

Highlights of the 2013-14 Academic Year

School of Informatics and Computing, IUPUI <http://soic.iupui.edu>

During the 2013-14 academic year, the School of Informatics and Computing, IUPUI (SoIC) underwent significant changes. Formerly the School of Informatics, our name evolved to more strongly identify our mission with computing. IUPUI school leadership transitioned as Dr. Mathew Palakal became Executive Associate Dean. The School merged with the former School of Library and Information Science, broadening the scope of our faculty and academic offerings and catalyzing, for the first time, an internal reorganization of the School into chaired departments: Human-Centered Computing (HCC), Bio-Health Informatics (BHI) and Library and Information Science (LIS).

To optimize the opportunities created by our new academic structures, the SoIC launched its first-ever strategic planning initiative. This produced strategic plans for each of our three departments and an overall strategic plan for the school. These plans challenge us to evolve and to better address the responsibilities and profound opportunities the future will bring for a school that must, by definition, remain aligned to the ever-evolving role of information technology in the world today.

The Success of our Students

- As part of its ambitious strategy to expand our curricula to better serve the professional and scholarly needs of our students and our campus, the SoIC developed eight new degree programs during 2013-14. These include the Doctor of Philosophy in Informatics with specializations in Bioinformatics, Biomedical and Health Informatics and Human-Computer Interaction; as well as the Master of Science in Informatics with specializations in Data Analytics, Biomedical Informatics, Knowledge and Information Management, and User Experience Design.
- The SoIC contributed eight courses to the General Education Curriculum, in the general category of introductory courses in Informatics, Human-Computer Interaction and New Media.
- In the 2013-14 academic year, the SoIC generated a 0.2% increase in credit hours, with the HCC (Human-Centered Computing) department showing a 2.2% increase. In raw numbers, this was a rise from 19,280 credit hours to 19,328.
- For the same period, our overall SoIC enrollment (headcount) showed a strong 9.1% increase, with a 23.8% increase in BioHealth Informatics, and a 3.9%

increase in HCC. The overall enrollment numbers for SoIC rose from 1,876 students enrolled to 2,047 students.

- In our ongoing initiative to elevate the academic quality of our curriculum and student body, the SoIC implemented a range of new policies to strengthen overall academic process. These include: 1) Additions to the Late Drop Policy to exclude poor marks, incomplete assignments or other academic inadequacy; 2) Raising to 2.0 the required GPA for students returning after a dismissal; 3) Direct admission for undergraduate students who have already earned a bachelor's degree;) Raising the academic bar for direct admissions from high school, now requiring a GPA of 3.0 or higher or a combined SAT of 1000; 6) Raising from the required minimum grade for credit toward a major, minor, or certificate from C- to C.

Advances in Health and Life Sciences

- The SoIC identified two significant life science initiatives to develop research centers over the next two years. These centers are: 1) *Biomedical Big Data Analytics Center*: This center will exploit the wealth of health and biomedical data and research that is present on this campus and in the community, and apply “big data” analytics and knowledge discovery processes; and 2) *Information Accessibility Center*: This center will research and develop novel information technologies and application strategies to offer people with disabilities full access to the opportunities and experiences of the digital century.
- Dr. Brad Doebbeling, chair of the Bio-Health Informatics Department, was PI on a PCORI Grant (Patient Centered Outcomes Research Institute) for \$2.2 million. The grant theme is "Improving Healthcare Systems for Access to Care by Underserved Patients". Dr. Doebbeling was also a site PI for a Veterans Administration grant for \$1 million. The grant theme is "Sensemaking in VHA Healthcare systemes: A Focus on Readmissions.
- Dr. Mathew Palakal, EAD for our School, was Co-PI on a \$1.4 million grant from the Department of Health and Human Services, as part of the Indiana Health Information and Technology Training Collaborative.
- Dr. Brian Dixon of the BHI Department received three grants as PI, totaling \$500,000, including \$100,000 from the Robert Wood Johnson Foundation to study “Improving Vaccine-Preventable Disease Reporting and Surveillance through Health Information Exchange,” and another RWJF award for \$200,000 to study “Leveraging Integrated Electronic Data Sources to Improve Population Health Assessment at Local Levels,” and a \$200,000 grant from the Center for Disease Control to study “STD Testing, Management, and Related Clinical Outcomes in a Large Metropolitan Community.”

- Dr. Sarath Janga of the BHI Department published six papers this year, including his work as senior author of “Dissecting the expression landscape of RNA-binding proteins in human cancers,” Kechavarzi B, Janga SC, in *Genome Biology*, with an impact factor of 10.3, as well as articles in the prestigious venues PLoS One, *Proteins*, and *Proceedings of the National Academy of Science*.
- Dr. Davide Bolchini was Co-PI on a \$589,000 grant from the National Science Foundation (NSF). The theme of the grant was "Rethinking the role of drug-drug interaction alerts during medication prescribing."
- HCC Lecturer Robert S. Comer led the Web development project: Burdette Cancer Portal <http://portal.nursing.iupui.edu>. This Website was devoted to "Help For Cancer Caregivers" <http://helpforcancercaregivers.org>, an online resource for caregivers of cancer patients, developed in collaboration with Wellpoint Foundation, CancerCare, Caregiver Action Network, Michigan State University. This is a revised and redesigned version of an informational website that had been part of the IU Simon Cancer Center's website. The new version of the site is now a part of the patient-facing tools on the IUSCC web site, and has been expanded to include interactive tools for chemotherapy symptom management.
- The faculty of the SoIC submitted 55 external grant proposals to federal and corporate sponsors during the 2013-14, with the average proposal request in the low six figures. This represents a significant rise from previous years.
- The SoIC faculty had a strong year in publications. This included over 60 journal articles, conference presentations and posters about health and life science themes. As may be expected, the BHI department led the way. BHI Chair Dr. Brad Doebbeling, who was a co-author on 17 peer-reviewed publications in various journals of health informatics.
- The HCC department published 56 journal articles, conference presentations and posters. HCC Chair Dr. Davide Bolchini was last (senior) co-author on seven publications, all with students, including three that focused on the special interactive strategies and requirements for blind and visually impaired users. HCC associate professor Anthony Faiola was first author on three journal articles, including two in Russian journals.
- HCC associate professor Edgar Huang explored health marketing in two published articles: “Connecting to patients via social media: A hype or a reality?” in the *Journal of Medical Marketing*, 13(1), 14-23. Prof. Huang also published “U.S. Hospitals on YouTube: A test to the altruistic marketing approach,” in the *Journal of Communication in Healthcare*, 6(2), 128-134.

- HCC assistant professor Stephen Volda’s co-authored paper, “The many faces of Facebook: Experiencing social media as performance, exhibition, and personal archive” was published in the *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI 2013, pp. 1–10), Paris, France and was awarded a CHI 2013 Best Paper, among the top 1% of all submissions. Dr. Volda also attended the [2013 ACM International Joint Conference on Pervasive and Ubiquitous Computing](#) (UBICOMP) in Zurich, Switzerland, where together with colleagues from Cornell University and the University of Pittsburgh Medical Center demonstrated an award-winning app designed to help individuals suffering from bipolar disorder maintain a consistent daily rhythm of physical activities and social interactions.
- The LIS Department published over 20 journal articles, conference presentations and posters. Assistant professor Andrea Copeland published five articles, and earned an award for Highly Commended Paper of 2013 for “Collection Management and the Budget Crunch: Are We Adequately Preparing Library Students for Current Practices?” published in *Collection Building*.

Contributions to the Well-Being of the Citizens of Indianapolis, the State of Indiana, and Beyond

- In 2013-14, the SoIC engaged 5,181 prospective students. Of these, 2,708 were female; 1,355 were African-American; 436 were Hispanic. We made these contacts through 19 on-campus activities, 11 group visits to the SoIC, 10 external community events, 9 college-career fairs, 8 extended student workshops and 6 visits to high school classrooms. These activities included requests from Girls, Inc., Girl Scouts of Central Indiana, and La Plaza to engage their audiences in technology activities.
- The SoIC outreach to the K-12 system of Central Indiana was highlighted by a \$50,000 grant from the Indiana Pacers Foundation and IPS to deliver a yearlong series of informatics and computing learning sessions for students at IPS Longfellow Middle School. This initiative begins in the fall, 2014.
- HCC (Media Arts and Science) lecturer C. Thomas Lewis won a \$10,000 prize from The Indianapolis Foundation and People for Urban Progress for his proposal to create a mobile literacy environment called the “The Cool Bus,” which was chosen as an Indianapolis Monthly Best of Indy 2013. The *Cool Bus* is a mobile literary arts center, crafted from a retrofitted school bus, to help Indianapolis neighborhoods in need of various literary resources.
- In 2013-14, the SoIC implemented a new strategic approach to external advisory boards. Moving forward, all SoIC departments (HCC, BHI and LIS) will each maintain and engage with its own external advisory board composed of local and national professionals in the field and related academic experts. The purpose of

these boards is to help the SoIC define strategic initiatives and opportunities for the school's research, teaching and engagement missions, and to help the SoIC elevate its work by bringing another, external professional perspective to existing SoIC programs, projects and curricula.

- Along with its new focus on health and life sciences, SoIC has begun to define a large strategic engagement around the general realm of technology-informatics-computational education with the K-12 communities of Indianapolis. In 2013-14, this initiative has included: 1) Ongoing teaching-learning research and classroom engagement at the Indiana School for the Blind and Visually Impaired; 2) Collaborating with Park-Tudor School to enhance Park-Tudor's enhance computer science educational opportunities.
- A team of five HCC (Media Arts and Sciences) faculty and 40 students, led by HCC lecturers Mathew Powers and Todd Shelton, developed a massive multiplayer alternate reality game called "Return of Aetheria" for display and play at GenCon, a national gaming convention that each year attracts over 40,000 visitors to downtown Indianapolis. The game's narrative involves the attempt to re-introduce magic into the world. The game engaged over 1,000 visitors during the convention's four-day with a complex combination of video mapping and projectors, stereoscopic 3D imaging, a phone app, and utilized the entire convention center as a play area, featuring costumed actors portraying characters in the game. The same game saw double-duty when it was later displayed at the Indy PopCon convention in the summer of 2014. Such large-scale, complex interactive platforms have value as a so-called "serious game" that can be used to promote educational or health goals as might be defined by campus or community partners.

Best Practices

- During the 2013-14 academic year, the SoIC developed its first-ever strategic plan. The SoIC plan evolved from a combination of three separate departmental strategic plans, each of which was generated by an intensive series of faculty meetings and collegial discussions. All plans covered the three primary missions in research, teaching and civic engagement. In its plan, the SoIC strongly articulated its commitment to urban health and well-being.
- The SoIC instituted a school-wide policy for the mentoring of all junior faculty, and departmental chairs worked with every faculty member to identify mentors both within and outside of the school.