vol. 5613, 335-344.
4. Faiola, A. & Kharrazi, H. (2010). Diabetes Education and Serious Gaming: Teaching Adolescents to Cope with Diabetes. In B. M. Hayes and W. Aspray (Eds.), *Health Informatics: A Patient-Centered Approach to Diabetes*. Cambridge, MA: MIT Press, pp. 151-178.
5. Faiola, A., Ho, H., MacDorman, K. F. & Tarrant, M. (2011). The Aesthetic dimensions of US and South Korean responses to Web homepages: A cross-cultural comparison. *International Journal of Human-Computer Interaction*, 27(2), 131-150.
6. Stupiansky, N. W., Cummings, T. Faiola, A., Defazio, J. and Orr, D. P. (2011). The Effects of a Computer-Based Driving Game on Hypoglycemia Education among Adolescents with Type-1 Diabetes, *Abstract for the Society for Adolescent Health and Medicine, 2011 Annual Conference*, Seattle, Washington, March 29-April 1.
7. Faiola, A., Matei, S., & Altom, T. (2011). The Role of Physical Affordances in Multifunctional Mobile Device Design. *International Journal of Information Technology and Web Engineering*, 5(4), 40-57.
8. Bolchini, D. and Faiola, A. (2011). It's Mobile Before It's Real: Extreme Prototyping with "Paper-in-Screen, In G. Salvendy and J. Jacko (Ed.), *Proceedings of the 14th International Conference on Human-Computer Interaction*. Orlando, FL, 2011, Vol. 6770/2011, pp. 548-556.
9. Bolchini, D., and Faiola, A. (2013). *Usability Assessment*. In Dubitzky, W., Wolkenhauer, O., Yokota, H., and Cho, K.H. (Eds.). *Encyclopedia of Systems Biology*.
10. Faiola, A., Newlon, C., Pfaff, M., and Smysolva, O. (2013) Flow Experience and Telepresence in Virtual Worlds: Applications to Online Gameplay and Learning, *Computers in Human Behavior*, 29, 1113-1121.

D. Research Support

Ongoing Research Support

No Internal Number Provided

Faiola (PI)

08/01/13—07/31/14

Medical Information Visualization Assistant (MIVA) - Phase 3 Funding

Solution Center Grant (IUPUI Office of the Vice Chancellor for Research)

The object of phase three of the MIVA project is to initiate the transformation of the dynamic prototype created in Flash (developed in Phase 1 & 2) to JAVA and HL7. The intent is to produce a medical application that addresses the complexity of critical care data management and collaboration from the perspective of the distribution of clinical processes; with the goal to reduce risk and mitigate errors, while ensuring safety for the patient.

Role: PI

Pending Research Support

Pending Submission, NSF 13-543

Vararhamyan (PI)

04/01/14 – 03/31/17

Canine-Inspired Smart Sensor for Detecting Hypoglycemia from Human Breath

National Science Foundation

Diabetes is a global epidemic with a rise in the incidence of both type 2 and type 1 diabetes. The metabolic processes that lead to HYPO cause the production of specific volatile organic compounds (VOCs), including acetone, in human breath and perspiration. The VOC signature for HYPO is not currently used by the medical community to monitor T1D or track the onset of HYPO. However, trained Diabetes Alert Dogs (DADs) are able to respond to it, and patients with DADs have been shown to have improved glycemic control and improved quality of life with fewer complications and lower healthcare costs. Using the DAD model, the objective of this proposal is to form a collaboration of doctors, scientists and engineers to jointly develop a smart device able to detect the VOC signature for HYPO from human breath.

Role: Co-PI

Research Support – Prior 3 Years

2010-2458

Powers (PI)

08/01/09—07/31/10

Creatures Classified: An exploration of cataloging creatures across the galaxy

MacArthur Foundation

Using the gaming technology Spore, the object of this project was to teach elementary children science students how living organism are classified by science (e.g., Mammal, Reptile, Amphibian, Bird, Insect, Fish and Plant).

Role: Co-Investigator

The purpose of the project was to create an interactive educational game for high school students, with the goal to explain and learn principles of classification of organic life on earth.

Role: Co-PI

No Internal Number Provided

Faiola (PI)

08/01/09—07/31/10

Media Arts Research Learning Arcade (MARLA): A Research/Learning Game Community Lab

Indiana University Learning Environments Grant

The purpose of the project was to create a dedicated lab for the School of Informatics and Computing to house undergraduate education in applied gaming research and learning; functioning as a: Game Development Center, Game Library, and Game Gallery.

Role: PI

CURRICULUM VITA

NAME: Hook, Sara Anne

EDUCATION:

UNDERGRADUATE: University of Michigan-A.B., History, 1978

GRADUATE: University of Michigan School of Library Science-M.L.S.,
1980 (with courses at the College of Librarianship
Wales, Aberystwyth, Wales, U.K.)
Kelley School of Business, Indiana University-M.B.A.,
Finance, 1988
Robert H. McKinney School of Law, Indiana University-J.D.,
1994, cum laude

OTHER: Indianapolis Entrepreneurship Academy, completed April 1989

CURRENT ACADEMIC APPOINTMENTS:

2013-- Program Director, Informatics Core, School of Informatics, IUPUI
2013-- Professor, IUPUI University College [liaison to the School of Informatics and
Computing]
2007-- Adjunct Professor of Law, Center for Intellectual Property Law and Innovation,
Robert H. McKinney School of Law, Indiana University
2004-- Adjunct Professor of American Studies, School of Liberal Arts, IUPUI
1999-- Professor of Informatics, Indiana University School of Informatics, IUPUI

PREVIOUS ACADEMIC APPOINTMENTS:

2009-2010 Associate Dean for Academic Affairs, IU School of Informatics, IUPUI
2007-2008 Co-Interim Executive Associate Dean, Indiana University School of Informatics,
IUPUI
2004-2009 Associate Dean for Academic Affairs and Undergraduate Studies, IU School
of Informatics, IUPUI
1999-2004 Associate Dean of the Faculties, Office of Academic Policies, Procedures
and Documentation, IUPUI
1987-1999 Head Librarian, Indiana University School of Dentistry
1986-1987 Adjunct Lecturer, Indiana University School of Library
and Information Science
1983-1987 Public Services Librarian, Indiana University School of
Dentistry

OTHER APPOINTMENTS:

1980-1983 Assistant Librarian, Blodgett Memorial Medical Center,

Grand Rapids, Michigan

LICENSURE AND CERTIFICATION:

1982-1987 Medical Library Association Certification
1987-1989 Medical Library Association Certification
1989-1994 Senior Member, Academy of Health Information
Professionals, Medical Library Association
1993-1994 Certified Legal Intern, Indiana State Board of
Law Examiners
1994-2004 Distinguished Member, Academy of Health Information
Professionals, Medical Library Association
1994-- Admitted: Indiana State Bar
Federal Court, Southern District of Indiana
Federal Court, Northern District of Indiana
2004-2009 Distinguished Member, Academy of Health Information
Professionals, Medical Library Association
2012-- Admitted: Supreme Court of the United States

PROFESSIONAL ORGANIZATIONS:

Past Memberships and Service:

1979-1999 Member, Special Libraries Association
1979-1997 Information Technology Division, Member
1985-1999 Indiana Chapter
1985-1986 Indiana Chapter, Program Committee, Member
1987-1988 Indiana Chapter, Director-at-Large
1988-1989 Indiana Chapter, President-Elect
1989-1990 Indiana Chapter, President
1990-1991 Indiana Chapter, Past President
1988-1989 Great Lakes Conference, Communications
Committee, Member
1988-1990 Chapter Cabinet
1989-1999 Business and Finance Division, Member
1989-1999 Library Management Division, Member
1994-1995 Chair, Government Relations
Committee, USA
1989-1999 Science-Technology Division, Member
1989-1990 Alternate to Indiana Library Automation
Task Force, representing special libraries
1997-1999 Metals and Materials Division, Member
1984-1989 Member, Indiana Online Users Group
1984-1986 Publications Committee, Member
1986-1987 Secretary
1984-1989 Member, Indiana Health Science Librarians Association

	1995-1999 Bylaws Committee
	1997-1999 Chair
1994-1995	Historic Landmarks Foundation of Indiana
	1994-1995 Preservation Law Council
1994-1997	Court History Committee, Federal District Court, Southern District of Indiana
	1996-1997 Chair, Publications and Publicity Subcommittee
	1996-1997 Web site manager
1997-2001	Indiana Library Federation
	1997-2001 Legislative Committee
	1998-1999 Technology Funding Subcommittee
	1997-2001 Intellectual Freedom Committee
	1998-1999 Chair
	1997-1998 Program planner and panel chair, "Managing Internet Access without Compromising Intellectual Freedom" session, 1998 Annual Conference
	1998-2000 Secretary
	1998-1999 Program Co-Chair, Annual Conference Committee
	1998-1999 Nominating Committee
	1999-2000 Long-Range Planning Committee
	1999-2001 Author Coffee Talks Chair, Annual Conference Committee
1998-1999	Association of University Technology Managers (AUTM)
1999-2004	American Association for Higher Education (AAHE)
1999-2004	College and University Personnel Association for Human Resources (CUPA-HR)
	2000-2004 Publications Advisory Committee

Current Memberships and Service:

1994--	Indiana State Bar Association
	1994-1995 Young Lawyers Division
	1995-- Probate, Trust & Real Property Section
	1998 Pro Bono Service, Children's SSI Project
	1999-2010 Employment and Labor Law Section
	1999-- Intellectual Property Section
	2001-- Aviation Law Committee
	2003-2007 Chair
	2003-2007 House of Delegates
	2004 Talk to a Lawyer Today (pro bono program)
	2004-2005 Legal Education Conclave Committee
	2005-- Casemaker Improvement Committee
	2011-2013 Chair [appointed]
	2005-- Pro Bono Committee
	2002, 2006, 2007, 2008, 2010, 2011, 2012, 2013 Judge, Harrison Legal Writing Contest

2010-- International Legal Technical Standards Organization (ILTSO)
 2010-- Founding Member
 2010-- Advisory Board

EDITORSHIPS AND REVIEWING:

1984-1999 Book Reviewer, *Medical Reference Services Quarterly*
 1985-1993 Editor, *MIDLINE*, Newsletter of the Midwest Chapter/
 Medical Library Association
 1985 Book Reviewer, *Bulletin of the History of Dentistry*
 1986-1997 Book Reviewer, *Special Libraries*
 1986-1997 Special Assistant to the Editor, *Journal of the Indiana
 Dental Association*
 1988-- Book Reviewer, *RUSQ* (formerly *RQ*)
 1989-1992 Book Reviewer, *Science and Technology Annual Reference
 Review*
 1989-1992 Editor, *B/ITE*, Bulletin of the Information Technology
 Division, Special Libraries Association
 1989-1997 Manuscript Reviewer, *Special Libraries*
 1990-1993 Editor, *SLANT*, Newsletter of the Indiana Chapter,
 Special Libraries Association
 1991-1992 Book Reviewer, *Journal of Dental Education*
 1995-1996 Editor, *Library Management Quarterly*, Library Management
 Division, Special Libraries Association
 1998-2000 Guest Editor, *Indiana Libraries* (intellectual property issue 19(1):1-46, 2000)
 (intellectual freedom issue 19(2):1-38, 2000)
 1999-2008 Book Reviewer, *ARBA (American Reference Books Annual)*, Libraries Unlimited
 2001-2003 Book Reviewer, *AAHE Bulletin*
 2001-- Written Publications Committee, Indiana State Bar Association (including review of
 manuscripts for *Res Gestae*)
 2002 Book Reviewer, *The Journal of College and University Law*
 2003-2005 Assistant Editor, *Incipit*, Newsletter of the History of the Health Sciences Section,
 Medical Library Association
 2004-- Book and Manuscript Reviewer, American Association for State and Local History
 2008 Reviewed manuscript for an article "Post Tenure Review: An Overview" for the
Journal of Higher Education
 2010-- Editor, *International Review of Media Arts (IRMA)*
 2011-- Editorial Board, *AIPLA Quarterly Journal* (American Intellectual Property Law
 Association)
 2013 Manuscript Review, *JASIST* (Journal of the American Society for Information
 Science and Technology)

HONORS AND AWARDS:

1980 Beta Phi Mu, Library Science Honor Society
 1985 Murray Gottlieb Prize, Medical Library Association, for best unpublished

CURRICULUM VITAE

NAME: **HUANG, EDGAR S**

EDUCATION:

GRADUATE

Institute	Degree	Date Awarded
Journalism, People's University of China, Beijing, China School of Journalism. Area: Photojournalism Thesis: <i>On Documentary Photography</i>	M.L.	July 1988
University of California, San Diego, California Department of Visual Arts. Area: Visual Arts Graduation Exhibition: <i>A Great Leap Somewhere</i>	M.F.A.	June 1995
Indiana University, Bloomington, Indiana School of Journalism. Area: Mass Communication Dissertation: <i>Readers' perception of digital alteration and truth-value in documentary photographs</i>	Ph.D.	October 1999

UNDERGRADUATE

Institute	Degree	Date Awarded
The Institute of International Relations, Beijing, China English Department. Area: English	B.A.	1984

APPOINTMENTS:

ACADEMIC

Institution	Rank/Title	Inclusive Dates
International Journalism Department, Institute of International Relations, Beijing, China	Lecturer in Photojournalism	Aug. 1984–July 1992
Visual Arts Department, University of California, San Diego, CA	Teaching Assistant in Photography	Sept. 1993–June 1994
Chinese Studies Program, University of California, San Diego, CA	Teaching Assistant in Chinese	Sept. 1994–June 1995
School of Journalism, Indiana University, Bloomington, IN	Associate Instructor in Visual Communication	Aug. 1995–May 1998
School of Journalism, Indiana University, Bloomington, IN	Part-time Lecturer in Visual Communication	Aug. 1998–May 1999
Department of Communication, Northern Illinois University, Dekalb, IL	Tenure-track Assistant Professor in Visual Communication/New Technology	Aug. 1999–May 2001
Department of Sociology, University of Indianapolis	Guest lecturer of new technology	July 2000
Department of Journalism and Media Studies, University of South Florida St. Petersburg, FL	Tenure-track Assistant Professor in Visual Communication	Aug. 2001– June 2004

Department of Journalism and Media Studies, University of South Florida St. Petersburg	Designer and Producer for newsletter <i>Scoop</i>	Sept. 2002–May 2003
Chinese Community Church of Indianapolis, Indiana	Editor, Producer and Photographer for newsletter <i>CCCI Update</i>	Jan. 2003–Dec. 2005
Indianapolis Private Industry Council (IPIC)	Collaboration with Indianapolis Private Industry Council (IPIC) as a PI Team members: Traci Briggs, IUPUI School of Informatics graduate student Project title: Up to the Top: What the winners have to say Project description: Producing a promotional video of the same title Funding: IPIC and IUPUI Solution Center: \$20,588	June 2005–Aug. 2006
United States District Court Southern District of Indiana	Collaboration with United States District Court Southern District of Indiana as a PI Team members: Traci Briggs, Michael Jefferson, and Frank Tai, graduate students of IUPUI School of Informatics Project title: United States District Court Southern District of Indiana Tradition and Culture Video Project description: Producing a documentary video about the history and culture of the courthouse and a training video about the courtroom technology for attorneys Funding: United States District Court Southern District of Indiana: \$15,000	Dec. 2006–Oct. 2007
IUPUI Student Employment	Collaboration with IUPUI Student Employment as a PI Team members: Uniqah Muzaffar and Lars Larson, graduate students of IUPUI School of Informatics Project title: Student Employment Training Video Project description: Producing five training videos on student employment Funding: IUPUI Student Employment: \$11,500	Oct. 2007–Apr. 2008
Indiana Marion County Health Department	Collaboration with Indiana Marion County Health Department as a PI Team members: Marina Laus, Thomas Spenler, Brendon T Riha, Alexander Osa Nicholson, Leif Theodore Herrera, undergraduate students of IUPUI School of Informatics Project title: Smoke-free Promotional Video Project description: Producing a promotional video in the documentary form to record the opinions of people in street regarding their experience in non-smoke-free bars. Funding: Indiana Marion County Health Department: \$4,655	Oct. 2008–Jan. 2009
Noble of Indiana	Collaboration with Noble of Indiana as a PI Team members: William (Freddy) Barnes and John Powell, undergraduate students of IUPUI School of Informatics Project title: The Spirit of Noble of Indiana Project description: Producing a promotional video in the	Jan. –Jun. 2009

	documentary form for Noble of Indiana to recruit volunteers Funding: Volunteering	
Indiana Health Department	Collaboration with Indiana Health Department as a co-PI Team members: Associate Clinical Professor Susan Tennant and Research Associate Albert William of IUPUI School of Informatics Project title: Indiana Health Department Continuing Medical Education Video Project description: Producing three educational videos regarding H1N1 and Osteoporosis for Indiana Health Department Funding: Volunteering	Sep. – Oct. 2009
Women's Philanthropy Institute	Collaboration with Women's Philanthropy Institute as a co-PI Project title: 2011 Symposium on Women and Global Philanthropy Conference Promo Project description: Producing a Web site, one promo video and a few flyers for Women's Philanthropy Institute Funding: \$5,600	May – Aug. 2010
IU School of Nursing	Collaboration with IU School of Nursing Team members: Research Associate Albert William of IUPUI School of Informatics Project title: Bone Marrow Transplant (BMT) Family Project description: Producing three educational DVD videos and streaming videos regarding preparing for autologous BMT and for allogeneic BMT for Dr. Betsy Fife and her team's NIH grant. Funding: \$13,019	Aug. 2010 – Feb. 2011

TEACHING

AWARDED GRANTS/FELLOWSHIPS

Title	Granting Agency	Award Amount	Inclusive Dates
Fellowship for attending "Visual Journalism Educators Conference," St. Petersburg, FL, June 2–4, 1999	The Poynter Institute	\$1,500	1999
Fellowship for attending the "Convergence for College Educators" seminar, St. Petersburg, FL February 2–7, 2003	The Poynter Institute	\$500	2003
Faculty Liaisons in Service Learning Grant	IUPUI Vice Chancellor's Office	\$4,000	2008
RISE Course Development Fund for developing a service-learning course, I400/N485 Computing For A Cause. Applied with college Barbara Hayes and won one of the five highly competitive awards.	IUPUI Office of the Executive Vice Chancellor and Dean of the Faculties	\$2,500	2009
Overseas Study Program Development Grant for	Indiana University Office	\$3,000	2010

developing an international service-learning course, N485 New Media Without Borders	of Overseas Study		
Faculty Liaisons in Service Learning Grant	IUPUI Vice Chancellor's Office	\$4,000	2010
Engaged Department Grant, applied with Barbara Hayes and Elizabeth Lykins	IUPUI Center for Service and Learning	\$9,000	2010
Next Generation@IUPUI Leadership Training project development grant	IUPUI Office of Professional Development	\$1,000	2010
Enrollment Shaping Fund for recruiting undergraduate students in China	IUPUI Office of International Affairs	\$1,000	2010
RISE Course Development Fund for developing an international service-learning course, N485 New Media Without Border	IUPUI Office of the Executive Vice Chancellor and Dean of the Faculties	\$2,500	2010
Teaching fund for teaching a summer course at that university in 2010	People's University of China	\$4,480	2010
Enrollment Shaping Fund for recruiting undergraduate students in China	IUPUI Office of International Affairs	\$1,000	2011
Teaching fund for teaching a summer course at that university in 2011	People's University of China	\$4,480	2011
Enrollment Shaping Fund for recruiting undergraduate students in China	IUPUI Office of International Affairs	\$1,000	2012
Teaching fund for teaching a summer course at that university in 2012	People's University of China	\$4,480	2012
Enrollment Shaping Fund for recruiting undergraduate students in China	IUPUI Office of International Affairs	\$1,000	2013
Total at IUPUI		\$43,440	

PROFESSIONAL ORGANIZATIONS:

Organization	Role	Inclusive Dates
Association of Chinese Photojournalists	Member	1988–1993
International Communication Association	Member	2002–2003
Association for Education in Journalism and Mass Communication	Member, Research Chair, 2 nd Vice Chair Vice Chair Chair in the Visual Communication Division	1997–2009

New Media Consortium	Member, Editorial Advisory Board member for its inaugural peer-reviewed 2007 NMC Summer Conference Proceedings	2005– Now
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PROFESSIONAL HONORS AND AWARDS:**TEACHING**

Award Name	Granted By	Date Awarded
2007 Outstanding Internship Mentor Award	A student project including three public service announcement videos on HIV awareness and prevention produced by Huehls, P. N., Mathur, J. H., & Tai, Y. in my Spring 2007 N501 Foundations of Digital Production class for the Damien Center won IUPUI Solution Center 2007 Outstanding Internship Mentor Award.	Mar. 2007

RESEARCH

Award Name	Granted By	Date Awarded
Top Three Student Paper Award	Huang, E., 'Flying Freely But in a Cage' was granted a 'Top Three Student Paper Award' in the Communication Technology & Policy Division of the AEJMC Annual Conference held in Chicago, Illinois.	Aug. 1997
Top Three Student Paper Award	Huang, E., 'Afterthoughts on the Representational Strategies in the FSA Documentary' was granted a 'Top Three Student Paper Award' in the Visual Communication Division of the AEJMC Annual Conference held in Baltimore, Maryland.	Aug. 1998
Top Student Paper Award	Huang, E., 'Readers' Perception of Digital Alteration and Truth-value in Documentary Photographs' was granted the 'Top Student Paper Award' in the Visual Communication Division of AEJMC annual conference held in New Orleans, Louisiana. The paper also won an AEJMC/Kappa Tau Alpha Award.	Aug. 1999
AEJMC/Kappa Tau Alpha Award		
Top Award	Huang, E. The Department of Journalism and Media Studies Web site won the Top Award in the Department Web Site competition at the University of South Florida St. Petersburg.	Mar. 2004
Top Award	Leandro, G., & Huang, E. The College of Arts and Sciences Web site won the Top Award in the College Web Site competition at the University of South Florida St. Petersburg.	
First place in the Department or School Category in the "Best of the Web" Design Competition	Huang, E. The Department of Journalism and Media Studies, University of South Florida St. Petersburg, Web site won first place in the Department or School Category in the "Best of the Web" Design Competition sponsored by Association for Education in Journalism and Mass Communication.	Aug. 2004
Judges' Choice Award	Huang, E., & Marciglio, C.'s poster Searching for An Ideal Streaming Media Technology won Judges' Choice Award at The New Media Consortium Summer Conference.	June 2006

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Sarath Chandra Janga	POSITION TITLE Assistant Professor of Informatics and Computational and Systems Biology
eRA COMMONS USER NAME SCJANGA	

EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Indian Institute of Technology, New Delhi, India	B. S. & M.S	1998-2003	Bio-Chem. Engg. & Biotech.
University of Cambridge, Cambridge, UK	Ph.D.	2008-2010	Molecular & Systems Biology
Institute for Genomic Biology, UIUC, IL, USA	Postdoc	2010-2012	Genomics & Drug Discovery

A. Personal Statement

The goal of the proposed training program is to develop an integrated framework to group the strengths of the School of Informatics and Computing at Indiana University Purdue University Indianapolis (IUPUI) and multiple departments/units such as the Center for Computational Biology and Bioinformatics along with the Clinical and Translational Sciences Institute (CTSI) at Indiana University School of Medicine to create the next generation of biomedical sciences workforce who can work in biomedical big data sciences. All through my career, I have been taking non-traditional paths to research and training which should be evident from my career trajectory and number of places I have had a chance to work. Trained as an undergraduate in bioengineering, I worked as a research associate in genomics, even before starting my PhD work in Molecular Biology from Cambridge on understanding the structure, dynamics and evolution of biological networks, from 2004 to 2007 at Center for Genomic Sciences at National University of Mexico (UNAM) with some seminal contributions in the field (>20 publications). In the past 5 years, I have also contributed to the development and application of systems biology approaches for function prediction, in understanding system dynamics (>10 publications & PhD Thesis) and their application to understanding principles of genome architecture and their implications for drug discovery (5 publications) together with teaching these highly translational concepts to graduate students from diverse backgrounds, mentoring several masters students' theses and presenting seminars on these topics at more than 60 academic centers demonstrating my expertise, leadership, and capacity to successfully execute the proposed tasks. My broad exposure in genetics, genomics, drug discovery, informatics, computational and systems biology together with experience in teaching, organizing informatics courses and colloquia as well as leading international student organizations would make the joint efforts of School of Informatics and Medicine an ideal combination for the success of the proposal. In particular, existing strengths in CTSI and School of Medicine together with health as well as bioinformatics programs of the School of Informatics and Computing would be leveraged to develop several alternative career options in biomedical big data analytics by designing tailored courses which can integrate research and training to provide practical experiences in the utilization of such skills in preparation for careers in academic, state, federal, health care, or medical delivery organizations.

B. Position and Honors

Positions

Decodon GmbH, Germany	Computational Biologist	2003
National University of Mexico (UNAM)	Research Associate, Comp. Genomics	2003-2007
University of Cambridge, UK	PhD student, Molecular & Systems Biology	2008-2010

MRC Lab. of Molecular Biology, UK	PhD student, Molecular & Systems Biology	2008-2010
Institute for Genomic Biology, UIUC, USA	Postdoctoral Associate (IGB Fellow)	2010-2012
Indiana University, Indianapolis, IN	Assistant Professor, School of Informatics	2012-Present
Center for Comp. Biology & Bioinformatics	Adjunct Assistant Professor	2012-Present
Department of Med. & Molecular Genetics	Adjunct Assistant Professor	2013-Present
Department of Med. & Div. of GI/Hepatology	Adjunct Assistant Professor	2013-Present

Honors and Professional Experience

Founding member - International Society for Computational Biology-Student Council (ISCBSC)	2004
Vice-Chair - International Society for Computational Biology-Student Council (ISCBSC)	2005-2007
Multiple (5) International Society for Computational Biology (ISCB) travel Awards	2004-2006
Burroughs Wellcome Fund & NIGMS Travel fellowship for ICSB meeting	2005
Cambridge Commonwealth Trust (CCT) Scholar	2008-2010
Institute for Genomic Biology Fellowship for Post-Doctoral work	2010-2012
Keystone Symposia Scholarship "Biomolecular Interaction Networks: Function and Disease"	2010
Society for Molecular Biology and Evolution (SMBE) student travel award	2010
Editorial Board member of Network Biology	2011
Guest Associate Editor of Frontiers in Systems Biology	2011
Board member of the International Society of Network Biology (ISNB)	2011
Editorial Board member of Journal of Biomolecular Research and Therapeutics	2012
Editorial Board member of Journal of Computational Systems Biology	2012

C. Selected Peer-reviewed Publications (Selected from 47 peer-reviewed publications.) Most relevant to the current application

- 1) Kechavarzi B., Janga S.C. (2014). Dissecting the expression landscape of RNA-binding proteins in human cancers, *Genome Biol.* 15(1):R14 (PMC 24410894).
- 2) Janga, S.C., Mittal, N. (2011). Construction, structure and dynamics of post-transcriptional regulatory network directed by RNA-binding proteins. *Adv Exp Med Biol.* 722:103-17 (PMC 21915785).
- 3) Mittal, N., Scherrer, T., Gerber, A.P., Janga, S.C. (2011). Interplay between posttranscriptional and posttranslational interactions of RNA-binding proteins, *J Mol Biol*, 409(3):466-79 (PMC 21501624).
- 4) Janga, S.C., Vallabhaneni, S. (2011). MicroRNAs as post-transcriptional machines and their interplay with cellular networks. *Adv Exp Med Biol.* 722:59-74 (PMC 21915782).
- 5) Mittal, N., Roy, N., Babu, M.M., Janga S.C. (2009). Dissecting the expression dynamics of RNA-binding proteins in posttranscriptional regulatory networks, *Proc Natl Acad Sci U S A.* 106(48):20300-5 (PMC 19918083).
- 6) Janga, S.C., Tzakos, A. (2009). Structure and organization of drug-target networks: Insights from genomic approaches for drug discovery, *Molecular Biosystems*, 5(12):1536-48 (PMC 19763339).
- 7) Janga, S.C., Contreras-Moreira, B. (2010). Dissecting the expression patterns of transcription factors across conditions using an integrated network-based approach. *Nucleic Acids Res.* 38(20):6841-56 (PMC 20631006).

Additional recent publications of importance to the field (in reverse chronological order)

- 8) Janga, S.C., Díaz-Mejía, J.J., Moreno-Hagelsieb, G. (2011). Network-based function prediction and interactomics: the case for metabolic enzymes, *Metab Eng.*, 13(1):1-10. (PMC 20654726).
 - 9) Janga, S.C., Salgado, H., Martínez-Antonio, A. (2009) Transcriptional regulation shapes the organization of genes on bacterial chromosomes. *Nucleic Acids Res.* 37(11):3680-8 (PMC 19372274).
-

- 10) Janga, S.C., Babu, M.M., (2009) Transcript stability in the protein interaction network of Escherichia coli. *Mol Biosyst.* 5(2):154-62. (PMC 19156261).
- 11) Janga, S.C., Babu, M.M. (2008) Network-based approaches for linking metabolism with environment. *Genome Biol.* 9(11):239. (PMC 19040774).
- 12) Janga, S.C., Collado-Vides, J., Babu, M.M. (2008). Transcriptional regulation constrains the organization of genes on eukaryotic chromosomes. *Proc Natl Acad Sci U S A.*, 105(41):15761-6. (PMC 18840678).

D. Research Support
Ongoing Research Support

Agency	Role	Title	Duration	Amount Requested	Status
IUCRG	PI	MicroRNA regulates vascular calcification progression in chronic kidney disease	4/01/14 - 3/31/15	70000 USD	Funded
IU OVCR (Release time for Research Award)	PI	Mapping function and phenotypic information to lncRNAs through an integrated network-based approach	3/15/14 - 3/14/15	10000 USD	Funded

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Jones, Josette	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME (credential, e.g., agency login) jofjones			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Katholieke Universiteit Leuven, Louvain, Belgium School of Public Health and Hospital Sciences	Licentiate	1981	Medical Social Sciences and Hospital Business Administration
	Licensure	1981	Higher Education teaching certificate
Economische Hogeschool Sint-Aloysius, Brussels, Belgium	Licentiate	1990	Commercial and Financial Sciences -MIS
University of Wisconsin, Madison School of Nursing	PhD	2002	Nursing Informatics

NOTE: The Biographical Sketch may not exceed four pages. Follow the formats and instructions on the attached sample.

Dr Jones has developed and designed seven never-taught-before courses in nursing and health informatics: three web-based, three face-to-face graduate courses and a graduate seminar, from which one web-based course and the seminar are cross-listed in the School of Nursing and the School of Informatics. She was also instrumental in developing a certificate program in nursing informatics (School of Nursing) and clinical informatics (School of Informatics). As a core faculty member of the Center for Institutional Cooperation (CIC) in Nursing and Health Informatics, which links nursing and health informatics faculty members from five Midwestern universities (Indiana, Iowa, Michigan, Minnesota and Wisconsin), Dr Jones has been involved in an innovative and collaborative doctoral training program in health and nursing informatics. Dr Jones has directed several Master's theses, independent studies and research rotations in informatics.

Dr Jones' research program has evolved from my dissertation research and focuses on analyzing, formalizing and representing (ontology) how health care providers, including nurses, and health care consumers collect, exchange and manage data, process data into information and knowledge, and make knowledge-based decisions and inferences for health care. This empirical and experiential knowledge is used in order to broaden the scope and enhance the quality of professional practice as well as patient self-management support.

B. Positions and Honors

ACADEMIC APPOINTMENTS:

1976-1987	Professor of Nursing, Hogeschool Pius X, School of Nursing, Brussels, Belgium
1985-1992	Visiting Professor, National League for Nursing, Brussels, Belgium
1987-1997	Instructor/Coordinator, Economische Hogeschool, Brussels, Belgium
1991-1993	Research Fellowship, Katholieke Universiteit Louvain/Economische Hogeschool
1994	Lab Management Assistant, University of Wisconsin, Eau Claire, WI
1995-1996	Clinical Instructor, University of Wisconsin, School of Nursing, Eau Claire, WI
1996-1997	Instructor, University of Wisconsin, School of Nursing, Eau Claire, WI
1997 -2000	Assistant Professor, University of Wisconsin, School of Nursing, Eau Claire, WI
2000-2003	Assistant Professor (PT) , University of Wisconsin, School of Nursing, Eau Claire, WI
1996-2000	Technology Coordinator (PT), University of Wisconsin, College of Professional Studies, Eau Claire, WI

1997-1999	Research Assistant, University of Wisconsin, School of Nursing, Madison, WI
1999	Co-Instructor, University of Wisconsin, College of Engineering, Madison, WI
2001	Research Fellow, University of Wisconsin, School of Nursing, Madison, WI
2002-2007	Assistant Professor (.5), Indiana University, School of Nursing, Indianapolis, IN
2002-2007	Assistant Professor (.5), Indiana University, School of Informatics, Indianapolis, IN
2003-Pres	Adjunct Assistant Professor, Iowa University, School of Nursing, Iowa City, IA
2004-Pres	Adjunct Assistant Professor, University of Michigan, School of Nursing, Ann Arbor, MI
2007-2011	Assistant Professor (.1), Indiana University, School of Nursing, Indianapolis, IN
2007-2011	Assistant Professor (.9), Indiana University, School of Informatics, Indianapolis, IN
2011-Pres	Associate Professor (.1), Indiana University, School of Nursing, Indianapolis, IN
2011-Pres	Associate Professor (.9), Indiana University, School of Informatics, Indianapolis, IN

HONORS AND AWARDS:

1999	Harriet H. Werley Award (nominee), AMIA, Fall Symposium
2001	Research Award, Sigma Theta Tau, Delta-phi chapter
2004	Outstanding Dissertation, MNRS
2005	Excellence in Education Award, STTI- Alpha Chapter
2007	Fellow, IARCH
2008	Certificate of Appreciation UROP, IUPUI Center for Research and Learning
2008	Nursing Informatics Research Section Distinguished Service Award, Midwest Nursing Research Society
2008	Leadership Award, T.I.G.E.R. Initiative
2010, 2011	Indiana University, Indianapolis – School of Informatics; Trustees Teaching Award

PROFESSIONAL SERVICE:

Local/Regional

2002-Pres	Scientific Reviewer, Midwest Nursing Research Society (MNRS) Nursing Informatics conference proceedings
2006-2007	Member organizing Committee for MNRS workshop on “Knowledge Discovery in Databases (KDD)”

National

2005-2006	Committee Member, Alliance for Nursing Informatics Board of Governing Directors
2006-Pres	Member Organizing Committee AMIA NI Symposium
2007-2008	Member Organizing Committee MNRS 2008
2001-Pres	Scientific Reviewer, Proceedings American Medical Informatics Association AMIA
	Member Nursing Informatics (NI) Consortium –CIC for doctoral education in NI
2002-Pres	Scientific Reviewer, National State of the Science Conference Scientific Reviewer, Computers Informatics Nursing (Journal) Committee Member, American Nursing Association, Workgroup
2004-Pres	Chair, Midwest Nursing Research Society
2004-Pres	Reviewing Standards and Scope of Nursing Informatics
2005-Pres	Chair, HIMSS, Nursing Informatics Awareness Group

International

1998-1999	Reviewer, Media Award, Sigma Theta Tau International
2003-2004	Scientific Reviewer, MedInfo
2007-Pres	Scientific Reviewer, Standard Research Grants program of the Social Sciences and Humanities Research Council of Canada
2002-Pres	Scientific Reviewer Proceedings Nursing Informatics International Conference
	Organizer and chair of scientific session Human Computer Interaction International, “Human Interface and Health Care Applications”
2003-Pres	Scientific Reviewer, Journal of Medical Internet Research
2004-Pres	Grant Reviewer Social Sciences and Humanities Research Council of Canada (SSHRC)

C. Selected Peer-reviewed Publications

Dixon, B. E., Jones, J. F., & Grannis, S. J. (2013). Infection preventionists' awareness of and engagement in health

information exchange to improve public health surveillance. *American journal of infection control*

Haggstrom, D. A., Saleem, J. J., Russ, A. L., **Jones, J.**, Russell, S. A., & Chumbler, N. R. (2011). Lessons learned from usability testing of the VA's personal health record. *Journal of the American Medical Informatics Association*, **18**:i13-i17

Jones, Josette F., Phalakornkule, Kanitha; Fitzpatrick, Tia; Iyer, Sudha; Ombac C. Zorina (2011): Developing Protégé Framework to Structure Medical Reports. *HCI* (8) 2011: 356-365

Friedlin J, Mahoui M, **Jones J**, Jamieson P. Knowledge Discovery and Data Mining of Free Text Radiology Reports. Conference Proceedings 2011 Healthcare Informatics, Imaging, and Systems Biology Conference, San Jose, CA July 26-29, 2011

Josette F. Jones, Sara A. Hook, Seong C. Park, LaSha M. Scott: Privacy, Security and Interoperability of Mobile Health Applications. *HCI* (7) 2011: 46-55

Malika Mahoui, **Josette F. Jones**, Andrew Meyerhoff, Syed Ahmed Toufeeq: Can User Tagging Help Health Information Seekers? *HCI* (8) 2011: 389-397

Sandeep Raghuram, Yuni Xia, Jiaqi Ge, Mathew Palakal, **Josette F. Jones**, Dave Pecenka, Eric Tinsley, Jean Bandos, Jerry Geesaman: AutoBayesian: Developing Bayesian Networks Based on Text Mining. *DASFAA (2) 2011*: 450-453

Klinginsmith, J., Mahoui, M., Wu, Y. and **Jones J.** (2009 "Discovering Domain Specific Concepts within User-Generated Taxonomies", the 2009 International Workshop on Domain Driven Data Mining (DDDM09)

Mahoui, M., **Jones, J.**, Zollinger, D., Andersen K.P.. (2009) "Leveraging User Search Behavior to Design Personalized Browsing Interfaces for Healthcare Web Sites". Proceeding of the HCI International conference, July 2009

Jones, J; Newsom, E.T.; Delaney, C.(2009) "Use of Nursing Management Minimum Data Set (NMMDS) for a Focused Information Retrieval". Proceeding of the HCI International conference, July 2009

Jones, J; Welch, J.L.; Siek, K.A.; Connelly, K.H. (manuscript) " Building a Strong Collaborative Transdisciplinary Research Team". *Nursing Research*

Anderson, C., Keenan, G., & **Jones, J.** (2009). Using bibliometrics to support your selection of a nursing terminology *CIN*, 27 (2): 82-90. (CE approved)

Jones, J; Schilling K (manuscript) Clinical Nurses' On-Unit Information Seeking Needs and Behaviors: Implications for Librarian Liaison Roles & Library Programming, *Journal of the Medical Library Association*

Jones, J. F. (2008). Nursing and Health Care Informatics. In P. Kelly (Ed.), *Nursing Management and Leadership*. Chicago: Delmar Publishing.

Kim, J., Bennett S. J., **Jones, J.**, Graves, J.R. (2008) Generating Scientific Models of Knowledge Using arcs©. *Clinical Nurse Specialist*, 22(6).

HIMSS Nursing Informatics Awareness Task Force (2007), An Emerging Giant: Nursing informatics. *Nursing Management*, 38 (3): 38-42

Jones, J. (2006). Virginia Henderson International Nursing Library: A work in progress [Electronic Version]. *Reflections on Nursing Leadership*, 32

Jones, J (2005) Virginia Henderson International Nursing Library: A New Interface to Better Support Nursing Practice. *Clinical Nurse Specialist* 19(6): 282-284

Jones, J. (2005) Building Functional Tell and Ask Interfaces: Issues and Challenges. In G. Salvendy, (ed) Proceedings HCII 2005, Lawrence Erlbaum Associates, Inc

D. Research Support

Ongoing Research Support

My Health Care Manager (Indiana 21st Century Technology Fund Flow-through) (Tinsley, E.-PI)

Knowledge Engineering for My Health Care Manager

Role: Co-Investigator

Effort: 2.28 Summer Months

Project Period: 07/01/2008 – 06/30/2010

My Health Care Manager, in collaboration with the Regenstrief Institute Center for Aging Research; Indiana University's School of Medicine and School of Informatics; and Purdue University's Computer and Information Science and Industrial Engineering Departments proposes to build an innovative Knowledge Management and Decision Support System unique in the geriatric care management industry.

Completed Research Support

R44 RR024929-03 (Jamieson, P.--PI)

Logical Semantics (NCRR Small Business Innovative Research-II Flow-through)

Extracting Knowledge from Clinical Data Sources

Role: Subcontract Principal Investigator

Effort: 1.8 months Academic, .6 months Summer

Project Period: 01/01/2008 – 12/31/2009

Improve the semantic extraction methods developed in Phase I, improve the semantic editor and mapping method, provide a SNOMED CT auto coding service (alpha service) to participating Indiana Health Information Exchange Hospitals, build a commercial version of the DataMiner software, develop a user friendly interface

Investigator Indiana University: The University's involvement will be directed to the following research areas: (1) evaluate the structure and consistency of the large scale knowledge base with relationship to domain of coverage. (2) Construct a language-independent ontology to represent the concepts, processes, qualities and relationships by devising a clustering algorithm for semantically equivalent sentences and phrases, develop a coding system to uniquely capture semantically equivalent sentences and reject semantically incorrect sentences.

Indiana University Solution Center and Logical Semantics (Jamieson, P. PI) 2006-2007 (internal)

Venture Fund Internships (5)

Effort: .18 months Academic, .06 months Summer

Co-investigator: The internship is designed to teach the intern how to use the knowledge editor and related natural language processing applications to build the knowledge base. The intern would be introduced to the field of medical semantics; standard lexicons used in medical coding, and learn how these can be applied to create interoperable medical systems. The intern would be responsible for constructing a portion of the knowledge base.

R21 EB 007083 (Welch, Janet PI)

National Institute of Biomedical Imaging and Bioengineering (NIBIB)

2006-2008

Developing DIMA for Self-Monitoring Dietary and Fluid Intake

Effort: .9 months Academic, .75 months Summer

Project period:

Co-investigator: The central aims of the proposed study are to develop a PDA program that patients will use to monitor dietary and fluid intake (hereafter referred to as the Dietary Intake Monitoring Application [DIMA]).

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Xiaowen Liu, Ph.D.	POSITION TITLE Assistant Professor		
eRA COMMONS USER NAME (credential, e.g., agency login) XIWLIU			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Shandong University, China	B. S.	06/1996	Computer Science
Shandong University, China	M.Eng	06/2004	Computer Science
City University of Hong Kong, Hong Kong	Ph.D.	11/2008	Bioinformatics
University of Western Ontario, Canada	PostDoc	04/2008	Bioinformatics
University of Waterloo, Canada	PostDoc	07/2009	Bioinformatics
University of California, San Diego	PostDoc	07/2012	Bioinformatics

Please refer to the application instructions in order to complete sections A, B, C, and D of the Biographical Sketch.

A. Personal Statement

I have more than 8 years of experience in algorithm design and software development for problems in bioinformatics. I have been working on developing algorithms and software tools for analysis of tandem mass spectrometry data for more than 5 years. I proposed a novel CHAMPS algorithm for whole protein sequencing by first aligning tandem mass spectra to a homologous protein sequence, and further assembling short peptides into a long protein sequence. I developed MS-Deconv and MS-Align+, the first open source algorithms for top-down spectral analysis. MS-Deconv is a tool for converting complex top-down mass spectra to simple mass lists; MS-Align+ is a tool for protein identification with PTMs. Recently, I designed a new tool, MS-Align-E, for identifying ultramodified proteins using top-down tandem mass spectra. I have extensive experience in mass spectrometry data analysis.

B. Positions and Honors

Positions and Employment

2012-present Assistant Professor, School of Informatics, Indiana University-Purdue University Indianapolis, IN

C. Selected peer-reviewed publications

1. **Xiaowen Liu**, Matthew W. Segar, Shuai Cheng Li and Sangtae Kim. "Spectral probabilities of top-down tandem mass spectra". *BMC Genomics*, 15(Suppl 1):S9, 2014.
2. **Xiaowen Liu**, Shawna Hengel, Si Wu, Nikola Tolic, Ljiljana Pasa-Tolic, Pavel A Pevzner. "Identification of ultramodified proteins using top-down tandem mass spectra". *Journal of Proteome Research*, 12, 5830-5838, 2013.
3. Ansong, Charles, Si Wu, Da Meng, **Xiaowen Liu**, Heather M. Brewer, Brooke L. Deatherage Kaiser, Ernesto S. Nakayasu, John R Cort, Pavel Pevzner, Richard D Smith, Fred Heffron, Joshua N Adkins and Ljiljana Pasa-Tolic. "Top-down proteomics reveals a unique protein S-thiolation switch in Salmonella Typhimurium in response to infection-like conditions". *Proceedings of the National Academy of Sciences*, 110: 10153-10158, 2013.
4. Ashraf Ibrahima, Lian Yang, Chad Johnston, **Xiaowen Liu**, Bin Ma, and Nathan A. Magarvey. "Dereplicating nonribosomal peptides using an informatic search algorithm for natural products (iSNAP) discovery." *Proceedings of the National Academy of Sciences of the United States of America*, 109: 19196-19201, 2012.
5. **Xiaowen Liu**, Alessandro Mammana and Vineet Bafna. "Speeding up tandem mass spectral identification using indexes." *Bioinformatics*, 28: 1692-1697, 2012.

6. **Xiaowen Liu**, Yakov Sirotkin, Yufeng Shen, Gordon Anderson, Yihuan S. Ting, Ying S. Ting, David R. Goodlett, Richard D. Smith, Vineet Bafna and Pavel A. Pevzner. "Protein identification using top-down spectra." *Molecular & Cellular Proteomics*, M111.008524, 2012.
7. **Xiaowen Liu**, Yuval Inbar, Pieter C. Dorrestein, Colin Wynne, Nathan Edwards, Puneet Souda, Julian P. Whitelegge, Vineet Bafna and Pavel A. Pevzner. "Deconvolution and database search of complex tandem mass spectra of intact proteins: a combinatorial approach." *Molecular & Cellular Proteomics*, 9:2772-2782, 2010.
8. **Xiaowen Liu**, Jinyan Li and Lusheng Wang. "Modeling protein interacting groups by quasi-bicliques: complexity, algorithm and application." *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 7:354-364, 2010.
9. **Xiaowen Liu**, Baozhen Shan, Lei Xin and Bin Ma. "Better score function for peptide identification with ETD MS/MS spectra." *BMC Bioinformatics*, 11(Suppl 1):S4, 2010.
10. **Xiaowen Liu**, Yonghua Han, Denis Yuen and Bin Ma. "Automated protein (re)sequencing with MS/MS and a homologous database yields almost full coverage and accuracy." *Bioinformatics*, 25:2174-2180, 2009.
11. Jing Xiao, Lusheng Wang, **Xiaowen Liu** and Tao Jiang. "An efficient voting algorithm for finding additive biclusters with random background." *Journal of Computational Biology*, 15:1275-1293, 2008.
12. Yun Cui, Lusheng Wang, Daming Zhu, **Xiaowen Liu**. "A $(1.5 + \epsilon)$ -approximation algorithm for unsigned translocation distance." *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 5: 56-66, 2008.
13. Lusheng Wang, Yu Lin and **Xiaowen Liu**. "Approximation algorithms for biclustering problems." *SIAM Journal on Computing*, 38: 1504-1518, 2008.
14. **Xiaowen Liu** and Lusheng Wang. "Computing the maximum similarity bi-clusters of gene expression data." *Bioinformatics*, 23:50-56, 2007.
15. **Xiaowen Liu** and Lusheng Wang. "Finding the region of pseudo-periodic tandem repeats in biological sequences." *Algorithms for Molecular Biology*, 2006 1:2, 2006.

D. Research Support

None.

BIOGRAPHICAL SKETCH

NAME Karl F. MacDorman, Ph.D.	POSITION TITLE Associate Professor of Informatics Human-Computer Interaction Program		
University of California, Berkeley, Berkeley, CA University of Cambridge, Cambridge, UK	A.B. Ph.D.	1988 1997	Computer Science Computer Science

Positions

- 11/2005 – Associate Professor, HCI Program, School of Informatics, Indiana University
 11/2005 – Adjunct Professor, Department of Electrical and Computer Engineering, School of Engineering and Technology, Purdue University
 7/2003 – 10/2005 Associate Professor, Graduate School of Engineering, Osaka University, Japan

Selected Peer-reviewed Publications (from more than 100 peer-reviewed publications)

1. **MacDorman, K. F.**, Srinivas, P., & Patel, H. (2013). The uncanny valley does not interfere with level 1 visual perspective taking. *Computers in Human Behavior*.doi:10.1016/j.chb.2013.01.051
2. Mori, M. (2012). The uncanny valley (K. F. MacDorman & Norri Kageki, Trans.). *IEEE Robotics and Automation*, 19(2), 98–100. (Original work published in 1970). doi:10.1109/MRA.2012.2192811
3. Bayliss, L., McCarthy, A., Woodard, K., Dennis, L., Ivory, J. D., Patel, H., & MacDorman, K. F. (2012). Receptive to bad reception: Can jerky video make persuasive messages more effective? *Proceedings of the Conference of the International Communication Association*, Information Systems Division. May 24–28, 2012. Phoenix, Arizona.
4. Mitchell, W. J., Szerszen, Sr., K. A., Lu, A. S., Schermerhorn, P. W., Scheutz, M., & **MacDorman, K. F.** (2011). A mismatch in the human realism of face and voice produces an uncanny valley. *i-Perception*, 2(1), 10–12.
5. Gadde, P., Kharrazi, H., Patel, H., & **MacDorman, K. F.** (2011). Toward monitoring and increasing exercise adherence in older adults by robotic intervention: A proof of concept study. *Journal of Robotics*.
6. BenMessaoud, C. B., Kharrazi, H., & **MacDorman, K. F.** (2011). Facilitators and barriers to adopting robotic-assisted surgery: Contextualizing the Unified Theory of Acceptance and Use of Technology. *PLoS ONE*, 6(1), e16395. doi:10.1371/journal.pone.0016395.
7. Faiola, A., Ho, C.-C., Tarrant, M. A., & **MacDorman, K. F.** (2011). Expressive homepage design: An empirical comparison of US and South Korean aesthetic dimensions and the impact of design factors on aesthetic intensity. *International Journal of Human-Computer Interaction*.
8. **MacDorman, K. F.**, Coram, J. A., Ho, C.-C., & Patel, H. (2010). Gender differences in the impact of presentational factors in human character animation on decisions in ethical dilemmas. *Presence: Teleoperators and Virtual Environments*, 19(3), 213–229.
9. **MacDorman, K. F.**, Green, R. D., Ho, C.-C., & Koch, C. (2009). Too real for comfort: Uncanny responses to computer generated faces. *Computers in Human Behavior*, 25(3), 695–710. doi:10.1016/j.chb.2008.12.026
10. Chalodhorn, R., **MacDorman, K. F.**, & Asada, M. (2009). Humanoid robot motion recognition and reproduction. *Advanced Robotics*, 23(3), 349–366. doi:10.1163/156855308X397569
11. Ho, C.-C., & **MacDorman, K. F.** (2010). Revisiting the uncanny valley theory: Developing and validating an alternative to the Godspeed indices. *Computers in Human Behavior*, 26(6), 1508-1518. doi:10.1016/j.chb.2010.05.015

Research Support**Ongoing**

NIH A. S. Lu (PI), K. F. MacDorman (co-I) 2013 – 2016
The Narrative Impact of Active Video Games on Physical Activity (scored in the top 5%)

Project reference: 248116

T. Belpaeme (Coordinator) 3/2010 – 8/2014

European Commission

Adaptive Strategies for Sustainable Long-Term Social Interaction (ALIZ-E) <http://www.aliz-e.org/>
 Seventh EU Framework Programme for Research and Technology Development,
 Large-scale Integrating Projects (IP)
 Role: Advisor, International Scientific Advisory Board

Android Science Signature Center K. F. MacDorman (PI)
IUPUI Office of the Vice Chancellor for Research

4/2008 – 6/2011

Research Support Funds Grant IUPUI Office of the Vice Chancellor for Research <i>Support for Purchase of BioPac Psychophysiological Measuring Equipment</i>	M. Pfaff (PI), K. F. MacDorman (co-I)	8/2010 – 8/2011
Completed		
RIF Research Investment Fund Grant Program, IU School of Informatics <i>The Impact of Anthropomorphism, Nonverbal Cues, and Contingency on Ethical Decision Making about Medical</i>	K. F. MacDorman (PI)	8/2007 – 3/2008
Tom Gerety Fellowships for Action <i>Mega-Response to Mega-Disasters</i>	K. F. MacDorman (PI)	6/2007 – 8/2007
Indiana Lung Cancer Working Group <i>Predictive Lung Cancer Systems Biology: Towards Postoperative Patient Chemotherapy Survival</i> Role: Collaborator	J. Chen (PI), K. F. MacDorman (collab.)	11/2006 – 11/2008
NEDO New Energy and Industrial Technology Development Organization, Japan <i>The Development of a Humanlike Android</i> Role: Co-PI	H. Ishiguro (PI), K. F. MacDorman (co-PI)	8/2004 – 3/2006
Kiban A.2 Japan Society for the Promotion of Science (JSPS), Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan <i>Research on Intelligent Information Processing in Robot-Environment Integration: The Development of Eveliee P1 and a Sensor Network</i> Role: Co-Investigator	H. Ishiguro (PI), K. F. MacDorman (co-PI)	4/2004 – 3/2008
Frontier Research Center Role: Co-PI Acceptance rate: 2% (2 of 108), Effort: 100%	M. Asada (PI), K. F. MacDorman (co-PI)	7/2003 – 10/2005
SR&ED Scientific Research & Experimental Development, Canada <i>FiloSafe: A Secure Online Business Collaboration Environment with Duty-oriented Access Control</i>	K. F. MacDorman (PI)	1/2001 – 12/2003
CREST Core Research for Evolutional Science and Technology, Japan Science and Technology Corp. <i>The Development of a Distributed Omnidirectional Vision System for Subway Station Surveillance, The Development of an Omnidirectional Display, Town Digitizing Project</i> Role: Collaborator (from 1/2004)	T. Ishida (PI), K. F. MacDorman (collab.)	7/2000 – 3/2005
Shourei Kenkyu Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan <i>Research on Symbol Emergence in a Humanoid Robot</i>	K. F. MacDorman (PI)	4/2000 – 3/2002
Kakenhi Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan <i>Memory-based Activity Study that Uses Data Compression Technology</i> Role: Co-PI	F. Miyazaki (PI), K. F. MacDorman (co-PI)	4/1998 – 3/2000
Robot Brain Project Japan Science and Technology Corp. Role: Co-Investigator	Y. Nakamura (PI), K. F. MacDorman (co-PI)	4/1998 – 3/2003

Steven Mannheimer

Informatics, IUPUI

WK 308

278-4913

smannhei@iupui.edu**Education**

1972 BA, Grinnell College, Grinnell, IA

1973 BFA, Drake University, Des Moines, IA

1975 MFA, Washington University, St. Louis, MO.

Teaching Appointments

- 2013 – present** Associate Dean for Faculty Affairs, IU School of Informatics and Computing, IUPUI.
- 2002 - present** Professor, Media Arts and Science Program, Department of Human-Centered Computing, IU School of Informatics and Computing, IUPUI.
- 1976 - 2000** Visiting Instructor, Instructor, Assistant Professor, Associate Professor, Professor of painting and drawing Herron School of Art, IUPUI (now Herron School of Art and Design)
- 1976** Summer instructor, Drake University, Des Moines, IA
- 1974 - 1975** Instructor, Belleville Area College, Belleville, Illinois

TEACHING / CIVIC ENGAGEMENT**Grants, Projects and Awards****2006**

“Civic Engagement Practicum with the Arts Council of Indianapolis;” project funded by IUPUI Solutions Center, to mentor and support IUPUI students as they conceptualized innovative technological approaches to arts marketing and interactive strategies in the community. Role: PI. Budget: \$40,000.

2004

Lumina Foundation to create a series of student art works to illustrate its annual report, solicit and select student artists and designers from three Indiana universities. Role: Artistic PI. Budget of \$35,000.

2004

TERA Award, School of Informatics, IUPUI

CIVIC ENGAGEMENT / SERVICE**Selected Appointments, Contracts, Grants and Supported Projects****2008-9**

Principle Investigator: “Healthy Games for Crispus Attucks.” Funded by grants from Mr. Oscar Robertson, Mr. Herb Simon and Chancellor Charles Bantz to sponsor a week-long workshop for students from the Crispus Attucks Medical Magnet High School, to come to IUPUI to envision how to combine media technologies and exercise activities. Role: PI. Budget: \$14,000.

2007-9

Crispus Attucks Museum Technology Enhancement and Video Archives Project. Directed a two-year project to begin a video archive of Attucks alumni, as well as a suite of technology applications to enhance the museum’s display capacity, sponsored by IUPUI Solution Center. Role: PI. Budget: \$16,000.

2006-7

“Oscar Robertson Scrapbook Digitalization and Reproduction Project,” a project co-founded by the NBA Indiana Pacers and the IUPUI Solutions Center to reproduce the original high school scrapbooks of basketball great Oscar Robertson, and present these reproductions to the Crispus Attucks Medical Magnet High School Museum. Role: PI. Budget: \$5,000.

2006-present

Senior Design Team Projects, the Purdue School of Engineering, IUPUI. Devised a team project and guided four-person development teams of senior engineering students. One team per year, although two teams mentored in 2008-09. Role: External client.

2003-present

Senior Design Team Projects, Rose-Hulman Institute of Technology. Role: External client for five design teams over the past decade. Projects have centered on development of technology applications for visually impaired students.

1997

Wright Quad Mural Competition Committee, Indiana University, Bloomington, worked with IU administrators to conceptualize and coordinate a competition to design a 30-ft mural for the Wright Quad, a campus dormitory dining room. Role: Consultant.

1996

Design consultant to the National Bank of Indianapolis to help its leadership conceptualize an “Indianapolis-centric” design strategy and theme for the architecture of its first, stand-alone branch office.

CIVIC ENGAGEMENT / SERVICE (cont.)

Selected Appointments, Contracts, Grants and Supported Projects**1992-98**

Public Art Fund of Indianapolis. Worked with city administration to conceptualize the mission and processes of a \$120,000 fund to spur the development of public art in the city. Served as Mayor Stephen Goldsmith's appointee on the Fund's board of directors.

1993-96

"Landmark for Peace" for the NBA Indiana Pacers, a project to design and construct a large-scale public memorial to Dr. Martin Luther King, Jr. and Sen. Robert F. Kennedy in King Memorial Park at 17th and Broadway streets, Indianapolis. Role: PI-Project manager. Budget: \$100,000 (part of \$350,000 city budget).

1993-96

St. Vincent Artistic Enhancement Master Plan for St. Vincent Hospital, Indianapolis. Conceptualized and executed a master plan to bring artistic and design enhancements to the hospital's main site and facilities. Role: Project director/ PI. Budget: \$250,000

1995-96

"Golden Raintree Competition," competition to create a memorial to Indiana statesman and visionary Larry Conrad in the Circle Centre Mall, Indianapolis. Role: Project director / PI. Budget: \$60,000.

1992

Consultant to the Indiana Department of Veterans Affairs and the American Legion and the Indiana Arts Commission to write competition guidelines to design memorials for the Vietnam and Korean.

1991-92

Indiana Energy Sculpture Competition, a competition to create a public sculpture for the central Indiana utility company at 17th and Meridian streets. Role: Project director / PI. Budget: a \$40,000.

1988

Winona Memorial Hospital Arts Festival. Working with hospital staff and outside public relations professionals, developed a plan for a two-day festival of public arts creation, sporting events and music concerts. Role: Co-PI. Budget: \$50,000.

1984

Board member, White River State Park Arts Festival. Participated in planning of city-wide celebration of the arts to promote the new state park.

CIVIC ENGAGEMENT / SERVICE (cont.)**Selected Appointments, Contracts, Grants and Supported Projects****Service to the Profession****2013**

National Science Foundation, invited participant:
Radical Innovation Summit, Washington, DC

2013

National Science Foundation, Peer Review Panel – Informal Science Education,
Washington, DC

2012

National Science Foundation, Peer Review Panel– Informal Science Education
Washington, DC

1985, 1993-2000**President, Mid-America College Art Association**

Working as executive director and president of this 70-year-old association of college and university art and design professionals. As president, I orchestrated every aspect of the association's biennial, conventions, which served approx. 300-400 participants from across the country. These conventions were four-day events featuring workshops, keynote addresses and 40-50 discussion panels.

University Service (selected)**2012-13**

Strategic Planning Task Force on Transforming Online Education, chair

2012-15

University Faculty Council, elected at-large member

2012

IUPUI Board of Review, chair of the panel reviewing a case

2009-2013

Chair, IUPUI School of Informatics Promotion and Tenure Committee

2009-2012

Chair of IU School of Informatics (both campuses) Tenure and Promotions
Primary Committee;

Xi Niu, Ph.D.
Assistant Professor
Department of Human-Centered Computing
School of Informatics and Computing
Indiana University at Indianapolis Campus
xiniu@iupui.edu
(919) 381-7759

EDUCATION

- Ph.D., Information Science, University of North Carolina at Chapel Hill, 2012
- Ph.D. Studies, Incomplete (transferred to UNC), Information Systems, University of Illinois at Urbana Champaign, 2006 - 2007
- M.S., Software, Tsinghua University, Beijing, China, 2006
- B.S., Automation, Beihang University, Beijing, China, 2003

APPOINTMENTS

- Assistant Professor, School of Informatics and Computing, Indiana University (IUPUI), 2013 - present
- Assistant Professor, School of Library and Information Science, Indiana University (IUPUI), 2012 – 2013
- Instructor, School of Information and Library Science, University of North Carolina at Chapel Hill, 2010 - 2012
- Research Assistant, School of Information and Library Science, University of North Carolina at Chapel Hill, 2008 -2012
- Research Assistant, Business School, University of Illinois at Urbana-Champaign, 2006 - 2008

RESEARCH INTERESTS

Dr. Niu has substantial experience in analyzing online user behavior to generate insights about user experience. Her specialties include:

- Faceted Search
- Quantitative analysis of large-scale user behavior data
- Transaction log analysis
- Triangulation of quantitative and qualitative methods
- Interactive information retrieval

PUBLICATIONS

Book Chapters

[1] **Niu, X.** (2013). Faceted Search for Library Catalogs. Emerald Library and Information Science Book Series: *New Directions in Information Organization*. Emerald Group Publishing Limited. 173-208.

Selected Journal Papers

[1] **Niu, X.,** & Hemminger, B. M. (2014). Analyzing the Interaction patterns in a Faceted Search Interfaces. *Journal of the American Society for Information Science and Technology (JASIST)*, *Accepted*.

[2] **Niu, X.,** Zhang, T., & Chen, H. (2014). Study of User Search Activities with Two Discovery Tools at an Academic Library. *International Journal of Human-Computer Interaction (IJHCI)*.

[3] **Niu, X.,** & Kelly, D. (2014). The Use of Query Suggestions as Idea Tactics during Information Search. *Information Processing & Management (IP&M)*. 50(1), 218 - 234.

[4] **Niu, X.,** & Hemminger, B. M. (2012). A Study of Factors that Affect the Information Seeking Behavior of

Academic Scientists. *Journal of the American Society for Information Science and Technology (JASIST)*, 63(2), 336-353.

[5] **Niu, X.**, Hemminger, B. M., & Lown, C. (2010). National Study of Information Seeking Behavior of Academic Researchers in the United States. *Journal of the American Society for Information Science and Technology (JASIST)*, 61(5), 869-890.

[6] **Niu, X.**, & Hemminger, B. M. (2010). A Method for Visualizing Transaction Logs of a Faceted OPAC. *The Code4Lib Journal Issue 12*, ISSN 1940-5758.

[7] **Niu, X.**, Liu, Q. (2006). Complementary Use of Goal-oriented Modeling with GRL and Scenario Modeling with UCM. *Microcomputer & Its Applications*, 27(6), 225-234.

Selected Conference Papers

[1] Jia, Y., Niu, X. (2014). Should I Stay Or Should I Go: Two Features To Help People Stop An Exploratory Search Wisely. In *Proceedings of the 32th ACM Conference on Human Factors in Computing Systems (CHI 2014)*. Toronto, Canada, April 26-May 1, 2014.

[2] Jia, Y., Niu, X., Bharali, R., Bolchini, D., De Tienne, A. (2014) CORPUS: Next-Generation Online Platform For Research Collaborations In Humanities. In *proceedings of the 16th International Conference on Human Computer Interaction (HCI)*. Creta Maris, Greece, June 22-27.

[3] Jia, Y., **Niu, X.**, Bharali, R. Bolchini, D., Tienne, A.D. (2014) Collaborative Online Research Platform For Scholars In Humanities. In *proceedings of the 17th ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW)*. Baltimore, MD, February 15-19.

[4] **Niu, X.** & Hemminger, B. M. (2011). Effectiveness of Real-Time Query Expansion in a Library Catalog. In *Proceedings of the 74rd ASIS&T Annual Meeting*, Vol 48. New Orleans, LA, October 9-13, 2011.

[5] **Niu, X.**, & Hemminger, B. M. (2010). Beyond Text Querying and Ranking Lists: How People Are Searching through Faceted Catalogs in Two Library Environments. In *Proceedings of the 73rd ASIS&T Annual Meeting*, Vol 47. Pittsburg, PA, October 22-27, 2010.

[6] Kelly, D., Cushing, A., Dostert, M., **Niu, X.**, & Gyllstrom, K. (2010). Effects of Popularity and Quality on the Usage of Query Suggestions during Information Search, In *Proceedings of the 28th ACM Conference on Human Factors in Computing Systems (CHI 2010)*, 45-54. Atlantic, GA, April 10-15, 2010.

[7] **Niu, X.**, & Hemminger, B. M. (2010). Library Homepage vs. Google: Interface Preference of Academic Researchers. In *Proceedings of the 8th Information Seeking in Context Conference (ISIC 2010)*. Murcia, Spain, September 18-October 2, 2010.

[8] **Niu, X.**, & Hemminger, B. M. (2010). Tactics for Information Search in a Public and an Academic Library Catalog with Faceted Interfaces. In *Proceedings of the 4th Workshop on Human-Computer Interaction and Information Retrieval (HCIR'10)*, 83-86. New Brunswick, NJ, August 22, 2010.

[9] **Niu, X.**, Lown, C., & Hemminger, B. M. (2009). Log Based Analysis of How Faceted and Text Based Search Interact in a Library Catalog Interface. In *Proceedings of the 3rd Workshop on Human-Computer Interaction and Information Retrieval (HCIR'09)*, 62-65. Washington. D.C., October 23, 2009.

[10] **Niu, X.**, & Hemminger, B. (2009). Information Resources Used by Academic Professors of the United States in the Electronic Age. In *Proceedings of the 4th Annual iSchools Conference (iConference'09)*. Chapel Hill, NC, February 8-11, 2009.

[11] **Niu, X.**, & Liu, Q. (2006). Survey of Requirement Modeling in Software Engineering. In *Proceeding of the 2nd International Conference on Information Management and Business (IMB'06)*. Sydney, Australia, February 13-16, 2006.

[12] **Niu, X.**, & Liu, Q. (2005). An Agent-Oriented Requirement Modeling Method Based on GRL and UML. In *Proceedings of the Conference on Information Technology in Asia 2005 (CITA'05)*. Kuching, Malaysia, December 12-15, 2005.

Doctoral Dissertation

Niu, X. (2012). Beyond Text Queries and Ranked List: Faceted Search in Library Catalogs. Advisor: Bradley Hemminger. School of Information and Library Science. University of North Carolina at Chapel Hill.

SELECTED AWARDS/GRANTS/GRANTS

- RTR (Release Time for Research) Grant, \$9,773
- EMPOWER Award Winner, 2013, Indiana University, \$6,000
- Eugene Garfield Doctoral Dissertation Fellowship, Beta Phi Mu, 2012, \$3000
- Carnegie Doctoral Student Grant, Carnegie Foundation, 2010 (for supporting dissertation research and travel)
- Future Faculty Fellowship Award, University of North Carolina at Chapel Hill, 2010

TEACHING

Indiana University

- Instructor, INFO I308 Information Representation (Spring 2013, Fall 2013, Spring 2014)
- Instructor, S533 Online Searching (Spring 2013)
- Instructor, S503 Organization and Representation of Information and Knowledge (Fall 2012)
- Instructor, S511 Database Design (Fall 2012)

University of North Carolina at Chapel Hill

- Instructor, INLS 461 Information Tools (Fall 2010, Summer 2011)

PRESENTATIONS, INVITED TALKS, POSTERS

- Invited talk at World Usability Day, Indianapolis, IN, November 14, 2013: Mobile search behavior with library catalogs.
- Guest speaker at IUPUI Info H624 Advanced Seminar I in Human-Computer Interaction, Oct 1, 2013
- Guest speaker at IUPUI Info I305 Introduction to Research in Informatics, April 1, 2013
- Invited talk at the Purdue Library, West Lafayette, IN, Mar 7, 2013: Beyond simple look-up
- Poster at ASIS&T 2011, New Orleans, LA, October 10, 2011: Effectiveness of real-time query expansion in a library catalog
- Invited talk at Research Highlights in celebration of UNC SILS 80th Anniversary, Chapel Hill, NC, September 24, 2011: Easier, faster, or both? Innovative search vs. traditional search
- Invited talk at Research Blitz of Metadata Research Center (MRC), Chapel Hill, NC, June 7, 2010: Faceted search and the next generation library catalogs
- Presentation at ASIS&T 2010, Pittsburgh, PA, October 22, 2010: Faceted search in two library catalogs
- Presentation at ISIC 2010, Murcia, Spain, June 21, 2010: Library preference of academic researchers
- Poster at HCIR 2010, Newark, NJ, August 22, 2010: Tactics for information search in a public and an academic library catalog with faceted interfaces
- Invited talk at the UNC Doctoral Student Symposium, Chapel Hill, NC, October 30, 2009: Transaction log analysis on the UNC faceted catalog
- Poster at iConference 2009, Chapel Hill, NC, February 8, 2009: Information resources used by academic professors in the United States in the electronic age
- Invited talk at Tsinghua Alumni Association Research Symposium, Chicago, IL, September 1, 2006: Requirement modeling in software engineering
- Presentation at IMB 2006, Sydney, Australia, February 12, 2006: Tools for requirement modeling
- Presentation at CITA 2005, Kuching, Malaysia, December 16, 2005: Agent-oriented modeling methods

PROFESSIONAL SERVICES

- Reviewer – The ACM Computer Human Interaction Conference 2014 (CHI 2014)
- Member of the IUPUI Campus Program Review and Assessment Committee (PRAC), 2012
- Member of the School of Informatics and Computing Budgetary Affairs Committee, 2012 - present
- Member of the Search Committee for the Lecturer Position at the HCC Department, 2013

- Reviewer – Journal of Library Metadata, 2012
- Reviewer — Journal of the American Society for Information Science and Technology (JASIST), 2008 - present

PROFESSIONAL AFFILIATIONS

- Association for Computing Machinery (ACM)
- American Society for Information Science and Technology (ASIS&T)
- Association for Library and Information Science Education (ALISE)
- Association for Information Systems (AIS)

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Palakal, Mathew	POSITION TITLE Professor of Informatics and Computer Science		
eRA COMMONS USER NAME (credential, e.g., agency login) mpalakal			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Concordia University, Montreal, Canada	B.S.	05/79	Computer Science
Concordia University, Montreal, Canada	M.S.	05/83	Computer Science
Concordia University, Montreal, Canada	PhD.	05/87	Computer Science

A. Personal Statement

Dr. Palakal has more than 15 years of practical research and development experience in bioinformatics, specifically in mining biomedical and electronic health records. His lab introduced the concept of bibliomics in developing BioMAP—a system which implements methods for the analysis of health and biological literature data for identifying biological networks, providing computerized support for disease targeting, and for the stratification of diseases from the electronic health records. This system is currently being tested in a variety of biomedical, health and STEM research areas—specifically, as a novel biomarker discovery tool in colon cancer (DoD funded); as a risk-intervention discovery tool in geriatric care (NIH funded); as a systems-level network characterization tool to differentiate regenerating and non-regenerating animal models (DoD funded); to map STEM content to an audeme structure for improved STEM education (NSF funded); for characterizing MRSA infections from clinical notes (VA CHIR funded); for pancreatic cyst identification and stratification from clinical notes (PROSPECT grant); and, the project called Health-Terrain, an clinical data analytics and visualization environment for large data (DOD funded). In the DOD funded regeneration project, his team identified a total of nine potential growth factors that can induce regeneration using the BioMAP text mining tool that has resulted in positive laboratory testing. This finding is a strong proof of concept that growth factors identified by text mining can be used to stimulate regeneration across a critical size defect. Accurate characterize of these growth factors were possible using a unique “multi-level, multi-scale, down stream analysis” technique that is part of the BioMAP text mining system.

The specific goal of the educational program is to empower the next generation of biomedical big data scientists with the array of knowledge and skills needed to be successful in an academic career and professional careers. Dr. Palakal will use his expertises in biomedical text mining and intelligent information management systems. He will provide great training on how to create a scalable knowledgebase of biological relationships extracted from vast amount of biomedical literature data. He will also teach innovative information management and knowledge discovery tools to sift through vast volumes of heterogeneous data from various information sources. His previous expertise with developing biomedical and clinical text and datamining will be appropriate and will greatly help with the development of the proposed explanation part of the project.

B. Positions and Honors

Positions and Employment

2006 - present Associate Dean, Research & Graduate Programs, School of Informatics
Indiana University Purdue University, Indianapolis
2001 - present Professor of Department of Computer and Information Science

2001 - present	Indiana University Purdue University, Indianapolis Director, Informatics Research Institute, School of Informatics
1997 - 2006	Indiana University Purdue University, Indianapolis Chairman, Department of Computer and Information Science
1994 - 2001	Indiana University Purdue University, Indianapolis Associate Professor of Computer and Information Science
1988 - 1994	Indiana University Purdue University, Indianapolis Assistant Professor of Computer and Information Science
1987 - 1988	Indiana University Purdue University, Indianapolis Visiting Assistant Professor of Computer Science Concordia University, Montreal, Canada

Other Experience and Professional Memberships (short list)

2001	Reviewer, Bioinformatics
2001	Reviewer, IEEE Transactions on Neural Network
2002-2003	Reviewer, Bioinformatics
2006-	Editorial Board, International Journal of Data Mining and Bioinformatics, Inderscience
2005-2008	Bioinformatics Poster Chair for ACM SAC International Symposium
2004-2013	Bioinformatics Track co-chair for ACM SAC International Symposium
2010-2011	ACM International Symposium on Applied Computing, Program Co-Chair
2010	International Symposium in Biocomputing 2010, Program Co-Chair
2000-	Conference Programming Committee Member on various International Conferences.
2000-	NSF Panel review team (many times)
2013-2014	NIH/NIGMS Panelist

Honors

2013	Excellence in Service Recognition Award, Association of Computing Machinery SIGAPP
2000	Teaching Excellence Recognition Award, Community Learning Network
1998	Teaching Excellence Recognition Award, Computer & Information Science
1997	IUPUI, School of Science Teaching Award
1996	Professor of the Year Award, Computer Science Club
1995	Professor of the Year Award, Undergraduate Programs, Computer Science Club
1994	Professor of the Year Award, Computer Science Club
1989	National Science Foundation Research Initiation Award

C. Selected Peer-reviewed Publications (Selected from over 100 peer-reviewed publications)

1. Pradhan, M.P, Desai, A., and Palakal, M.J. Systems biology approach to stage-wise characterization of epigenetic genes in lung adenocarcinoma, *BMC System Biology* 2013, 7:141.
2. Mehrabi S, Schmidt M, Waters J, Beesley C, Krishnan A, Kesterson J, Dexter P, AL-Hadad MA, Tierny BW, Palakal M. An efficient pancreatic cyst identification methodology using natural language processing, *Studies in Health Technology and Informatics Vol. 192 MEDINFO 2013 - Proceedings of the 14th World Congress on Medical and Health Informatics* Pages 822 – 826, 2013.
3. Mehrabi S, Krishnan A, Tinsley E, Sligh J, Crohn N, Bush H, DePasquale J, Bandos J, Palakal M. Event Causality Identification Using Conditional Random Field in Geriatric Care Domain, *IEEE ICMLA* 2013.
4. M. Pradhan, K. A. Prasad, M. J. Palakal, A systems biology approach to the global analysis of transcription factors in colorectal cancer, *BMC Cancer*, 12:331, (2012).
5. M. Pradhan, K. Nagulapalli, M. J. Palakal, Cliques for identification of gene signatures for colorectal cancer across population, *BMC Systems Biology* 2012, 6(Suppl 3):S17.
6. M. Pradhan, Y. Pandit, L. Ledford, K. Nagulapalli, M. Palakal, A systems biology approach for understanding the miRNA regulatory network in colon rectal cancer, *International Journal of Data Mining and Bioinformatics* (in press, 2012).
7. D. Jhamb, N. Rao, D. Milner, F. Song, J. Cameron, D. L. Stocum and M. J. Palakal, Network Based Transcription Factor Analysis of Regenerating Axolotl Limbs, *BMC Bioinformatics*, 12:80, 2011.

8. M. Pradhan, L. Ledford, Y. Pandit, and M. Palakal, Global Analysis of miRNA Target Genes in Colon Rectal Cancer. *IEEE International Conference on Bioinformatics and Biomedicine*, Hong Kong, 2010.
9. Y. W. Webster, E. R Dow, J. Koehler, R. C. Gudivada, M. J. Palakal, Leveraging health social networking communities in translational research, *Journal of Biomedical Informatics*, 44(4):536-44, 2011.
10. Y. Webster and M. Palakal, A frame-work for Cross Disciplinary Hypothesis Generation, *ACM Symposium on Applied Computing*, Sierra, Switzerland, 2010.
11. P. Gandra, M. Pradhan, M. Palakal, Biomedical Association Mining and Validation, *ACM International Symposium on Biocomputing*, Calicut, 2010.
12. M. Pradhan and M. Palakal, Identifying CRC specific pathways and biomarkers from literature augmented proteomics data, *BIOCOMP 2010*, pp.323-329, 2010.
13. N. Rao, D. Jhamb, DJ. Milner, B. Li, F. Song, M. Wang, S. R. Voss, M. Palakal, M. W. King, B. Saranjami, LD Nye, JA Cameron, and DL. Stocum, Proteomic analysis of blastema formation in regenerating axolotl limbs, *BMC Biology*, 7:83, 2009. M. Pradhan, P. Gandra, M. Palakal, Predicting Protein-Protein Interactions Using First Principle Methods and Statistical Scoring, *ACM International Symposium on Biocomputing*, Calicut, 2010.
14. M. Palakal, P. Naidu, and S. Hartanto. A dynamic data integration model for biological databases, *International Journal of Data Mining and Bioinformatics*, Vol. 3, No. 1, pp. 40-54, 2009.
15. Y. Webster, R. Gudivada, E. Dow, J. Koehler and M. Palakal. A Hybrid Method to Discover and Rank Cross-domain Associations. *IEEE International Conference on Bioinformatics and Biomedicine*, Washington D.C., 2009.
16. M. Palakal, T. Sebastian and D. L. Stocum. Discovering implicit protein-protein interactions in the *Cell Cycle* using bioinformatics approaches, *Journal of Biomedical Science*, 15(3): 317-331, 2008.
17. Jiangang Liu, Andrew Campen, Shuguang Huang, Sheng-Bin Peng, Xiang Ye, Mathew Palakal, A Keith Dunker, Yuni Xia and Shuyu Li, *BMC Medical Genomics*, 1:39, 2008. (Highly Accessed).
18. M. Palakal, J. Bright, T. Sebastian, and S. Hartanto. A comparative study of cells in inflammation, EAE and MS using biomedical literature data mining, *Journal of Biomedical Science*, 14:67-85, 2007.
19. Y. Xia, A. Campen, D. Rigsby, Y. Guo, X. Feng, E. Su, M. Palakal, and S. Li. DGEM – A Microarray Gene Expression Database for Primary Human Disease Tissues, *Molecular Diagnosis & Therapy*, 11(3): 145-149, 2007.
20. Y. Dai, M. Palakal, S. Hartanto, X. Wang*, Y. Guo*. A Grid-Based Pseudo-Cache Solution for MISD Biomedical Problems with High Confidentiality and Efficiency. *International Journal of Bioinformatics Research and Applications*, 2(3): 259-281, 2006.
21. S. Mamidipalli, M. Palakal, and S. Li, OligoMatcher: analysis and selection of specific oligonucleotide sequences for gene silencing by antisense or siRNA, *Applied Bioinformatics*, 5(2): 121-124, 2006.
22. S. Mukhopadhyay, S. Peng*, R. Raje, J. Mostafa, M. Palakal. Distributed Multi-Agent Information Filtering: A Comparative Study. *Journal of the American Society for Information Science and Technology*. Vol.56, No.8, pp.834 - 842, 2005.

Amy Volda
School of Informatics and Computing
Indiana University, IUPUI

EDUCATION:

POSTDOCTORAL

University of California, Irvine

Oct 2009–Apr 2011

University of Calgary

Dec 2007–Sep 2009

GRADUATE

Georgia Institute of Technology

Ph.D., Human-Centered Computing

Aug 2008

Georgia Institute of Technology

M.S., Human-Computer Interaction

May 2001

UNDERGRADUATE

Arizona State University

B.A.E., Elementary Education

May 1999

APPOINTMENTS:

ACADEMIC

Indiana University, IUPUI
School of Informatics and Computing

Assistant Professor

Aug 2013 –Present

Indiana University, IUPUI
Lilly Family School of Philanthropy

Affiliate Assistant Professor

Dec 2013–Present

Cornell University
Dept. of Communication

Lecturer

Aug 2012–Jul 2013

University of California, Irvine
Dept. of Informatics

Assistant Project Scientist

May 2011–Aug 2012

PROFESSIONAL ORGANIZATION MEMBERSHIPS:

Association for Research on Nonprofit Organizations and Voluntary Action

Nov 2013–Present

Association for Computing Machinery

Nov 1999–Present

PROFESSIONAL HONORS AND AWARDS:

RESEARCH

*Best paper award nominee
(top 5% of submissions)

ACM SIGCHI Conference on Human
Factors in Computing Systems

May 2014

Best paper award nominee
(top 5% of submissions)

ACM SIGCHI Conference on Human
Factors in Computing Systems

May 2012

Best paper award nominee
(top 5% of submissions)

ACM SIGCHI Conference on Human
Factors in Computing Systems

May 2011

Best paper award nominee
(top 5% of submissions)

ACM Conference on Computer Supported
Cooperative Work

Nov 2008

Best paper award nominee

ACM SIGCHI Conference on Human

Apr 2005

(top 5% of submissions)

Factors in Computing Systems

TEACHING:

UNDERGRADUATE

<i>Course #</i>	<i>Short Title</i>	<i>Format</i>	<i>Role</i>	<i>Term</i>	<i>Enroll</i>	<i>Eval/Sch Avg</i>
*I305	Intro to Research in Informatics	Lecture	Instructor	Spr 2014	15	TBD
*I305	Intro to Research in Informatics	Lecture	Instructor	Fall 2013	17	3.03/3.52
INFO 4940	ICTs Across Sectors of Society	Lecture	Instructor	Spr 2013	1	
INFO 2450	Communication & Technology	Lecture	Instructor	Fall 2012	187	

GRADUATE

<i>Course #</i>	<i>Short Title</i>	<i>Format</i>	<i>Role</i>	<i>Term</i>	<i>Enroll</i>	<i>Eval/Sch Avg</i>
*I590	Collaborative and Social Computing	Lecture	Instructor	Spr 2014	16	TBD
INFO 6400	Intro to Research in HCI	Lecture	Instructor	Spr 2013	2	

MENTORING AND ADVISING:

Students at Indiana University, IUPUI unless otherwise noted.

GRADUATE RESEARCH ASSISTANTS

<i>Student (Degree)</i>	<i>Role</i>	<i>Dates</i>
*Leslie Filko (M.S. HCI)	Supervised research assistantship ~10 hours/week	Spr 2014–Present
*Shivin Saxena (M.S. HCI)	Supervised research assistantship ~10 hours/week	Fall 2013–Present
*Malvika Bansal (M.S. HCI)	Supervised research assistantship ~10 hours/week	Fall 2013–Present
Lynn Dombrowski (Ph.D. Informatics; University of California, Irvine)	Co-supervised doctoral research	Spr 2011–Aug 2012
Ellie Harmon (Ph.D. Informatics; University of California, Irvine)	Co-supervised doctoral research	Spr 2010–Fall 2011
Dane Bertram (M.Sc. CS; University of Calgary)	Co-supervised masters' thesis	Spr 2009

UNDERGRADUATE RESEARCH ASSISTANTS

<i>Student (Degree)</i>	<i>Role</i>	<i>Dates</i>
*Zheng Yao (B.S. Information Science; Cornell University)	Supervised research assistantship 5–10 hours/week	Spr 2013–Present
Myron Cotran (B.S. Information & CS; University of California, Irvine)	Supervised research assistantship ~10 hours/week	Sum 2010–Spr 2011
Alex Bretana (B.S. Information & CS; University of California, Irvine)	Supervised research assistantship ~10 hours/week	Sum 2010–Fall 2010

DOCTORAL DISSERTATION COMMITTEES

<i>Student (Degree)</i>	<i>Role</i>	<i>Dates</i>
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* In-rank activities are denoted with an asterisk throughout this document

INVITED PRESENTATIONS—RESEARCH

In addition to the following, all refereed conference publications were also given as invited presentations at the conference venue noted in each citation.

<i>Title</i>	<i>Venue</i>	<i>Date</i>
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	University North Carolina, Charlotte Department of Software and Information Systems	25 Mar 2013
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	Syracuse University School of Information Studies	8 Mar 2013
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	University of Maryland Baltimore County Department of Information Systems	2 Mar 2013
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	Indiana University School of Informatics and Computing, IUPUI	20 Feb 2013
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	Indiana University School of Informatics and Computing, Bloomington	18 Feb 2013
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	New Jersey Institute of Technology Department of Information Systems	11 Feb 2013
Shapeshifters and Bridge Builders: Information and Communication Technologies in the Nonprofit Sector	Cornell University Department of Communication	24 Sep 2012
Homebrew databases: Complexities of everyday information management in nonprofit organizations	University of California, Irvine Department of Informatics	27 May 2011
Group console gaming: Diversity, dynamics, and domestication	DePaul University College of Computing and Digital Media	11 Mar 2011
Group console gaming: Diversity, dynamics, and domestication	University of California, Irvine Department of Informatics	15 Jan 2010
Large displays in the home: Console gaming as a computational meeting place	SMART Technologies, Calgary, AB	10 Jul 2009
Exerting influence and enacting change: Human agency in human-computer interactions	IT University of Copenhagen Software Development Group	15 Jun 2009
Exerting influence and enacting change: Human agency in human-computer	Michigan State University Department of	3 Feb 2009

National Science Foundation	Panelist (Proposal Reviewer)	2009
INTERNATIONAL—CONFERENCE COMMITTEE SERVICE		
<i>Organization</i>	<i>Role</i>	<i>Dates</i>
*ACM SIGCHI Conference on Human Factors in Computing Systems	Associate Chair, Paper and Notes Program Committee	Sep 2013–Jan 2014
ACM SIGCHI Conference on Human Factors in Computing Systems	Judge, Student Research Competition	2011
ACM Conference on Computer Supported Cooperative Work	Associate Chair, Papers and Notes Program Committee	2011
ACM SIGCHI Conference on Human Factors in Computing Systems	Co-chair, Works-in-Progress Program Committee [Managed 44 ACs and 319 submissions, 57% acceptance rate]	2010
ACM SIGCHI Conference on Human Factors in Computing Systems	Judge, Student Research Competition	2010
ACM SIGCHI Conference on Human Factors in Computing Systems	Associate Chair, Papers and Notes Program Committee	2009
ACM SIGCHI Conference on Human Factors in Computing Systems	Associate Chair, Special Interest Groups Program Committee	2009
ACM Conference on Supporting Group Work	Associate Chair, Papers Program Committee	2007
ACM Conference on Computer Supported Cooperative Work	Publications Chair	2006
INTERNATIONAL—CONFERENCE REVIEWING		
<i>Publication Venue</i>		<i>Dates</i>
*ACM SIGCHI Conference on Human Factors in Computing Systems		2002–Present
ACM Conference on Computer Supported Cooperative Work and Social Computing		2004–Present
International Conference on Ubiquitous Computing		2006–Present
*ACM Conference on Designing Interactive Systems		2012–Present
*International Conference on Human-Computer Interaction with Mobile Devices and Services		2014–Present
American Medical Informatics Association Annual Symposium		2011
International Conference on Pervasive Computing		2007
Hawaii International Conference on System Sciences		2005–2009
ACM Symposium on User Interface Software and Technology		2005–2006

INTERNATIONAL—JOURNAL REVIEWING

Stephen Volda, Ph.D.

Department of Human-Centered Computing,
School of Informatics and Computing
Indiana University–Purdue University Indianapolis
535 W. Michigan Street, IT 475,
Indianapolis, IN 46202 USA
Office phone: (317) 278-7673
E-mail: svoida@iupui.edu
<http://stephen.volda.com>

EDUCATION:

POSTDOCTORAL

Cornell University	Information Science	2012–2013
University of Calgary	Computer Science	2007–2009

GRADUATE

Georgia Institute of Technology	Ph.D., Computer Science	Aug. 2008
Georgia Institute of Technology	M.S., Human–Computer Interaction	May 2001

UNDERGRADUATE

Arizona State University	B.S., Computer Science	Aug. 1999
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FURTHER EDUCATION:

FELLOWSHIPS

University of California, Irvine	CCC/CRA Computing Innovation Fellow	2009–2011
Georgia Institute of Technology	Marshall D. Williamson Fellow	2000

APPOINTMENTS:

ACADEMIC

Indiana University–Purdue University Indianapolis <i>School of Informatics and Computing</i>	Assistant Professor	2013–present
University of California, Irvine <i>Donald Bren School of Information and Computer Science</i>	Lecturer	2012
University of California, Irvine <i>Donald Bren School of Information and Computer Science</i>	Asst. Project Scientist	2009–2012
Georgia Institute of Technology <i>GVU Center, College of Computing</i>	Research Scientist	2001–2002

PROFESSIONAL MEMBERSHIPS:

*Association for Computing Machinery (ACM)	1998–present
*ACM Special Interest Group on Computer–Human Interaction (SIGCHI)	1998–present

In-rank activities and accomplishments are preceded with an asterisk () throughout this document*

TEACHING:**TEACHING ASSIGNMENTS:****UNDERGRADUATE**

<i>Course #</i>	<i>Short Title</i>	<i>Format</i>	<i>Role</i>	<i>Term</i>	<i>Enroll.</i>	<i>Eval (Sch. Avg)</i>
*INFO-I480	Expr Dsgn&Eval-Ubiquitous Comp	Lecture	Director	Spr 2014	10	
*INFO-I480	Expr Dsgn&Eval-Ubiquitous Comp	Lecture	Director	Fall 2013	11	3.59 (3.52)
<i>University of California, Irvine</i>						
INF148	Ubiquitous Comp Prototyp & Proj	Lecture	Director	Spr 2012	28	
<i>Georgia Institute of Technology</i>						
CS 1315	Intro to Media Computation	Recitation	Instructor	Fall 2004	25	
CS 1315	Intro to Media Computation	Recitation	Assistant	Fall 2003	25	

GRADUATE

<i>Course #</i>	<i>Short Title</i>	<i>Format</i>	<i>Role</i>	<i>Term</i>	<i>Enroll.</i>	<i>Eval (Sch. Avg)</i>
*INFO-I590	Topics in Informatics: Ubicomp	Lecture	Director	Spr 2014	22	
<i>Georgia Institute of Technology</i>						
CS 7470	Ubiquitous Computing	Lecture	Instructor	Fall 2006	4	
CS 4452	Human-Centered Comp Concepts	Recitation	Assistant	Fall 2004	6	

INVITED LECTURES/CLASS PRESENTATIONS

<i>Course #</i>	<i>Short Title</i>	<i>Presentation Format</i>	<i>Date</i>
*INFO-I305	Introduction to Research in Informatics	Invited research talk	Fall 2013
*INFO-H534	Seminar in Human-Computer Interaction	Invited research talk	Fall 2013
*INFO-I667	Seminar in Health Informatics I	Invited research talk	Fall 2013
<i>University of Calgary</i>			
Intro to Cocoa: A crash course in programming Macs, iPhones & iPod Touches		Research workshop	August 2009

MENTORING:**UNDERGRADUATE RESEARCH ADVISING**

<i>Student</i>	<i>Role</i>	<i>Dates</i>
*Joshua Ward	Advisor, INFO-I499 Research in Informatics (3 cr.)	Spr 2014
<i>University of California, Irvine</i>		
Sohrob Raja	Advisor, IN4MATX 199 Individual Study (3 cr.)	Spr 2012
<i>Georgia Institute of Technology</i>		
Umang Dua	Advisor, CS 4902 Spec. Prob. in Comp. Sci. (3 cr.)	2003
Chad Carpenter	Advisor, CS 4902 Spec. Prob. In Comp. Sci. (3 cr.)	2002

UNDERGRADUATE CAPSTONE/FINAL PROJECT COMMITTEES — by role

<i>Student</i>	<i>Role</i>	<i>Dates</i>
*Joshua Ward	Advisor, INFO-I494 Design & Dev of an Info System (3 cr.)	Spr 2014

GRADUATE RESEARCH ADVISING

<i>Student</i>	<i>Role</i>	<i>Dates</i>
*Alex Chambers	Supervisor, paid research assistantship (10 hr/wk)	Spr 2014–present
*Ryan Ahmed	Supervisor, paid research assistantship (10 hr/wk)	Fall 2013–present
*Xinxin He	Supervisor, paid research assistantship (10 hr/wk)	Fall 2013–present
*Ashleigh Young	Supervisor, paid research assistantship (5 hr/wk)	Fall 2013
<i>Cornell University</i>		
Mengxi Chi	Advisor, INFO 5900 Independent Research (3 cr.)	Spr 2013
Matthew Green	Advisor, INFO 5900 Independent Research (3 cr.)	Spr 2013
Andrew Wisnieff	Advisor, INFO 5900 Independent Research (3 cr.)	Spr 2013
<i>University of California, Irvine</i>		
Juan David Hincapie Ramos	Advisor, PhD student internship (3 mos.)	Fall 2010
<i>Georgia Institute of Technology</i>		
Rahul Nair	Advisor, CS 8903 Special Problems (3 cr.)	2003–2005
Ron Barbas	Advisor, CS 8903 Special Problems (3 cr.)	2001–2003

DOCTORAL DISSERTATION COMMITTEES — by role

<i>Student</i>	<i>Role</i>	<i>Dates</i>
*Romisa Rohani	Member, PhD committee	Fall 2013–present
*Moon Pil Sung	Member, PhD committee	Fall 2013–present

TEACHING ADMINISTRATION AND CURRICULUM DEVELOPMENT:

<i>Activity</i>	<i>Dates</i>
*Developed a new graduate course, INFO-I590: <i>Topics in Informatics: Ubiquitous Computing</i> . This course feature a significant reading seminar component, exposing students to a broad sampling of visioning, implementation, and application papers that have served to define the ubiquitous computing research domain, as well as a small-group research project component, where students will work in teams to design, implement, and/or evaluate the design of a novel ubiquitous computing system. High-quality final group project submissions may optionally be submitted as an interactive poster, demonstration, or video showcase submission to one of the top-tier international conferences for this style of research, including the ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp) or the ACM Symposium on User Interface Software & Technology (UIST).	Spr 2014
*Re-designed an existing undergraduate informatics course, INFO-I480: <i>Experience Design and Evaluation of Ubiquitous Computing</i> , which was previously focused on the design and usability evaluation of mobile computing systems. The new, lecture-based and project-centered course provides students with a more general overview of the various technologies implicated in the implementation of ubiquitous computing systems/environments, as well as introducing a sampling of sketching/prototyping and evaluation techniques employed by “ubicom” practitioners. Two major foci of the course are (1) training students to effectively communicate their design ideas to other designers and to potential system users, and (2) providing students experience in constructively critiquing their peers’ evolving system design concepts.	Fall 2013

RESEARCH/CREATIVE ACTIVITY:**GRANTS/FELLOWSHIPS IN RESEARCH:**

COMPLETED RESEARCH GRANTS/FELLOWSHIPS (5)

<i>Title</i>	<i>Granting Agency</i>	<i>Role</i>	<i>Amount</i>	<i>Dates</i>
*IU Overseas Conference Grant	IU OVPIA	PI	\$800	July 2013–Sep. 2013
MoodRhythm: Supporting Individuals with Bipolar Disorder to Establish Stable and Regular Daily Routines	Cornell University Bronfenbrenner Center for Translational Research	Co-PI	\$12,000	May 2013–Apr. 2014
Activity-Awareness Everywhere: A Smartphone Infrastructure for Studying and Supporting Ubiquitous Multitasking in Everyday Work	Google Research	Co-PI	\$60,000	Jun. 2011–May 2012
Changing Multitasking in the Workplace: Improving Efficiency, Productivity, and Self-Initiative	U.S. Army Natick Soldier Research, Development & Engineering Center	Co-I	\$25,000	Jun. 2010–May 2011
CCC/CRA Computing Innovation Fellowship	CCC/CRA, in conjunction with NSF CNS award #0937060	PI	\$267,500	Oct. 2009–Sep. 2011

PENDING RESEARCH GRANTS AND FELLOWSHIPS (2)

<i>Title</i>	<i>Granting Agency</i>	<i>Role</i>	<i>Amount</i>	<i>Dates</i>
*CHS:Small:Exploring the Relationships Among Contextual Metadata, Personal Information Management, and Information Overload	NSF (CISE/IIS)	PI	\$499,694	Jan. 2015-Dec. 2017
*Microsoft Research Faculty Fellowship	Microsoft	PI	~\$200,000	July 2014

INVITED PRESENTATIONS – RESEARCH

LOCAL

<i>Title</i>	<i>Organization</i>	<i>Date</i>
Understanding and mitigating information overload: From personal to ubiquitous computing	Informatics Seminar, School of Informatics and Computing at IUPUI	Feb. 2013

REGIONAL

<i>Title</i>	<i>Organization</i>	<i>Date</i>
Understanding and mitigating information overload: From personal to ubiquitous computing	Colloquium Series, School of Informatics and Computing, Indiana University at Bloomington	Feb. 2013

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Huanmei Wu	POSITION TITLE Assistant Professor of Computer and Information Technology Assistant Professor of Informatics		
eRA COMMONS USER NAME (credential, e.g., agency login) HUANWU1			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Tsinghua University, Beijing China	B.S.	06/96	Chemistry
University of Texas, Houston, Texas		05/99	Biomedical Science
Northeastern University, Boston, MA	MS	06/03	Computer Science
Northeastern University, Boston, MA	PhD	08/05	Computer Science

A. Personal Statement

Dr. Huanmei Wu the leading primary director for the proposed R25 Research and Education Program. She is an Associate Professor at Purdue School of Engineering and Technology, Indiana University Purdue University (IUPUI), joint with School of Informatics, Indiana University. She also holds adjunct positions in the Department of Electrical and Computer Engineering @ School of Engineering and Technology, Department of Computer and Information Science @ School of Sciences, Department of Radiation Oncology @ Indiana University School of Medicine, and School of Health Sciences at Purdue University.

Dr. Wu's expertise is multidisciplinary research, focusing on the application of the engineering principles and advanced technology to bio-medical research. Her research topics cover database management, data mining, medical physics, radiation oncology, medical imaging processing, database security, biomedical science, digital forensics, pattern recognition, and others. Special focuses are on image guided cancer radiation treatment, scientific databases, and dynamic data management.

The overall goal of the educational program is to empower the next generation of biomedical big data scientists with the array of knowledge and skills needed to be successful in an academic career. Dr. Wu has been teaching related courses in the last nine years. Sample courses include Advanced Database Topics, Health Information Technology, Data Mining and Warehousing, Database Administration, DB Implementation & Programming, Intro to Data Management, Mathematical & Logical Foundations, Translational Bioinformatics Applications, Information Representation, Mathematical foundation of Informatics, and Statistical Methods for Bioinformatics.

As the primary investigator or co-Investigator on several previous funded grants, Dr. Wu has paved the way to lead the proposed program. Dr. Wu also has rich experience in proficient project management and effective collaboration among researchers from versatile backgrounds. These previous experience will help the proposed education and research program in biomedical big data management. In short, the diverse background and previous experience of Dr. Wu promises the success to the proposed program.

B. Positions and Honors

Academic Positions

2005-2011	Assistant Professor, Computer and Information Technology Purdue School of Engineering and Technology, IUPUI Indiana University School of Informatics, Indianapolis, IN (<i>joint appointment</i>)
2006-present	Adjunct Assistant Professor, Electrical and Computer Engineering

2006-present	Purdue School of Engineering and Technology, IUPUI, Indianapolis, IN Adjunct Assistant Professor School of Health Sciences, Purdue University, West Lafayette, IN
2006-present	Adjunct Assistant Professor Department of Computer and Information Science, School of Science, IUPUI, Indianapolis, IN
2010-present	Adjunct Assistant Professor Department of Radiation Oncology, School of Medicine Indiana University, Indianapolis, IN
2011-present	Associate Professor, Computer and Information Technology Purdue School of Engineering and Technology, IUPUI Joint with Indiana University School of Informatics
2013-present	Program Director of Bioinformatics, Department of BioHealth Informatics Indiana University School of Informatics

Hospital Employment

2003-2005	Research Fellow, Radiation Oncology Massachusetts General Hospital, Harvard Medical School, Boston, MA
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Professional Memberships

2004-present	ACM Special Interest Group on Management of Data (SIGMOD)
2006-present	The American Association of Physicists in Medicine (AAPM)
2007-present	American Society for Therapeutic Radiology and Oncology (ASTRO)
2010-present	American Society for Engineering Education (ASEE)
2010-present	Association for Computing Machinery (ACM)
2010-present	Institute of Electrical and Electronics Engineers (IEEE)

Honors

2004	Outstanding Graduate Research Award Northeastern University, Boston, MA
2007	Best MURI Research Team Award (as PI), Indiana University Purdue University Indianapolis, IN
2008	First Runner-up for Best MURI Research Team Award (as PI), Indiana University Purdue University Indianapolis, IN
2010	Best Abraham M. Max Distinguished Professor Award for Outstanding Research Indiana University Purdue University Indianapolis, IN

C. Selected Peer-reviewed Publications (Students co-authors are marked with *.) (in chronological order)

1. **Wu, H.**, Sharp, G.C., Salzberg, B., Kaeli, D., Shirato, H., and Jiang, S.B., (2004) *A finite state model for respiratory motion analysis in image guided radiation therapy*. Phys Med Biol, 49(23): p. 5357-72.
2. **Wu, H.**, Salzberg, B. and Zhang D. (2004) *Online Event Driven Subsequence Matching over Financial Data Streams*, Proceeding of the ACM SIGMOD, 23-34.
3. **Wu, H.**, Salzberg, B., Sharp, G.C., Jiang, S.B., Shirato, H., and Kaeli, D. (2005) *Subsequence matching on structured time series data*. Proceeding of the ACM SIGMOD, 682-693.
4. **Wu, H.**, Sharp G., Zhao Q.*, Shirato H. and Jiang S. (2007) *Statistical analysis and correlation discovery of tumor respiratory motion*, Phys. Med. Biol. 52. 4761-4774.
5. **Wu H.**, Zhao Q.*, Berbeco R., Nishioka S., Shirato H., Jiang S B. (2008) *Gating based on internal/external signals with dynamic correlation updates*, Physics in Medicine & Biology. 53, 7137–7150

6. Verma P., **Wu, H.**, Langer M., and Das IJ. (2010) *Review of Real-time tumor motion prediction for Image Guided Radiation Treatment*, Computing in Science and Engineering, 02 Aug. 2010.
7. Kalet A.*, Sandison G., **Wu H.**, Schmitz R. (2010) *A state-based probabilistic model for tumor respiratory motion prediction*, Phys. Med. Biol. 55, 7615.
8. Zhao Q*, **Wu, H.**, Wolanski M, Pack D, Johnstone P A S, Das IJ (2010) *A sector-integration method for dose/MU calculation in a uniform scanning proton beam*, Phys. Med. Biol. 55, N87–N95.
9. Pepin E.*, **Wu, H.**, Sandison G., Langer M., Shirato H., (2010) *Site-specific volumetric analysis of lung tumor motion*, Phys. Med. Biol, 3325-3337.
10. Pepin, E*, **Wu, H.**, Zhang Y, Lord B, (2011) *Correlation and prediction uncertainties in the CyberKnife Synchrony respiratory tracking*, Med. Phys. 38, 4036-4044.
11. Zhao Q*, **Wu, H.**, Cheng, CC, Das, IJ, (2011) *Dose monitoring and output correction for the effects of scanning field changes with uniform scanning proton beam*, slated for Medical Physics, 38 (8), 2011.
12. **Wu, H.**, Zhao, Q.*, Cao M, Das I, (2012) *A line-profile based double partial fusion method for acquiring planning CT of oversized patients in radiation treatment*, Journal of Applied Clinical Medical Physics, Vol 13, Number 2, Pages 20-31.
13. Yan, R.*, Dang, C., **Wu, H.**, ChiCanBank: (2012) *A Chinese Cancer Tissue Bank Management System*, in the proceeding of 25th International Conference on Computers and Their Applications in Industry and Engineering (CAINE-2012), p. 127-132.
14. Pepin E*, **Wu, H.**, Shirato, H., (2013) *Use of dMLC for implementation of dynamic respiratory-gated radiation therapy*, Med. Phys. 40, 101708:1-5;
15. **Wu, H.**, Besemer, A.*, Lu, M., (2014) *Dynamic Correlation of Synchronized Internal Tumor and External Skin Respiratory Motion for Image Guided Lung Cancer Radiation Treatment*, International Journal of Computer Applications (IJCA), Vol. 21, No. 1, pages 14-23.

D. Research Support

1. R21 1R21CA130849-01
 Role: PI 08/15/08-07/31/11
 Title: Lung Tumor Motion Behavior Analysis Using 4DCT
 Description: To parameterize tumor motion characteristics, analyze patient breathing behavior and predict tumor respiratory motion using a hidden Markov model for IGRT.
2. Award from PerkinElmer Medical Imaging
 Role: PI 04/01/11-03/31/15
 Title: Real-time 4D Respiratory Motion Tracking and Management using TiGRT IVS System for Image Guided Proton Radiotherapy
 Description: To perform feasibility study and to acquire the preliminary data for real-time image guided proton radiotherapy (IMPT), which will track the 4D respiratory motion of the targets (including tumor, critical organs and healthy tissues) using the TiGRT IVS System.
3. Award from Varian Medical System, Inc.
 Role: PI 11/01/2011-12/31/2014
 Title: Optimization of 4D Proton Treatment Planning with Interplay Effects
 Description: To develop a software infrastructure which is not only capable of evaluating the interplay effects on proton dose distribution by integrating real-time tumor respiratory motion and the dynamic beam delivery mechanism of energy layer stacking, but also allowing optimization of 4D proton planning and the temporal beam delivery under gated respiration or un-gated proton treatment to minimize the motion induced dosimetric effects.

Jingfeng Xia, Ph.D.

Department of Library and Information Science, Indiana University

755 W. Michigan Street, UL 3100N, Indianapolis, IN 46202

Phone: 317-225-9262 • Email: xiaji@iupui.edu

EDUCATION

Ph.D., 2001 (Anthropology)

University of Arizona, Tucson, AZ

MA, 2005 (Information Resources & Library Science)

University of Arizona, Tucson, AZ

MA, 1985 (History)

Peking University, Beijing, China

BA, 1982 (Archaeology)

Peking University, Beijing, China

OTHER TRAINING

Geographic Information Systems, 2003

University of Calgary, Calgary, AB

Relational Database Management, 1998

Pima College, Tucson, AZ

EMPLOYMENT HISTORY

Assistant/Associate Professor, Indiana University

1/2008 – Present

Social Science Librarian, Dana Library, Rutgers University

2/2006 – 12/2007

Metadata Librarian, University of Florida Libraries

9/2005 – 1/2006

Database Programmer, Imation Company, Tucson

1/2002 – 8/2002

Database Programmer, Weiser Lock Company, Tucson

9/2000 – 12/2001

Research Associate, Anthropology, University of Arizona

6/1999 – 8/2000

Curatorial Assistant, Arizona State Museum, Tucson

8/1997 – 5/1999

PUBLICATIONS

Edited Book and Book Chapters

1. Jingfeng Xia (2011), "Open access for archaeological literature: a manager's perspective," in *Archaeology 2.0: New Approaches to Communication & Collaboration*, edited by E.C. Kansa, S.W. Kansa and E. Watrall, Costen Digital Archaeology Series, Los Angeles: University of California, pp. 233–249.
2. Jingfeng Xia (2009), "Electronic publishing in archaeology," in *The State of Scholarly Publishing: Challenges and Opportunities*, edited by A. N. Greco. Transaction Publishing, New Brunswick, NJ, pp. 147–162.
3. Jingfeng Xia (2008), *Scholarly Communication in China, Japan, Korea and Taiwan*. Chandos Publishing Ltd. Oxford, UK (Favorably reviewed in *The Electronic Library* and *International Journal of Legal Information*).
4. Jingfeng Xia (2008), "Scholarly communication in China," in *Scholarly Communication in China, Japan, Korea and Taiwan*, edited by J. Xia, Chandos Publishing Ltd. Oxford, UK, pp. 1–40.

5. Jingfeng Xia and Mei-Mei Wu (2008), "Scholarly communication in Taiwan," in *Scholarly Communication in China, Japan, Korea and Taiwan*, edited by J. Xia, Chandos Publishing Ltd. Oxford, UK, pp. 123–145.

Journal Articles

In Process

6. Jingfeng Xia, "'Predatory' journals and their article processing charges," *Journal of the Association for Information Science & Technology*, under review.
7. Jingfeng Xia, "An examination of two mega journals," *Learned Publishing*, under review.
8. Jingfeng Xia, "Two scholarly communities," *Learned Publishing*, under review.
9. Jingfeng Xia and Lydia C. Spotts, "Ethnographic observation in library and information science: an adapted method," *Journal of Academic Librarianship*, under review.

Published or Accepted (Referred)

10. Jingfeng Xia and Minglu Wang, "Competences and responsibilities of social science data librarians: An analysis of job descriptions," *College & Research Libraries*, forthcoming.
11. Jingfeng Xia, Jennifer L. Harmon, Kevin G. Connolly, Heather A. Howard, Mary R. Anderson and Ryan M. Donnelly, "Who published in 'predatory journals'?" *Journal of the Association for Information Science & Technology*, accepted.
12. Jingfeng Xia, "A content analysis of tweets for MOOC experience," *Ubiquitous Learning: An International Journal*, forthcoming.
13. Jingfeng Xia (2013), "The open access divide," *Publications: Open Access - A Review after 10 Years*, vol. 1, no. 3, pp. 113-139.
14. Jingfeng Xia (2013), "Mandates and the contributions of open genomic data," *Publications: Open Access - A Review after 10 Years*, vol. 1, no. 3, pp. 99-112.
15. Jingfeng Xia (2013), "Commenting on Western open courses by Chinese learners," *Journal of Studies in International Education*, vol. 17, no. 4, 277–297.
16. Jingfeng Xia and Carly Zimmerman (2013), "An overview of MOOC development," *Lecture Notes in Management Science*, vol. 17, pp. 83–90.
17. Jingfeng Xia (2013), "Let's take a Yale open course: a Chinese view of open educational resources provided by institutions in the West," *Journal of Computer Assisted Learning*, vol. 29, no. 2, pp. 122–137.
18. Jingfeng Xia and Ying Liu (2013), "Usage patterns of open genomic data," *College & Research Libraries*, vol. 74, no. 2, pp. 195–207.
19. Jingfeng Xia (2012), "Cooperative efforts for institutional repositories in the United States," *Proceedings of the Third Session of International Academic Conference about Library Regional Cooperation and Resource Sharing*, October 2012, Beijing, China, pp. 12–19.
20. Jingfeng Xia (2012), "Positioning open access journals in a LIS journal ranking," *College & Research Libraries*, vol. 73, no. 2, pp. 134–145.
21. Jingfeng Xia, Sarah B. Gilchrist, Nathaniel X.P. Smith, Justin A. Kingery, Jennifer R. Radecki, Marcia L. Wilhelm, Keith C. Harrison, Michael L. Ashby and Alyson J. Mahn (2012), "A review of open access self-archiving mandate policies," *portal: Libraries and the Academy*, vol. 12, no. 1, pp. 85–102.

42. Jingfeng Xia (2005), "Locating library items by GIS technology," *Collection Management*, vol. 30, no. 1, pp. 63–72.
43. Jingfeng Xia (2004), "Library space management: A GIS proposal," *Library Hi Tech*, vol. 22, no. 4, pp. 375–382 (Favorably review in *Library Hi Tech*).
44. Jingfeng Xia (2004), "Using GIS to measure in-library book-use behavior," *Information Technology and Libraries*, vol. 23, no. 4, pp. 184–191.
45. Jingfeng Xia (2004), "GIS in the management of library pick-up books," *Library Hi Tech*, vol. 22, no. 2, pp. 209–216.

Published (Non-Referred)

46. Jingfeng Xia (2009), "Extreme human powered Web search: Renrou," *Online*, vol. 33, no. 1, pp. 33–36.

Conference Presentations

1. Invited Speech: "Open access journal publishing and role of libraries," National Central Library of Taiwan, Taipei, Taiwan, November, 2013.
2. Virtual Presentation: "A Content Analysis of Tweets for MOOC Experience," *Sixth International Conference on e-Learning and Innovative Pedagogies*, Madrid, Spain, November, 2013.
3. Presentation: "An overview of MOOC development," *International Conference in Economics, Business Management and Education Innovations*, Beijing, May 22-23, 2013.
4. Invited Speech: "Challenges and opportunities of academic libraries in the United States," Renmin University of China Library, Beijing, November 23, 2012.
5. Discussant: Session topic – "Information exchange and behavior in the environment of new technologies," *Doctoral Students Colloquium on Library, Information Science and Documentation*, Business School of Nankai University, in Tianjin, November 17, 2012.
6. Presentation: "The new trends of big data in the United States" at the *Doctoral Students Colloquium on Library, Information Science and Documentation*, Business School of Nankai University, in Tianjin, November 17, 2012.
7. Presentation: "Competences and responsibilities of social science data management & services in academic libraries" at the *International Conference on Change and Challenge: Redefine the Future of Academic Libraries and the Pacific Rim Digital Library Alliance 2012 Annual Meeting*, in Beijing, November 4, 2012.
8. Presentation: "Cooperative Efforts for Institutional Repositories in the USA" at the *3rd International Conference on Library Cooperation and Resource Sharing*, in Beijing, November 2, 2012.
9. Poster: "The practices of open educational resources in China," at the *Berlin 9 Open Access Conference*, Washington, D.C., November 2011.
10. Presentation with Ying Liu: "Usage of open data repositories: the case of genomic dataset," at the *International Workshop on Global Collaboration of Information Schools*, Beijing, October 2011.
11. Invited Speech: "Open access: Its achievements and challenges," Department of Information Resources Management, Nankai University, June 2011.

AWARDS:

Overseas Conference Award (\$1,500)	Indiana University	2012
Revitalization of the Indiana Chapter (\$1,500)	ASIS&T	2011
Faculty Travel Awards (various amounts)	School of Lib & Info Science	2008 – 2013
Trustee's Teaching Award (\$2,000)	Indiana University	2009
Haury Funds of Anthropology (\$1,500)	University of Arizona	1998 – 2000
Wenner-Gren Fellowships (\$30,800)	Wenner-Gren Foundation	1994 – 1997
National Social Science Research Award	Dept. of Education of China	1985

TEACHING:

Course#	Title	Format
S501	Reference	Online
S522	Social Science Information	Classroom/Online
S604	Data Management	Classroom
S604	Scholarly Communication	Online
S541	Information Policy	Classroom
S506	Introduction to Research	Classroom
S605	Internship	
S601	Directed Readings	
Non-credit	Chinese Civilization	Lecture (Confucius Institute)
Non-credit	Modern Chinese History	Lecture (Confucius Institute)

MENTORING

Advising more than fifty graduate students

PROFESSIONAL ACTIVITIES:**JOURNAL EDITORIAL BOARD**

<i>International J. of Information Science</i>	Scientific & Academic Publishing	2011 – Present
<i>Asian J. of Information Management</i>	Academic Journals Inc.	2006 – 2012
<i>Infopreneurship J.</i>	Paikal	2012 – Present

AWARD REVIEW

Research Grant Competition	ALISE	2010
Evaluation on Tenure and Promotion Dossier	Ohio State University Library	2011

JOURNAL AND CONFERENCE REVIEW

<i>Journal of American Society for Information Science & Technology</i>	Peer-reviewed Journal
<i>College & Research Libraries</i>	Peer-reviewed Journal
<i>Asian Journal of Information Management</i>	Peer-reviewed Journal
<i>British Journal of Applied Science and Technology</i>	Peer-reviewed Journal
<i>Journal of Library and Information Science</i>	Peer-reviewed Journal
<i>The Internet and Higher Education</i>	Peer-reviewed Journal
<i>International Journal of Information Science</i>	Peer-reviewed Journal

Liugen Zhu

Indiana University, Indianapolis
School of Informatics and Computing
Email: louizhu@iupui.edu Phone: 317-278-9536

EDUCATION

University of Illinois in Springfield	MS in Computer Science	05/2003
University of Illinois at Urbana-Champaign	Ph.D. in Food Science	05/2001
Nanjing Agricultural University, China	BS in Horticulture	09/1985

FACULTY APPOINTMENTS

Indiana University School of Informatics and Computing	Lecturer	08/2009 – Present
Vincennes University, Indiana	Associate Professor	08/2004 – 07/2009
Vincennes University, Indiana	Assistant Professor	08/2002 – 07/2004
Nanjing Agricultural University, China	Lecturer	09/1985 – 03/1995

PROFESSIONAL CERTIFICATIONS

Microsoft Certified Database Administrator (MCDBA)
Microsoft Certified Systems Administrator (MCSA)
Microsoft Certified Professional (MCP)
Sun Certified Programmer for Java2 Platform (SCJP)
Adobe Certified Associate – Web Communication using Dreamweaver CS3
Adobe Certified Associate – Rich Media Communication using Flash 8

PROFESSIONAL ORGANIZATION MEMBERSHIPS

Association for Computing Machinery	08/2009 – Present
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TEACHING ASSIGNMENTS

Mathematical Foundation of Informatics	Indiana University, Indianapolis
Information Infrastructure I	Indiana University, Indianapolis
Information Infrastructure II	Indiana University, Indianapolis
Applications of Data Mining	Indiana University, Indianapolis
Database Design for HIA	Indiana University, Indianapolis
Organizational Informatics	Indiana University, Indianapolis
Building New Youtube	Indiana University, Indianapolis
Introduction to Java Programming	Vincennes University, Indiana
Advanced Visual Programming	Vincennes University, Indiana
ASP.NET	Vincennes University, Indiana
PHP and MySQL	Vincennes University, Indiana
Advanced Web Page Design	Vincennes University, Indiana
Database Management/SQL	Vincennes University, Indiana

Katherine Schilling

PROFESSIONAL EXPERIENCE

Academic Degrees

- 2002 Ed.D. Doctor of Education
Boston University
School of Education Department of Administration, Training & Policy Studies
Concentration in higher education administration
Boston, MA
Magna Cum Laude
- 1988 M.L.S. Master of Library Science
University of Pittsburgh School of Library and Information Science
Pittsburgh, PA
Suma Cum Laude
- 1986 B.A. Bachelor of Arts in English and Secondary Education
Susquehanna University
Selinsgrove, PA
Cum Laude

Licensure and Certification

Academy of Health Information Professionals (AHIP)
Senior Member (2001 - present)
Member (1995 - 2000)

K - 12 School Library Media
Commonwealth of Pennsylvania, State of Maryland

7 -12 Secondary English
Commonwealth of Pennsylvania, State of Maryland

Academic Appointments and Responsibilities

- 2011 - present Associate Professor of Library and Information Science
Indiana University School of Library and Information Science, Indianapolis, IN
- ALA accredited for the masters in library science
 - Developed funded school-wide leadership programming
 - Participated in all activities for 2012 reaccreditation
 - Expanded online courses and online MLS degree opportunities
 - Attended 2012 National Institutes of Health Summer mHealth Institute

2004 - 2010	Assistant Professor of Library and Information Science
2006 - present	Director, Master of Library Science / Master of Science in Health Informatics Dual Degree Program • Developed, established strategic direction, and direct SLIS dual degree program • Created three new courses: S644 Consumer Health Informatics, S604 Information Resources for Health Consumers in Public Libraries, S604 Knowledge Management for Evidence Based Practice • Transformed existing course (S653 Health Sciences Librarianship) for delivery through the Virtual Indiana Classroom poly-communications system, and later for online deliver
2011 - 2012	Director, 21st Century Leadership Skills Program Partnership of the Indiana University School of Library and Information Science and the U.S. Institute for Museum and Library Services • Established program and managed all activities including conducting and research activities, creating and teaching an online leadership course, supervising one course instructor and one graduate assistant, coordinating student conference presentations, supervising 23 students' part-time internships, managing budget, etc.
2007 - 2009	Director, Career Transitions Executive Leadership Program Partnership of the Indiana University School of Library and Information Science, Indiana State Library, Indiana Library Federation, and U.S. Institute for Museum and Library Services • Established program and managed all activities including supervising 15 students' full-time 'residencies', conducting research activities, creating and teaching an online leadership course, supervising one graduate assistant, managing \$674,000.00 budget, etc.
2005 - present	Associate Professor of Nursing (<i>adjunct appointment</i>) Indiana University School of Nursing Department of Environments for Health Indianapolis, IN
2006 - present	Associate Professor of Informatics (<i>adjunct appointment</i>) Indiana University School of Informatics Indianapolis, IN

Research Appointments

2006 - present	Member, Indiana University Simon Cancer Center (IUSCC) Indianapolis, IN
2007 - present	Research Scientist, Walther Cancer Institute Indianapolis, IN
2008 - present	Research Scientist, Regenstrief Institute, Indianapolis, IN

HONORS AND AWARDS

2012	National Institutes of Health (NIH) Mobile Health (mHealth) Institute July 29 - August 3, 2012 Boston, MA (Competitive selection process)
2009	Medical Library Association (MLA) Winner, Leader's Grant
2009	Association for Library and Information Science Education (ALISE) Best Conference Paper Award http://www.alise.org/mc/page.do?sitePageId=54781&orgId=ali
2007	Society for General Internal Medicine (SIGM) Best Research Award http://www.sgim.org/userfiles/file/AMHandouts/AM07/handouts/CEU.pdf
2006	American Medical Informatics Association (AMIA) Informatics Year in Review Best Research Award
2005	International Association for the Distribution of the Information Society (IADIS) Best Conference Paper Award
2004	Medical Library Association (MLA) Annual Research Award http://research.mlanet.org/awards04.html
1988 - present	Beta Phi Mu International Library Science Honor Society
1986 - present	Pi Gamma Mu Honor Society of the Social Sciences
1986 - present	Pi Lambda Theta International Honor and Professional Association in Education

SERVICE TO THE PROFESSION

Offices and Editorial Positions

2012 - 2013	President, Midwest Chapter, Medical Library Association
2011 - 2012	President Elect, Midwest Chapter, Medical Library Association
2011 - present	Editorial Board, <i>Asian Journal of Information Science and Technology</i>
2007 - 2011	Editorial Board, <i>Journal of the Medical Library Association</i>
2009	Associate Editor, <i>Journal of the Medical Library Association</i> Reviewed manuscripts (1 - 4 per month), made publication decisions, corresponded with authors, edited and prepared accepted manuscripts for publication (1 per month)

Dates or Semester	Institution/School/Course	Topic
September 1, 2001	Boston Medical Center, Department of Pediatrics, <i>Pediatric Ambulatory Care Resident Training Program</i>	Beginners' Searching for Cochrane and the EBM Databases
May 21, 2001	Boston Medical Center, Department of Pediatrics, <i>Pediatric Ambulatory Care Resident Training Program</i>	Introduction to MEDLINE Searching: the OVID Interface
March 26, 2001	Boston Medical Center, Department of Pediatrics, <i>Pediatric Ambulatory Care Resident Training Program</i>	Information Resources for Evidence Based Practice
February 26, 2001	Boston Medical Center, Department of Pediatrics, <i>Pediatric Ambulatory Care Resident Training Program</i>	Introduction to Evidence Based Practice: Gold Standard Resources for Pediatric Ambulatory Care
Fall 1998	Simmons College Graduate School of Library Science, Boston, MA <i>LS 434 Medical Librarianship</i>	Introduction to Educational Programs in Academic Health Sciences Libraries
Fall 1998 - 2000	Simmons College Graduate School of Library Science, Boston, MA <i>LS 407 Reference/Information Services</i>	Internet Reference Resources and Services

CREATIVE RESEARCH ACTIVITIES

Research Grants and Contracts

- o 15 grant and contract applications submitted, 10 funded (*as of Nov. 2012*)
- o PI or co-PI on funded grants or contract totaling \$1,050,000.00
- o Total funding achieved: \$1,520,000.00
- o Continuously funded since 2007 at 20% - 55% FTE

2013 - 2014	Project: Web-based Ostomy Self-Management Intervention Role: Co-PI Amount: \$75,000.00 Funder: Indiana University Collaborative Research Grants (IUCRG) (<i>submitted</i>) Collaborators: Indiana University Schools of Library and Information Science, Nursing, Informatics
2012 - 2013	Project: WECare: Web-Enabled Support for Cancer Caregivers Role: Investigator; Project Manager; Lead for usability, testing, and evaluation Amount: \$250,000.00 (Indiana University Sub-Contract: \$145,000.00) Funder: WellPoint Foundation Collaborators: Indiana University Schools of Library and Information Science, Nursing, Informatics; WellPoint, Inc.; Michigan State University; National Family Caregivers Association; CancerCare, Inc.

- 2010 - 2012 **Project:** 21st Century Leadership Skills Program (a re-visioning of CTCLP, below)
Role: PI
Amount: \$330,000.00
Funder: U.S. Institute for Museum and Library Services (IMLS), Laura Bush 21st Century Library Program
Collaborators: Indiana University School of Library and Information Science, Association for Library and Information Science Students
- 2009 **Project:** Self-Management Support Guidance for Primary Care Clinicians and Patients
Role: Co-PI
Amount: \$450,000.00 (*not funded*)
Funder: U.S. Department for Health and Health Services, Agency for Healthcare Research and Quality, Regenstrief Foundation, U.S. Department of Defense
Collaborators: Purdue University Discovery Park Cancer Care Engineering initiative; Regenstrief Institute; Indiana University Center for Health Services and Outcomes Research, School of Medicine, School of Library and Information Science; Indiana Office of Medicaid Planning and Policy
- 2007 -2009 **Project:** Career Transitions Executive Leadership Program (CTCLP)
Role: PI
Amount: \$674,195.00
Funder: U.S. Institute for Museum and Library Services (IMLS), Laura Bush 21st Century Library Program
Collaborators: Indiana University School of Library and Information Science, Indiana State Library, Indiana Library Federation
- 2008 - 2009 **Project:** Investigation of a Best Practice: Process Flow and Navigation for Colorectal Cancer Patients with Psychosocial Distress
Role: Co-PI
Amount: \$123,663.00
Funder: Regenstrief Foundation (NY, NY)
Collaborators: Indiana University School of Library and Information Science, Regenstrief Institute, Purdue University Discovery Park Cancer Care Engineering initiative
- 2008 - 2010 **Project:** Cancer Information-Seeking Needs and Behaviors of the Indiana University Simon Cancer Center Information Portal Users
Role: PI
Amount: \$25,000.00
Funder: Walther Cancer Institute, Mary Margaret Walther Program for Cancer Care Research, Indianapolis, IN
Collaborators: Indiana University School of Library and Information Science, School of Nursing, School of Medicine
- 2008 **Project Title:** Usability Testing for Enhancing User's Experience in the IUCC TRAIN Web Portal
Role: PI
Amount: \$25,000.00 (*not funded, resubmission funded*)

Collaborators: U.S. National Library of Medicine, American Association of Health Sciences Libraries, Boston University Medical Center Library

2002 - 2004

Project: Mental Health Information Network

Project URL: <http://mhin.bu.edu/index.cfm>

Role: Educational programming consultant

Collaborators: Boston University Medical Center Library, Boston Department of Mental Health, Commonwealth of Massachusetts Department of Mental Health

Invited Scientific Presentations and Posters

1. **Schilling K.** A Case Study in Applied Biomedical Informatics: Developing, Funding, Licensing, and Managing the WECare Intervention. Indiana University School of Library and Information Science Brown Bag Series, Doctoral Student Forum; 2012 Apr 26; Bloomington, IN
2. **Schilling, K.** The Impact of Disease on Information Seeking, Use and Social Networking: Chronic Disease Models from HIV/AIDS to Breast Cancer. Indiana University School of Library and Information Science Brown Bag Series, Association of Library and Information Science Students; 2011 Mar 4; Indianapolis, IN.
3. Abrahamson K, Najjar N, **Schilling K**, Losee L, Norton K, Doebbeling CC. A Positive Deviance Approach to Improving the Quality of Psychosocial Care for Cancer Patients. Paper presented at: Cancer Research Day. Indiana University Simon Cancer Center; 2009 May 6; Indianapolis, IN.
4. McDaniel A, Newlon C, Stratton R, Givens C, Palakal M, Helft P, Loehrer P, **Schilling K**, Faiola A. Using Web-based Technology to Meet the Information Needs of Colon Cancer Patients. Paper presented at: IUPUI Research Day; 2009 Apr 24; Indianapolis, IN.
5. **Schilling K.** Education for Health Sciences Librarianship: Directions and Challenges. Paper presented at: Annual Meeting of the Indiana Health Sciences Library Association (IHSLA); 2008 Apr 11; Indianapolis, IN.
6. **Schilling K.** Using Outcomes-Based Evaluation for Planning and Assessing Educational Programs in Hospital Libraries. Paper presented at: Health Information Literacy Research Project Working Conference, Medical Library Association; 2008 Apr 4; Indianapolis, IN.
7. **Schilling K.** The Digital Divide in Hospital Libraries: Security, Licensing and Access Issues. Paper presented at: Central Indiana Health Sciences Libraries Consortium (CIHSLC); 2007 Mar 21; Indianapolis, IN.
8. **Schilling K.** The Impact of Online Training on Information-Retrieval Skills and Clinical Decision-Making in a Family Medicine Clerkship. Paper presented at: School of Library and Information Science Brown Bag Series; 2007 Mar 9; Bloomington, IN.
9. **Schilling K.** If You Build It, Will They Come? Issues and Challenges in Implementing New Technologies for Educational Programming. Paper presented at: Wikis and Clickers and Casting. Annual meeting of the Indiana Online Users Group; 2006 May 19; Fishers, IN.