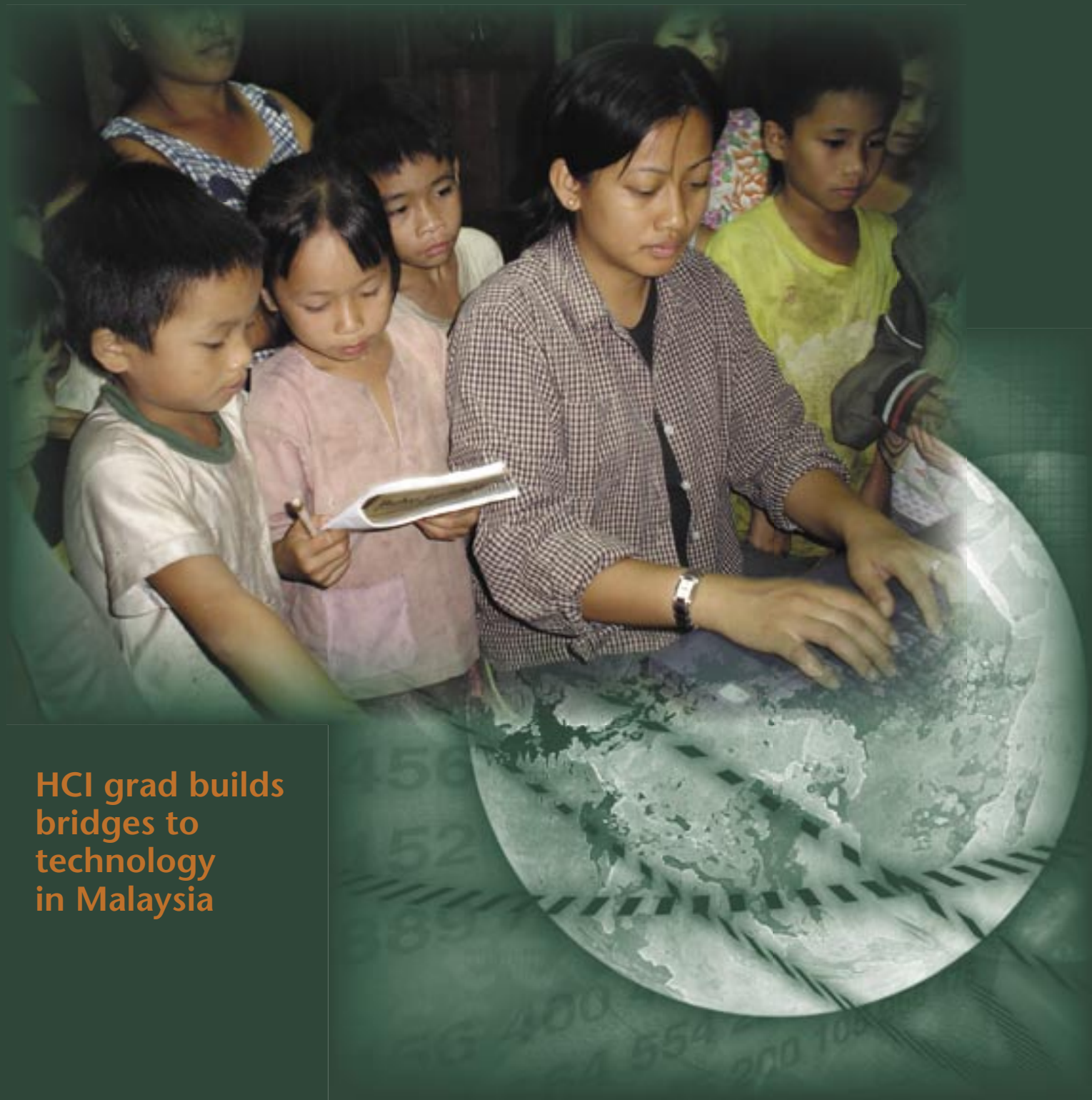


Indiana University School of
informatics

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Community Informatics



HCI grad builds
bridges to
technology
in Malaysia

Indiana University School of **informatics**

Vol. 2, No. 2

SUMMER 2004

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The IU School of Informatics offers an academic path for students from diverse backgrounds who are seeking a rewarding technology career that combines information technology with another area of study. Just as the discipline of informatics operates in a variety of contexts, the School of Informatics has programs on a growing number of IU campuses. The curriculum focuses on both the technical and human aspects of problem solving and emphasizes innovation and teamwork. The school understands the role of research in building a world-class faculty and in recruiting and educating outstanding students, but also places a primacy on its role in creating new knowledge and technologies for the betterment of people everywhere. The school also is firmly committed to collaboration with industry and government in order to hold up its side of the "three-legged stool" that supports economic growth and progress.

Cover: Jenifer Lasimbang teaches grade-school children in rural Malaysia how to operate a personal computer.

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Building bridges, connecting people

When presenting informatics to new audiences, I frequently use the metaphor of informatics as a bridge. This metaphor captures the idea of informatics as a tool, a human construct, designed and built to overcome an obstacle. Bridges serve a number of practical purposes. They are engineered objects that provide a clear path to a goal and bring us to a new place. But the best bridges speak to us on a human level, as works of art or even as icons. Human factors directed the original design of these exceptional bridges. They contain a balance of science and art, considering human needs alongside technological methods. When I look at this issue of *Informatics* with its focus on human-computer interaction, I see informatics at work doing precisely that — employing technical tools with human needs in mind, bringing people to new destinations.

Our cover article on the impact of Jenifer Lasimbang's MS thesis is a shining example of the power of informatics as it bridges the digital divide. Jenifer has achieved her goal, to develop a network of community technology centers among the technology have-nots of her native community in Malaysia. She applied her knowledge of HCI to bring children access to technology that was out of their reach. Now they will be better prepared to begin school, and to have opportunities that were previously out of reach.

The School of Informatics itself is in the middle of a journey of great importance. We have just completed a highly successful faculty-recruiting season, interviewing applicants from around the world who want to be part of the growth and potential impact of the nation's first school of informatics. More news will come next fall when we profile our amazing new faculty in our next issue.

This spring I had the privilege of welcoming more than 300 informatics graduates to our alumni family.



As you enter into your professional lives, I hope you will keep in touch with your school. Let me know about your experiences, your successes, your challenges. E-mail me anytime at informat@indiana.edu. I look forward to working with you to build an active network of alumni who can be voices for informatics as we build bridges to tomorrow.

J. Michael Dunn



Martin Siegel named associate dean



Martin Siegel (professor of informatics and education) was named associate dean for graduate studies and research for the School of Informatics (IUB), replacing **Christine Ogan** (informatics and journalism). Siegel will continue in his role as head of the graduate

program in human-computer interaction design in Bloomington until a new director is named.

JETT reaches out to high school teachers

The Computer Science Department at IUB recently conducted the Java Engagement for Teacher Training workshop to benefit high school teachers. The workshop prepared teachers to respond to the transition of the Advanced Placement exams in computer science from C++ to Java, conducted by the College Board.

The two-day workshop was attended by 35 high school computer science teachers from Indiana and nearby states. Sessions spanned the gamut of foundational concepts of object-oriented programming in Java to network games. In order to accommodate the wide range of technical expertise of the participants, two parallel tracks (decaf and espresso) of each session were offered. Most sessions were conducted in computer labs, providing participants hands-on exposure to the concepts being discussed. Undergraduate students from the various IT-related departments at IU assisted during the lab sessions of the workshop.

A theme of the workshop was to address the problem of the ever-shrinking pipeline of women in computer science, highlighted in a session titled “Where Have All the Women Gone?”

The workshop was sponsored by the Department of Computer Science, in partnership with the School of Informatics, Information Systems, and the School of Library and Information Science.

Christine Ogan receives Hermes Award

Christine Ogan (informatics and journalism) received the Hermes Award at a reception in January, recognizing her hard work and dedication as a founding associate dean of the School of Informatics.

Ogan’s experience directing the graduate program in journalism and her high standards were important in getting the graduate programs off the ground in informatics. After nearly three years of service, Ogan returns to teaching and research. She is presently at work on a recently awarded



major NSF grant to study educational environments for men and women who wish to enter information technology fields. The study aims to determine which type of environment shows the most promise for the recruitment and retention of women. Ogan will continue as a faculty member in the School of Informatics (as well as in the School of Journalism), and she continues to lead the effort to establish a PhD in informatics.

The Hermes Award is named for the Greek god Hermes, known as the messenger of the gods. The

Assistant dean receives university staff award

Assistant Dean **Susan Quinn** was named by then-IU Bloomington Chancellor Sharon Brehm as one of the two “Outstanding Professional Staff Members on the Bloomington Campus for the 2003–04 academic year.” Quinn received an award from the chancellor at a reception in December.

School of Informatics Dean Michael Dunn said, “Susan’s performance as assistant dean has been exemplary and marked by a number of creative initiatives that have helped to shape the identity of informatics at IU.”

Quinn now serves as chief of staff, with diverse responsibilities including fiscal oversight, marketing, and student recruitment and retention. As communications officer, she has played a leadership role in the development of the school’s identity and the develop-

ment of publications and Web resources. Quinn is founding editor of the alumni magazine, *Informatics*. One of Quinn’s greatest contributions to the school was her participation in the successful effort to secure state funding for the School of Informatics; she was



instrumental in the creation and implementation of a communications strategy for the school’s legislative effort. “Susan has been with us from the very beginning, and her positive, ‘can do’ attitude has been helpful in the founding of our new school,” Dunn said.

Hermes is awarded by the dean to those who have made outstanding contributions to the School of Informatics. A perpetual plaque honoring recipients of the Hermes is displayed in the “chat room,” on the first floor of the IUB Informatics Building.

Baldwin and Talon named favorite professors

School of Informatics’ New Media Program faculty members Dan Baldwin and Durwin Talon were recently named “Favorite Professors” by the IUPUI Student Athletes Organization. The awards were presented at a reception held prior to the men’s basketball game on Jan. 29.

CICWIC draws local students

The highly successful Central Indiana Celebration of Women in Computing was held Feb. 20–21 at McCormick’s Creek State Park. The 24-hour celebration drew 85 graduate and undergraduate students from Butler, DePauw, Indiana University, Rose Hulman, and Purdue. IU had student representation from the Department of Computer Science, the School of Informatics, the School of Library and Information Science, and the Kelley School of Business. The Indiana University organizers for the event were Beth Plale (assistant professor, computer science) and Suzanne Menzel (instructor, computer science).

CICWIC is a new concept. It pioneers a regional version of the larger, nationwide Grace Hopper Celebration of Women in Computing. This year’s CICWIC conference was a pilot project, and as such, the organizers, led by DePauw’s Gloria Childress Townsend, put significant energy into documenting the organization process so that the model can be adopted easily.

Indiana University sponsors included the Department of Computer Science and the School of Informatics. Corporate sponsors included Hewlett-Packard and Microsoft.

Beth Terrell joins staff as student recruiter

The School of Informatics is pleased to welcome **Beth Terrell**, who has joined the school as the coordinator of student recruitment in Bloomington. In this new position, Terrell will design and execute initiatives to increase enrollments in informatics. Terrell is a graduate of Purdue and holds a graduate degree from Indiana Wesleyan. She comes to the School of Informatics from IUB’s Department of Mathematics, where she served as undergraduate programs coordinator and adviser.



Best wishes to IUB’s undergraduate Informatics Club leaders



The IU School of Informatics extends congratulations and best wishes to this year’s leadership team members of the Undergraduate Informatics Club in Bloomington, from left, Chris Hansen, Brad Gessler, Marcie Ridout, Tyler Pace, and David Tenzer.

New organization for women founded at IUPUI

The Informatics Women's Organization was founded in July 2003 as a resource to help women succeed in the fields of informatics, computer science, and computer technology. Historically, the number of women engaged in these careers has been significantly lower than men. It is the goal of the IWO to help women break down the gender wall in this area through networking, mentoring, and educational programs.

Realizing the need to educate and encourage young women, the IWO is developing a mentoring program for middle- and high-school-age girls. They have partnered with the Urban League to provide activities such as tours through computer facilities. Plans are being made to involve other organizations, such as Girls Inc. and the Girl Scouts, to offer summer computer workshops.

Recognizing the importance of networking to career success, the IWO has developed an association with Women & Hi Tech, a local organization of professional women with a significant member base in central Indiana. The group hopes to make connections with other organizations in the city in an effort to aid female students in connecting with prospective employers.

IWO holds monthly meetings on the second Tuesday of each month, from 5:30 to 7 p.m. They held a mini-conference in November 2003, during which the discussion centered on the issues women encounter as professionals in careers traditionally dominated by men.

A career conference was held on Friday, April 2. Speakers from various industries discussed the skill sets they are looking for in potential employees. Recent graduates of IUPUI and IUB participated in a panel discussion focusing on their experiences in the workplace. Included in the conference was time for networking and the sharing of information.

Largely due to the efforts of IWO President Barbara Howrey, the organization has built a strong foundation for growth and development in a short time. Currently, IWO has 60 members. Membership is open to students, alumni, and interested people from outside the university. No dues are required, just an interest in helping women succeed in technology-based careers.

For more information, contact IWO at itwomen@iupui.edu.



Wendy Clendening, left, and Marcie Ridout

RIGHT: Dean Michael Dunn talks with Brad Gessler, who graduated from IUB this spring.

BELOW: Tarah Nethery




ABOVE: IUPUI students, from left, Heather Olibo, Kristi Pardue, Jennifer Brown, and Shandias Smith prepare for commencement. LEFT: Linda Hostetter, recorder for the School of Informatics, pins a carnation on Matt Martindale's lapel.

I-Mars brings red planet to the community

What do you get when you mix 3-D visualization technology, stunning new images of Mars, and glimpses of current research on space exploration? The answer is i-Mars, an event hosted in February at the Informatics Building in Bloomington to celebrate science, technology, and space exploration.

I-Mars featured 3-D images of Mars displayed on the John e-box, a portable 3-D visualization tool invented at IU's advanced visualization laboratory. More than 500 guests visited the open house and saw new 3-D images from the Mars rovers, Spirit and Opportunity. In addition, a collaborative slate of lectures provided a glimpse into the groundbreaking research taking place at IU.

Four speakers gave a series of informal talks to visitors on their research and its relation to space exploration. **John Huffman**, director of the Informatics Research Institute, began the event with a talk on remote instrumentation. Richard Durisen, chair of the Department of Astronomy, spoke on the formation of planetary systems. Lisa Pratt and David Bish, both faculty in the Department of Geological Sciences, talked about exploring the subsurface of Mars and the prospects and importance of water on Mars.

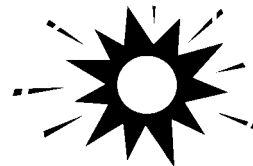
The event was sponsored by the IU Office of the Vice President for Research, in partnership with the School of Informatics, the Advanced Visualization Labs, and the departments of Astronomy and Geological Sciences. 



Top: Young and old visitors enjoyed viewing the Martian landscape in 3-D.

Center: Astronomy students Scott Michael, left, and Aaron Boley explain planet formation to guests at i-Mars.

Left: John Roscheck of the Department of Astronomy helps young visitors to view an animation of the Mars mission.



Video game technology at work: Talon receives grant

Associate Professor Durwin Talon, School of Informatics' New Media Program, has been awarded a \$15,000 grant from the Indiana University SBC Fellows Program to further work on the project titled "A Computer-Simulated Experience to Develop and Assess Systems-Based Practice and Practice-Based Learning and Improvement Competencies in Primary Care Residents."

Working in collaboration with Dr. Deanna Willis of the IU School of Medicine, Talon is using video game technology to simulate "real-world" patient care situations for medical school students during their residency. The aim is to help both students and instructors measure the efficiency and effectiveness of residents as they work within the structure of the medical community, make critical decisions, and interact with patients.

Fifteen students from the New Media Program are currently involved in the project. Their commitment and total involvement is providing them with a unique and invaluable opportunity that can only be provided through involvement in this type of professional endeavor.

The SBC Fellows Program promotes and showcases innovation in teaching and learning facilitated by technology. Faculty awards are made annually on a competitive basis, and projects are selected for support by a review committee of faculty and current SBC Fellows. The program provides support for faculty projects demonstrating the effective integration of information technology for campus and distance education. The intent is to encourage scholarly publication on teaching and learning with technology.

Baldwin presents on clients and competition in the classroom

In early January, Dan Baldwin, an assistant professor in the School of Informatics' New Media Program, presented at ACT 7, the Seventh International Conference of the Academy for Creative Teaching, in Lucerne, Switzerland.

The conference was sponsored by the World Association for Case Method Research and Application, an organization founded in 1984. WARCA evolved from contacts of professors, researchers, policy-makers, professionals, and business executives who shared a common interest in the study and application of the case method in research, teaching and training, and development. The case method encourages the establishment of learning environments that involve students in the educational process through problem solving, engagement in critical thinking, group work, and professional experience activities.

Baldwin's presentation "Clients and Competition in the Classroom" deals with the challenges and rewards of competitive, client-based projects in the classroom. Focusing on new media students, Baldwin explains that they are expected not only to master the hardware, software, and programming languages utilized in industry, but also must develop the social and communicative skills necessary for professional interaction with clients in the business community. Topics include providing an active, progressive approach to service learning; creating the framework within which students can build a solid foundation of skills that expand beyond technology; selecting nonprofits as partners; establishing the competition; student team selection; scheduling client visits; and final project selection.

The Uninvited Guest

Assistant Professor Joseph Defazio recently participated in a collaborative project between the Renal Network (patient services department) and the IUPUI School of Informatics' New Media Program.

Working with Dolores Perez, the Renal Network's director of communication, and Patricia Ellison, animation specialist, Defazio produced a CD-ROM titled *The Uninvited Guest*. Through the combination of animation and interview clips with patients and their families, the project seeks to further awareness about chronic kidney disease and address the needs of those coping with the illness. The artistry, compassion, and commitment of the project coordinators is evident as valuable information is presented and personal experiences are brought to life in an honest and vivid way.

The Renal Network Inc. is part of the Centers for Medicare and Medicaid Services' End-Stage Renal Disease Networks. It has been a recognized leader in the provision of patient services, particularly through its creative and original use of interactive workshops, board and CD-ROM games, the Web, videos, and, now, animation.

Today, 18 ESRD network organizations exist under contract to CMS and serve as liaisons between the federal government and dialysis service providers.

The Patient Leadership Committee of the Renal Network, composed of kidney patients, family members, and dialysis facility staff, provide the experience and expertise needed to insure that the materials and tools produced by the patient services department address the needs of the community. The vision and testimony of the PLC's Family Sub-committee was the inspiration for the project.

To learn more about chronic kidney disease, visit www.kidneypatientnews.org, a patient-centered Web site also created by the patient services department of the Renal Network Inc. in collaboration with IUPUI's New Media Program.

Tennant, Koch present at international conference

New Media Program professors Susan Tennant and Clint Koch presented their article “Negotiating Virtual and Physical Museum Space: Design Prototype for the Native American Gallery Indiana State Museum” at the Ninth International Conference on Virtual Systems and Multimedia, which was held in Montreal in October 2003.

The VSSM seeks to provide a foundation for the integration of the human, technological, and strategic aspects of virtual reality.

According to its Web site: “Virtual and multimedia information processing technology is currently attracting the attention of many people because its considerable progress is expected to change human society extensively in the near future. We cannot be ignorant of the progress of this technology; instead we have to investigate its future possibilities as well as the effects it brings to society.”

The conference offers a venue for the discussion of VR issues from artistic, technical, and commercial perspectives and seeks to include a wide variety of topics, including pure technological, mathematical, medical, agricultural, educational, psychological, artistic, and social issues.

The paper presented by Tennant and Koch focuses on a proposed virtual archeology information display system. The exhibition, being developed for the Indiana State Museum in Indianapolis, is a virtual tour of Angel Mounds, a prehistoric Native American site located in southern Indiana.

Virtual reality, graphical recreation, 3-D simulations, and other visually enhanced new media are appearing in museum exhibition spaces worldwide. From stand-alone computer kiosks to stereographic theaters, the use of virtual enhanced reality display

in museums is a highly engaging medium for the communication of information. This enriching employment of content has great appeal to a large and demographically varied audience. Traditionally, access to these types of exhibits has been limited because they are usually dedicated to singular or small group participation and are often separated from associated exhibitions.



The display proposed in this paper provides an innovative, dynamic interconnection between the museum’s physical and virtual display space and incorporates a visually enhanced medium with interactive touch-sensitive 3-D informational nodes.

The virtual tour of Angel Mounds is part of the CLIOH Project, a collaborative project undertaken by the Informatics Research Institute at IUPUI.

VAID display of Angel Mounds. Illustration courtesy of Susan Tennant.

Other faculty research projects

The School of Informatics is a partner with IUB’s Cognitive Science Program and the School of Education in receiving a campus **Commitment to Excellence** award for research in the study of mind, learning, and intelligence. Funding will allow for expanded collaboration with these units and will allow for four new faculty positions in informatics.

William Aspray submitted a proposal to the NSF on an applied history of cyber infrastructure. He is completing work on an NSF grant to construct a meta-analysis of information technology worker research.

Informatics faculty **Mehmet Dalkilic**, in

participation with the Center for Genomics and Bioinformatics, completed work on an IBM grant for work on the Protein Family Annotator Project.

The School of Informatics is taking part in the development and implementation of the Pervasive Technologies Laboratories (funded by the Lilly Endowment). **Geoffrey Fox**, director of the Community Grids Lab at IUB, is a member of the School of Informatics faculty, as is **Polly Baker**, director of the Human-Computer Interaction Lab at IUPUI.

Informatics faculty **Dennis Groth** received a grant from Hewlett-Packard for hardware to explore his interest in visualization and informatics.

(continued on page 8)

Computerworld names McRobbie an IT leader

Michael McRobbie, Indiana University vice president for information technology and chief information officer, was named one of *Computerworld* magazine's 2004 "Premier 100 IT Leaders."

The annual list, traditionally published in the magazine's first issue of the year, honors individuals who are judged to be among the top information technology strategists in the United States.

McRobbie, who also holds a second vice presidency in research at Indiana University, was one of six leaders chosen from the academic sector. McRobbie joins vice presidents and CIOs from such financial corporations as Bank One, American Express, Merrill Lynch, and Goldman Sachs and from such technology organizations as Sun Microsystems, Novell, Cisco Systems, Nortel Networks, and Palm.

From a pool of 598 candidates, *Computerworld* editors and a panel of 10 former winners of the Premier 100 IT Leaders award chose 100 individuals who "use their wit and fortitude to keep their staffs and companies headed in the right direction," according to the magazine. This year's honorees oversee IT budgets ranging from \$100,000 to more than \$1 billion.

McRobbie is a professor of computer science, informatics, and philosophy and is an adjunct professor of cognitive science and information science at IU Bloomington. He is also a professor of computer technology at Indiana University-Purdue University Indianapolis. McRobbie has chaired or been a member of advisory committees serving the National Science Foundation, Internet2, the University Consortium for Advanced Internet Development, and other state and national organizations.

Aspray named Rudy Professor by IU trustees

William Aspray was honored by the IU trustees in their meeting on Jan. 30, during which they conferred on him the title of Rudy Professor. A preeminent scholar with a worldwide reputation, Aspray joined the School of Informatics in 2002. He teaches and conducts research in the areas of organizational, social, and mathematical foundations of informatics. A member of the Bloomington faculty, he is also an adjunct faculty member in computer science, history and philosophy of science, and library and information science.

Aspray came to IU with a distinguished teaching and research record at such institutions as Harvard, Minnesota, Penn, Rutgers, Virginia Tech, and Williams. He was associate director of the Charles Babbage Institute, the premier research institute in the history of computing, and was director of the IEEE Center for the History of Electrical Engineering. Prior to joining IU, he served as executive director of Computing Research Association, a Washington, D.C., nonprofit organization that represents the research universities, industrial research laboratories, and other centers (such as the national supercomputing centers) in the computing-related disciplines.

Aspray is among a group of 15 outstanding faculty members who now bear the title of Rudy Professor. This distinguished-rank professorship is named for James H. Rudy, a 1932 IU graduate who donated the bulk of his estate to Indiana University. The board of trustees used the estate to establish funding for the Rudy Professors, to recognize outstanding faculty. The first Rudy Professor, named in 1959, was Edwin Cady of the Department of English.

Faculty research

(continued from page 7)

John Huffman (chemistry and co-director of the Informatics Research Institute) is leading the Reciprocal Net project at IUB. This NSF-funded project established a distributed molecular database, providing public access to a collection of molecular structures with graphical tools, accessible by the Internet.

Informatics faculty **Sun Kim**, the recipient of a prestigious NSF CAREER grant, is continuing his research, in partnership with Bloomington's departments of Biology and Medical Sciences and IUPUI's Cancer Research Center on a project to use bioinformatics methodologies to advance the work on ovarian cancers.

Fillippo Menczer submitted a grant to the NSF for work on peer-based rejection of e-mail junk via ensemble classification techniques. Menczer holds a prestigious five-year NSF CAREER grant.

Informatics faculty **Javed Mostafa** (informatics

and SLIS) continues to work on a grant from North Central Regional Educational Laboratory, titled "Serving NCREL Data Using SIFTER Technology." He has also applied as a co-investigator on a pending NSF grant to study the management of information flow.

At the Informatics Research Institute at IUPUI, co-director **Matthew Palakal** is continuing work on the IMLS Leadership Grant-funded project CLIOH, the digital Cultural Library Indexing Our Heritage. This project captures endangered archaeological sites digitally. Chichen Itza, Uxmal, Angel Mounds, and other threatened archaeological sites "come back to life" in virtual reality.

Edward Robertson, **Mehmet Dalkilic**, and **Dirk Van Gucht** (computer science) continue their NSF-funded research on data mining and information dependencies.

Cathy Wyss (joint with computer science) submitted a grant to the NSF to research an extensible relational database approach to interoperability.



Chen joins IUPUI informatics faculty

Jake Chen has joined the School of Informatics' faculty at the Indianapolis campus as a visiting assistant professor. He holds a BS in biochemistry and molecular biology from Peking University, China; an MS in computer science and engineering, with a supporting minor in biochemistry, molecular biology and biophysics from the University of Minnesota, Twin Cities; and a PhD in computer science and engineering from the University of Minnesota, Twin Cities.



Chen has been conducting research and development in bioinformatics and computational biology since 1995. Prior to coming back to academia, in 2002–03, he was the head of computational proteomics at Myriad Proteomics Inc. (now Prolexys Pharmaceuticals Inc.), Salt Lake City, Utah, where he led a team of bioinformatics researchers and developers in the study of the “human protein interactome” data, a proprietary network map of human protein-protein interactions consisting of more than 10,000 human proteins and 80,000 interactions from more than 1TB of collected raw data. From 1998 to 2002, he worked as a senior consultant and then a bioinformatics computer scientist at Affymetrix Inc., Santa Clara, Calif., where he developed several gene/mRNA selection databases of more than 100GB in size, which resulted in the commercialization of human U95, mouse U74, and rat U34 GeneChip microarrays. From 1996 to 1998, he was a research assistant and consultant to the Computational Biology Center of the University of Minnesota, where he developed algorithms and databases to analyze expressed sequence tags from several plant genome sequencing projects in the United States. He has given many scientific presentations at leading U.S. biotech firms, research institutes, universities, ACM/IEEE local meetings, and national and international conferences.

Chen is passionate about initiating innovative collaborative interdisciplinary research that has high-impact potential. His research interests include computational systems biology, high-performance database computing, and bio-discovery informatics.

Besides conducting research, he devotes time to several community-based nonprofit professional organizations. Chen is the founding chair of the Bay Area Young Scientists' Forum and a board member of the Association of Chinese Bioinformaticians.

He has also served as a board member of the Chinese Association of Science and Technology, Utah Chapter, the session chair for the session on systems biology and informatics at the SCI 2004 conference, the program committee/session chair for the IEEE Computer Society CSB, and the track co-chair for the ACM Symposium on Applied Computing, Bioinformatics Track, in 2004.

Tennant named an executive director for VHN

Susan Tennant, clinical assistant professor at the Indiana University School of Informatics, Indianapolis campus, has been asked to serve as an executive director for the Virtual Heritage Network.

The VHN is an international organization designed to promote the utilization of technology for the education, interpretation, conservation, and preservation of natural, cultural, and world heritage. The VHN arose from the need of those working in the field to communicate with each other and to share information.

This network, comprised of more than 300 researchers from around the globe, is dedicated to the field of virtual heritage. The information housed in its database provides a comprehensive and evolving resource for VH researchers.

Tennant received a BA in education and a BFA in ceramic art and design from SUNY's Alfred University. She graduated with an MS in media arts and science from the IUPUI School of Informatics in 2000.

She has received numerous awards, including the Silicon Graphics Inc. Award for excellence in computational sciences and visualization at Indiana University and the Institute of Museum and Library Services, awarded for the CLIOH Project. Tennant was also a 2000 grant recipient of Indiana University High Performance Network Applications Program Internet2.

A member of the Eiteljorg Museum board, Tennant is a past Master Fellow recipient of the National Endowment of the Arts and a three-time recipient of the Indiana Arts Commission Distinguished Master Fellowship. In 2002, she received an IU SPROP interdisciplinary grant.



Check us out online!

To learn more about the School of Informatics' faculty, visit <http://informatics.indiana.edu/people/faculty.asp>



Integrating HCI and design: HCI/d at IUB

At the School of Informatics, Bloomington, we have embraced the idea that design and HCI must be tightly integrated; this idea forms the core of our vision for the program. At the graduate level, we accept students with backgrounds in design, as it owes to traditions of product design, communications design, art, and architecture, or HCI, as it owes to traditions of cognitive psychology and computer sciences. Our core faculty have backgrounds in design, computing and cognitive sciences, and educational technologies.

To do interaction design in the context of information technology, one needs to combine the skills that people use when they do interaction design for other products that have enjoyed longer histories, such as electronics, appliances, furniture, and automobiles. On the design side, these skills include visual literacy, cultural sensibility, and the ability to endow form with meaning in the construction of appearance, exploration, and interaction prototypes. On the HCI side, these skills include technological literacy, the ability to design formal user studies and construct working prototypes for usability studies, and the ability to work closely with software engineers.

Moreover, these skills must be learned in an environment in which they are all applied collectively and concurrently, for otherwise we should expect students to go out into the world having learned only one set or the other with little understanding of how to work effectively with others in an environment that demands parity of participation for both sorts of skills. Because of this vision for our program, we must consider both the problems of bringing design skills to HCI students and the problems of bringing HCI skills to designers.

Physical spaces

One surprisingly important aspect of the integration of HCI and design in education is the physical learning space. A typical inventory of space in a design environment might include shared spaces for faculty, large and small collaboration spaces, gallery-like spaces, re-configurable spaces, executive education

spaces, along with computer labs and lecture theaters. At the School of Informatics in Bloomington, we have very traditional offices and meeting rooms, though we have added “design-like” spaces to our facilities, and we expect to be able to design our own ideal facilities in the not-too-distant future. We are not certain which comes first, designer-like physical spaces or designer-like culture, but we are certain that they are intrinsically related.

Culture

In a studio-based learning culture, project-based learning is the norm. Students are often asked to choose their own topic of interest and to develop a major project with little specific structure and many hours of studio time. Moreover, students are required to subject their work to frequent public critique early and often in their design processes. One of the most salient features of design culture is the ability of its learners and practitioners to generate many divergent concepts and the willingness to discard concepts. Some of our students come to us with experience in a culture of studio-based learning and practice, as is common in design institutions. Other students frequently need to enhance their skills of visual language and must become accustomed to the idea of sharing work-in-progress or abandoning a concept. And so, one of our biggest challenges in integrating HCI and design in a single curriculum is to create a studio-based learning culture while still preserving the rigor of more traditional science-based learning.

IUB’s evolving curriculum

At HCI/d, all courses incorporate project-based learning and public presentation. On the undergraduate level, we offer an interaction design course targeted at establishing baseline skills and based on the popular text *Interaction Design: Beyond Human-Computer Interaction* co-authored by Yvonne Rogers, a member of our faculty [1]. This course includes weekly design-oriented projects, public critique of projects, and exams. The incorporation of a practice of public critique into an undergraduate class with typically 80–100 students has been an interesting exercise, to say the least. Students in this course report that the weekly projects and public discussion are their favorite part of the course.


This course is followed by a graduate class in HCI/d that is a highly choreographed and dynamic tour through design from a variety of different professional perspectives, including design from the point of view from an architect, an instructional designer, a choreographer, and others. Students in this class work in teams of four on three large design projects. While public presentation and critique of the design projects is required, critique of work-in-progress is accomplished through the use of “mentors” who are

graduate students. The course uses texts on interaction design and group decision strategies [2, 3].

Graduate students are required to take a specialized topics course. The main part of the course examines the new paradigms that have emerged post-GUI (namely, ubicomp and pervasive computing/environments) and explores how applications can be designed and integrated to support novel forms of user experiences. Case studies and innovative research projects are used to illustrate how the new application areas move beyond the desktop. To put into practice what is being learned, students taking the course have the opportunity to take part in the CHI 2004 interaction design student competition.

Graduate students are also required to take an HCI/d class that attempts to dynamically include both design and HCI skills, based on the backgrounds of the particular students in the class. Graduate students are required to complete a major, two-semester project that shows evidence of skill in both HCI and design. The projects themselves are required to cover the construction of what we call a design argument or design explanation. One of the most successful such projects to date is due to a recent graduate of our program, Jenifer Lasimbang, who traveled to a remote village in Sabah, Malaysia, to conduct a design-oriented ethnographic study and returned again with buy-in from the community to construct a working prototype installation of computing technology, running on solar power and satellite. (Her project is featured on page 12). The photograph in the poster shows that the young children in the village were so eager to see the newly introduced computer that they showed up for instruction long before sunrise and received instruction by the light of the laptop monitor.

Conclusion

There are many challenges in the construction of a program of study in HCI and design. To succeed, the school is building a new culture of design and HCI that promotes the best aspects of rigorous scholarship, technical skills, and design knowledge, traditions, and practice. 

This article is derived in large part from Eli Blevis, Yvonne Rogers, Martin Siegel, William Hazlewood, and Amanda Stephano. "Integrating HCI and Design: HCI/D at IUB, a Case Story." Paper to be presented at the CHI Connect 2004: Conference on Human Factors in Computing Systems. Workshop #11: "Exploring the Relationship Between Design and HCI," Vienna, Austria, 2004.

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What is HCI?

by Anthony Faiola

By the early 1990s, the Association for Computing Machinery's Special Interest Group of Computer-Human Interaction formally defined HCI as a discipline "concerned with the design, evaluation, and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them" (Hewett, Baecker, Card, et al., 1992).

Human-computer interaction is a multidisciplinary field of informatics concerned with the application of computer science, social sciences, communication, and numerous other disciplines. Research into the user-centered design of usable technology draws extensively on mainstream informatics concerns with cognition, representation, visualization, and computation. These systems include software, Web-based online products, and a whole range of hand-held and table-top systems/devices. HCI problem-solving issues center on five key attributes that affect the design and usability of graphic user interfaces and system architecture, which include

- Learnability, which indicates that the system is easy to learn so that the user can rapidly execute tasks;
- Efficiency, which indicates that the system is efficient to use, so that once the user has learned the system, a high level of productivity is possible;
- Memorability, which indicates that the system is easy to re-member, allowing the casual user to return without difficulty to the system after some period of not having used it;
- Errors, which indicates that the system has a low error rate, so that users make few errors, and that if they do make errors, they can easily recover from them.
- Satisfaction, which indicates that the system is pleasant to use, so that users are subjectively and even emotionally satisfied when using it.

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HCI graduate brings computing to rain-forest communities



SABAH, MALAYSIA — A village deep inside Borneo’s dense rain forest has successfully set up a solar-powered computer technology center, enabling the indigenous community there access to a wider world. The project is a direct result of Jenifer Lasimbang’s thesis, titled ‘Community Informatics.’

Jenifer Lasimbang’s project was to find ways to improve the lives of the indigenous communities of Sabah, Malaysia, through the introduction of information and communication technologies. Lasimbang designed and deployed a framework for the creation of CTCs throughout rural Malaysia.

The village of Terian, with a population of about 100 people of the Kadazandusun ethnic group, booted up its first computer system in early August 2003, using a solar energy system. Terian villagers first voiced their wish for a computer two years ago. “We’ve heard of computers. We do not know what computers look like or what they do, but we heard they are very important, and we want them in our village so that our children will not be left behind,” said Evelyn Sipail, community organizer for Terian. “We do not have electricity in our village, and for years, we have been left behind while the rest of Sabah progresses. The solar-powered computer center gives communi-

ties like ours equal opportunity to access computer and related technologies,” Sipail said.

With the set-up of the CTC, Terian villagers are able to use word-processing software and spreadsheets to generate professional business letters to sponsors and government officials, produce organization reports, and file accounting reports for their businesses.

The CTC, housed in Terian’s primary school, consists of one Pentium III laptop, running on Windows XP, and a dot-matrix printer. The solar energy system, consisting of solar panels, batteries, a controller, and an inverter, cost Ringgit Malaysia \$1,300 and took two days to set up. Volunteers from Terian helped carry the equipment from Nampasan, a town near the capital city Kota Kinabalu, to the village.

Lasimbang, who graduated from the Indiana University School of Informatics with a master’s degree in human-computer interaction design in 2003, developed the framework to

deploy CTCs as part of her master's thesis. She raised funds and gathered the resources to set up the CTC, and she works with residents to introduce them to the computers and software.

Lasimbang said: "The CTC is mainly for the children. Malaysia has made computer lessons compulsory for all secondary school students. It is very sad that these rural kids do not have access to computers. When they go to secondary school, they

The CTC will put students in the rural villages on par with their urban peers.

have no idea what a computer looks like, much less how to use one. As a result, many lag behind. The CTC will put students in the rural villages on par with their urban peers."


All Terian children ages 4 to 12 and some of their parents attended Lasimbang's five-day computer training workshop. During the workshop, she introduced them to the computer, taught them how to care for the computer, and taught them how to perform simple functions with word-processing and spreadsheet software. Some villages have begun using the computer to draft



Children are given the opportunity to learn.

letters and document folk stories. The plan is for the entire community to become computer literate. Plans are also under way to connect the CTC to the Internet. Pacos also plans to replicate the system in other rural communities in Sabah.

One enthusiastic user of the CTC is 12-year-old Ferra Lenny. She said: "I want to know more about computers because next year, I will be in Form 1. It is better for me to learn now, before I start secondary school, so that I won't be worried when I face the computer."

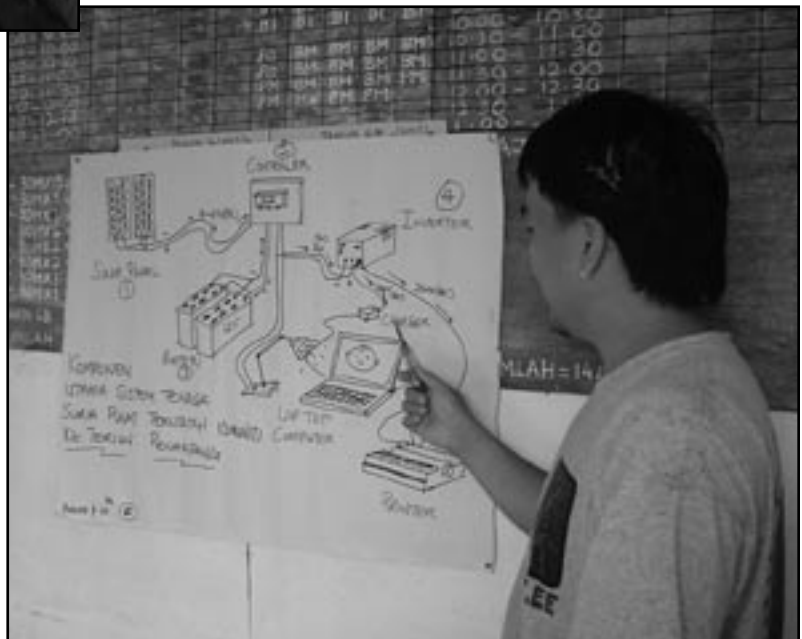
Jenifer Lasimbang, MS'03 (HCI), is now teaching at the University of Malaysia in Sabah. She recently completed a trip to Copenhagen, where she presented her capstone project at Aalborg University. The paper will be printed in the forthcoming proceedings of that conference. She is also serving as a consultant to the Malaysian Education Department, which is introducing ICT to the rural and remote parts of Malaysia as part of the national education curriculum. 



ABOVE: Computers are powered by batteries that are recharged daily using solar panels.

RIGHT: To assist in maintenance, a simple sketch of the system was created for the community's reference.

BELOW: The inverter was an integral part of the design.



Advancing the design of more useable technologies: *Human-computer interaction at IUPUI*

by Anthony Faiola

The mission of IUPUI's HCI program is to provide the best educated and trained professionals in the field. To do this, the faculty has taken the challenge to create a balanced plan of study that can broaden student marketability. As technology companies acknowledge the reality that human-centered design is no longer a luxury, but a necessary component of a product life-cycle, the demand for HCI professionals will increase.

The School of Informatics master of science degree in HCI is a 36-credit-hour graduate program that is interdisciplinary and collaborative with other programs at IUPUI. The mission of the HCI program is focused on delivering a plan of study that provides students with the necessary theory and application of how human beings might easily and effectively interact with existing and emerging computing technologies.

Businesses in software design and other sectors of interactive technology are increasingly requesting professionals with HCI expertise who have suitable skill-sets in system design, evaluation, and the applied social sciences. For this reason, the HCI graduate program at IUPUI considers informatics an appropriate academic context from which to study and facilitate the design, development, and implementation of humanly usable and socially acceptable information technologies.

From a human perspective, an emphasis is placed on user behavior, information processing, and the cognitive modeling of interactive products. From a technology perspective, an emphasis is placed on the design and interaction modeling of interfaces, system design, and various online information storage and retrieval applications.

The HCI graduate program had an excellent beginning in the fall semester of 2003, with a total of 16 new students. The program includes four international students, which provides a cross-cultural dimension so necessary for HCI professionals. Most of the students are technology professionals working during the day and taking HCI courses in the evening. I have been personally impressed with the dedication and passion for HCI that these new students have exhibited in this short time.

HCI course projects

At IUPUI, students are introduced to HCI theory and application from an integrated approach of knowledge domains, i.e., the cognitive, behavioral, and social aspects of users relevant to the design and testing of interactive systems. From this perspective, students learn about the interaction design process as well as design, implementation, and usability.

Introductory work includes two major projects that apply best practices to theoretical models. One project, referred to as "Interface Design for an Interactive Virtual World," challenges students to explore the possibilities of designing an interactive

3-D environment. Each team has three environmental models from which to choose: (1) an e-commerce store, (2) a classroom, and (3) a business/office setting. With the proliferation of research in 3-D and virtual-reality environments, this course emphasizes the inclusion of design and prototyping for these rather complex and dynamic spaces.

Besides the basic product-building aspects, such as defining the problem space, the project addresses a range of VR issues, such as designing the social and psychological mechanisms for communication and collaboration and considering the affects of accompanying technologies. Ethical issues also come into play with the need to understand current and perhaps future laws and policies in defining social engagement. Students are directed to do background research, in particular, to understand the range of VR applications, and research that might apply to their particular product design. They also develop a good understanding of current hardware technologies, e.g., haptic devices and their current limitations.

In another project, teams are provided with a problem scenario that encompasses emerging technologies, such as wireless and handheld devices with multiple functions. This assignment stresses the ubiquity of digital content, broadband distribution, and display platforms, which, in aggregate, have created a convergence of interactive utilities. The form of the product is not constrained; it could be a desktop, a handheld unit, a car interface, a watch, or a type of clothing. The teams create a believable, compelling, and innovative design

through a problem-solving framework that carefully considers the following:

- Problem space, conceptual model, and interaction design of the product;
- User experience based on (pre-design) data collection (questionnaires, interviews, and/or ethnographic studies);
- Interface metaphor (e.g., menus, buttons) and the system feature sets;
- System logic and related cognitive model, as well as other system functions and configurations;
- Target users within local and global communities;
- Product marketability (by investigating the conditions and context in which consumers would use the product);
- Competitive market analysis;
- Potential users (customer profiling); and
- Economic, social, and cultural issues surrounding the identified problem space.

The SM Radio Project

One student project, the SM Radio, was built around a problem space that addressed the issue of accessibility to large catalogs

(continued on page 17)



SM Radio digital prototype of primary interface splash screen and main page

A new model for human-computer interaction

In 1996, Winograd's text *Bringing Design to Software* rocked the foundation of the software-engineering industry by shifting the focus of software development away from computing exclusively and toward design. Norman's (1986, 1993, 1998, & 2002) relentless work reflects this change in his generation of new paradigms for product design. For example, more than 10 years ago, Norman (1993) suggested that well-designed artifacts should reduce the need for users to remember large amounts of information. This small but profound insight supported by empirical research initiated a new paradigm and cornerstone for system designers and HCI education.

Norman's (2002) discussion on the effects of emotion on product design boldly outlines that "effect and emotion are not as well understood as cognition, but are both considered information-processing systems, with different functions and operating parameters. ... The surprise is that we now have evidence that pleasing things work better, are easier to learn, and produce a more harmonious result."

According to computer scientist Greenberg (1996), "good design" is a matter of providing students with a range of knowledge concerning what is usable to people, as well as the techniques of implementing interfaces. Design must also be demystified to the extent that HCI students are empowered to tackle complex problems through skill-laden best practices. I have increasingly seen the practice of HCI as a central methodology for organizing and building information. This process establishes design as the focal point while maintaining user-centricity as a dominant position within the HCI model. The activity of all stakeholders is a collaborative effort that revolves around consumer (user) requirements.

What I have proposed is a gradual theoretical shift of what might constitute a further metamorphosis in domain knowledge for HCI students (Faiola, 2003). Despite a wealth of existing HCI course content on computing, cognitive theory, and usability, HCI students still lack an adequate understanding of design as a problem-solving enterprise of building knowledge from the social sciences and business. This is because most HCI programs still place a heavy emphasis on the mechanical aspects of system building. As such, I believe students should learn to leverage information from a

social context, while integrating existing business conditions that give tangible value to product development. Traditional design and HCI programs rarely teach their students the relationship between design value and market value. In fact, market strategic planning should serve as an integral component of building product knowledge while applying the traditional science of HCI and the craft of good design.

To further strengthen this point, Donoghue (2002) suggests that usability is now linked to revenues and profits as never before. She recommends that user experience drives profitability, based on a business strategy. Increasingly, successful user experiences deliver a firm's value proposition to customers in the most effective means. What this means for the HCI professional is that best practices for user experiences should resemble good market and user background research within the highly iterative design process. Most economic models supporting business strategies fail to recognize the value that a product's design can offer. Eventually, HCI designers must educate themselves about business culture, business language, and business strategies, without becoming business professionals (Norman, 2003).

The challenges we confront in HCI curriculum development are in creating a program that contains the fundamentals of HCI theory and best practices within a framework that emphasizes the interplay among form (design), function (computing), human need (usability), and business strategies (marketability).

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environment requirements, and they applied typical scenarios of the typical user of the product to show how it might be used.

The goal of the SM Radio application is to allow users access to a large catalog of music with the new Palm PDA using the Sprint PCS cellular network. We approached this task by splitting the music into three areas: listening by genre, user selection of music, and off-network listening. Users can listen to streaming music provided by online radio stations at any place that is in the range of wireless system service. Users can also buy songs that will download onto their PDAs so that they can listen to the purchased song whenever they choose. Team developers also discussed in detail issues surrounding efficiency, safety, utility, learnability, memorability, and entertainment.



IUPUI

(continued from page 16)

of music using wireless technologies. The device, using a new service by Sprint mobile wireless data transmission, enables the Palm OS PDA. This project was done by Keith Beatty, Ming-Liang Liu, and Stuart Ough.

The project team outlined that the SM Radio provides a way for users to obtain streaming music in areas that have Sprint PCS service. Users of SM Radio can choose any one of the music genres from the online radio stations. If they find a song they would like to keep, they can easily buy it to keep in their PDA. In addition, the users can perform a search on one or more artists, albums, or song titles. They developed a range of data and envi-

Information visualization with MountainView

Four HCI graduate students are working with Professor Anthony Faiola at IUPUI on the MountainView Project. These students, Tim Altom, Mindy Buher, Michael Downey, and Dimas Gutierrez, are extending an earlier project using 3-D landscapes to navigate filespace. The MountainView Project will be presented at the HCI Symposium in London, England, as part of the Information Visualization 2004 annual conference.

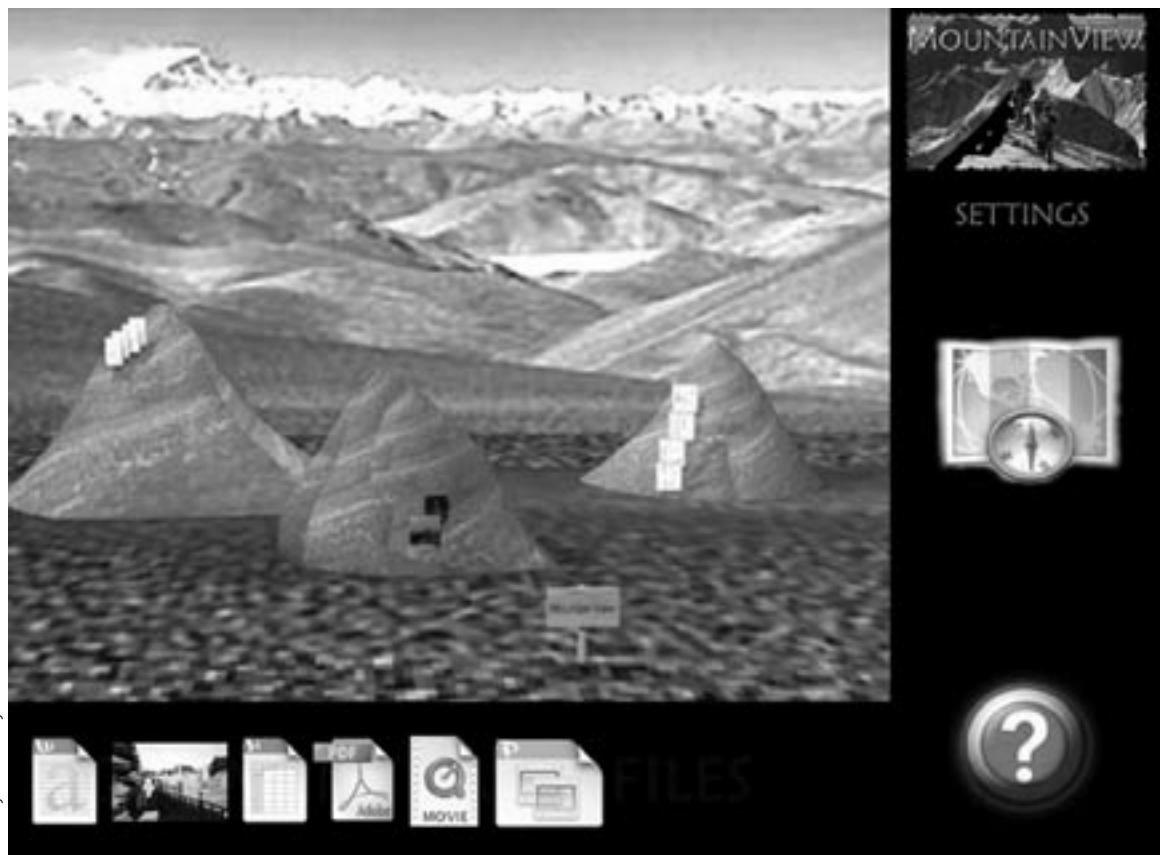
Using a 3-D landscape, MountainView hopes to reduce file search and retrieval time compared to Windows Explorer's traditional data hierarchical system of numerous folders, files, and comparable conditions. Usability goals hope to improve effectiveness, exceed learnability, and maximize memorability compared to traditional file location and navigation systems. MountainView adds a third dimension to file navigation, in a way that is intriguing and playful. It drastically reduces the number of clicks to locate files and permits greater use of spatial orientation to navigate. It also reduces reliance on menus that need multiple clicks to complete tasks by depending on an intuitive drag-and-drop environment.

MountainView builds on the Data Mountain, a Microsoft product, by creating a true 3-D environment where users can circumnavigate a single mountain and can add, manipulate, and delete other mountains as well. Unlike the Data Mountain, which was merely a reclining flat surface, MountainView has full realistic rendering, including backgrounds. In effect, MountainView unites file navigation with the capabilities of video games.

The user enters MountainView at "base camp," which is marked by a non-moveable sign. From the base camp, users can

be "teleported" to a given mountain, or can "fly" there, getting a bird's-eye view of the landscape. Using MountainView, a user can place thumbnails of files on one or more mountains, in any grouping preference. The thumbnails (shortcuts) can be clicked to access the files. The thumbnails can also be moved to a holding area at the bottom of the screen so as to be more readily accessible during use (see image below).

The user places new thumbnails on a mountain, and if other thumbnails are present, they "move aside" for the newcomer. Mousing over a thumbnail produces a balloon with information



Courtesy of Anthony Faiola

The realistic appearance of MountainView is meant to enhance the user's experience.

about that file. MountainView includes full search capability. The discovered file or files are marked on an overhead-view map and can be directly accessed from the map.

The realistic appearance of MountainView is meant to enhance the user's experience, while not detracting from its usability. At the same time, MountainView can be highly customized by the user. If desired, all of the realistic aspects of the interface can be removed, allowing the user to view only conical surfaces with thumbnails.



Informatics student named Kelly Scientific winner

IU informatics student Manish Anand was among the winners of the 2003 Kelly Future Scientist scholarships awarded by Kelly Scientific Resources. Five college students earned scholarship awards through their written explorations of topics ranging from stem cell research to genetically modified organisms for food.

Kelly's Future Scientists program was established in 2000 to help connect entry-level science students with jobs, internships, and research opportunities at major chemical, pharmaceutical, and biotech companies in the United States. The program provides a bridge between the scientific expertise of students and professors in academia and the personnel and recruiting needs of the science industry.

"Today's science students bring fresh perspectives to modern scientific thought, and we created the Future Scientists program to develop and promote their career opportunities," said Chris Jock, vice president of Kelly Scientific Resources. "We are pleased to pro-

vide these interns with career opportunities working alongside some of the world's finest scientific professionals."

The overall winner in 2003 was Jin Ma (Rutgers University), whose essay focused on how the field of bioinformatics is going to benefit the sciences in the long run. Second place was awarded to Heidi Mestad (George Washington University) for her essay on stem cell research and the potential advantages and moral dilemmas associated with it. Anand earned honorable mention for an essay discussing technological advancements in the field of nanotechnology.

Kelly Scientific Resources invites Future Scientists interns, who are placed on temporary assignments nationwide with Kelly's industry partners, to compete for scholarships by submitting essays on contemporary scientific topics. Scientific professionals at Kelly judge the essays and select an overall winner and four runner-up awardees.

Senior found success in New Media Program

"I have thoroughly enjoyed myself in [the New Media] Program and have met some wonderfully talented and helpful people" says Nicol Maurer, a returning student at IUPUI. "One thing I love about the program is that the fundamentals are still taught in a way that stresses the preferred methods, but thinking 'outside the box' is always encouraged."



When Maurer returned to college, she had been on a lengthy hiatus from school, had worked in retail, had become a rescue diver, and was active in community theater. She was uncertain about her long-term plans, but a friend's interest in the New Media Program proved infectious. According to Maurer, "Watching [my friend] go through the program and

seeing what he was learning and creating was very inspiring to me." She wondered if new media could offer her a new creative career path, but she had reservations about her somewhat limited knowledge of computer systems. Encouraged by the success of others in the program, she enrolled in new media classes during the summer of 2002.

During her study at IUPUI, Maurer developed a love of digital video and production and post-production. She would like to incorporate her interests into a career in the field of film and theater arts. She is completing a capstone project that investigates why New Media Program graduates may or may not be pursuing careers in Indiana.

Maurer has the distinction of having earned a cumulative GPA of 3.99, the highest in the School of Informatics' graduating class of 2004 at IUPUI. She carried the banner for the School of Informatics at the IUPUI commencement ceremony on May 9.



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Informatics students win honors in Vienna at SIGCHI 2004

“We made it!” cried Vasudha Chandrasekaran, jumping up and down as she phoned news of her team’s victory to friends in the United States.

Vasudha’s joy echoed through Indiana University last week when two IU teams received honors at the first annual Student Design Competition organized by the ACM SIGCHI, the largest and most renowned conference in human-computer interaction (HCI). The students won the right to compete in the competition in Vienna, Austria, after crossing the initial round of paper submission, beating out 19 teams representing design and HCI programs from top schools all around the globe.

IU’s WeINteract tied for first place with Savannah College of Arts and Design before IU fell to second place by one tie-breaking vote. Third-place honors went to Carnegie Mellon University, with IU’s Team Odyssey taking fourth place.

To compete at SIGCHI, students submitted designs for a voting system that audiences might use to participate in judging and scoring selected Olympic events like gymnastics and diving.

Teammate Sidharth Saxena attributes WeINteract’s success to the integrated design of their scoring device. “Some teams just gave a solution,” Sidharth said, “but ours gave a complete experience to the user.”

The IU students were mentored by informatics



IU’s top team, WeINteract, included, from left, Sidharth Saxena (informatics), faculty mentor Yvonne Rogers (informatics and library and information science), Sriram Mohan (computer science), and Om Prakash Pathipaka (telecommunications). Not pictured are Vasudha Chandrasekaran (informatics and computer science) and Tyler Waite (library and information science).

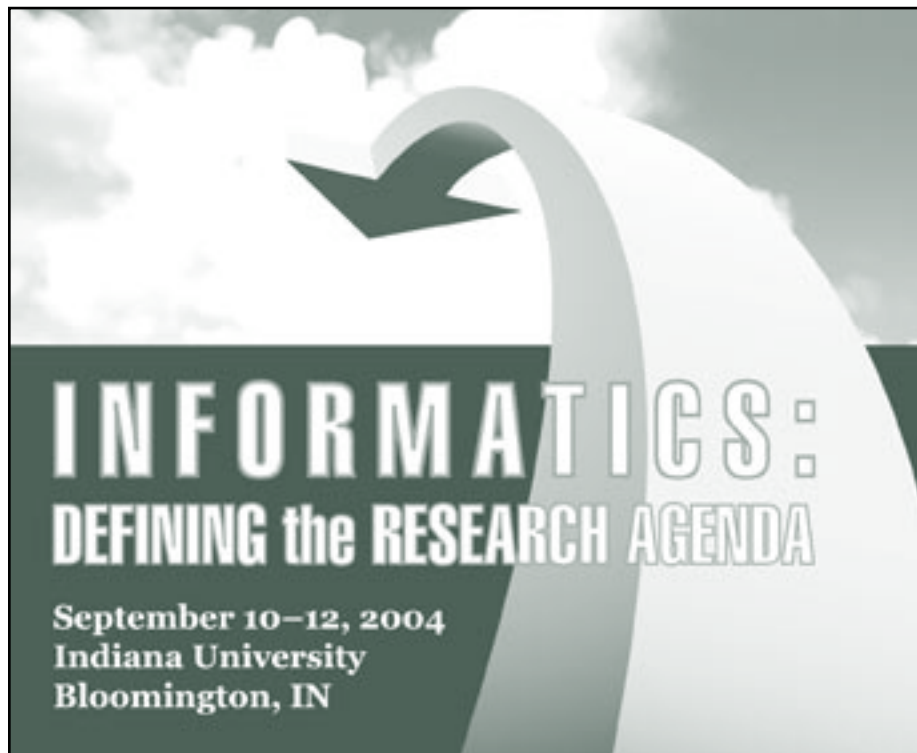
Professor Yvonne Rogers, faculty in the School of Informatics and the School of Library and Information Science. Students worked on their projects with Professor Rogers as part of an informatics graduate class on the topic of ubiquitous computing.

“The multidisciplinary nature of our team was our greatest strength,” said Omprakash Pathipaka, a member of IU’s top-ranked team. IU’s top team “WeINteract” included Sidharth Saxena (informatics), Vasudha Chandrasekaran (informatics and computer science), Om Prakash Pathipaka (telecommunications), and Sriram Mohan (computer science). Tyler Waite (School of Library and Information Science) provided initial guidance to the team.

Taking fourth place for Indiana University was Team Odyssey: Justin Donaldson, Amanda Stephano, Alla Genkina, Scott McArthur, and Muzaffer Ozakca. Not placing, but called out by one of the judges for their great physical design and sensitivity to usability issues, Indiana University’s Team Ujudge, was represented by Hui-Wen Wang and Yu-Hsiu Li.

Twenty-six student teams from 12 countries submitted projects for the competition. Nineteen teams were selected for the competitive poster round, with seven advancing to the finals. During the final round, teams presented their designs to judges and an audience of more than 200.

A number of the participating students are enrolled in the master’s program in human-computer interaction at IU’s School of Informatics. The HCI program is in its third year.



IU Health Informatics Program creates advisory board

The IU School of Informatics announces the formation of the Health Informatics Program Advisory Board. The 30 members of the board will advise the Health Informatics Program on strategic direction, curriculum, research, and advancement.

Health informatics is a relatively new field that addresses the need for improved classification, storage, and analysis of medical information to establish best clinical practice and cost efficiency. The School of Informatics offers a master's of science in health informatics at the Indiana University-Purdue University Indianapolis campus.

The Health Informatics Program Advisory Board

includes representatives from a broad spectrum of the health-care community, including government, research, medicine, information technology, and medical devices. The board will meet twice a year and will provide feedback and advice as needed between formal meetings.

"The IU Health Informatics Program must respond and contribute to changing trends, technologies, and issues in the health-care informatics field," says Professor Anna McDaniel, program director of health informatics. "Through its diverse and accomplished membership, the HIPAB will play a vital role in our graduate students' education."

Health Informatics Program Advisory Board members

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MD/PhD Research Scientist, Regenstrief Institute/IU School of Medicine

Todd Plesko

CIO, Orthopaedics Northeast PC

David Sauer

CIS Enterprise Account Manager, GE Medical Systems

Aaron Schacht

Director, Innovation Center for Excellence, Lilly Corporate Center

Timothy Wildman

Director of Business Development, Hill-Rom



From left, David Setiawan, Khai-Lynn Ooi, an unknown student, and Viola Widjaja



IUPUI students prepare for commencement.

School of Informatics' alumni share their news

Ryan Christy, BS'03 (media arts and science), works for Affectworks in Indianapolis.

Debbie Dillow, CACS'00, BS'01, MS'03 (media arts and science), is a support analyst for CyberLearning Labs Inc.

Douglas Elam Sr., MS'01 (media arts and science), is a senior reliability engineer, Global Maintenance Improvement Services, for Eli Lilly and Co.

Crystal Foutz, CACS'01, BS'02 (media arts and science), works in Multimedia Development Services for University College at IUPUI.

Irfan Gunduz, MS'03 (bioinformatics), works for Phillip Morris.

Michelle Hamblen, CACS'01, BS'01, MS'03 (media arts and science), works in the Office of Marketing Communications at Marion College as a database management and Web site specialist.

Jose Hanza, CACS'02, BS'02 (media arts and sci-

ence), is an Internet specialist at Interosity.

Cheryl Haseman, BS'03 (health information administration), works in global data management on the Endocrine Diabetes Team at Eli Lilly and Co.

Matt Hottell, BA'00, BA'01, MS'03 (HCI), is a lecturer in the School of Informatics.

Allison Hughes, BS'03 (health information administration), is a staff consultant for Med Focus at Eli Lilly and Co.

Ryan Hussey, BS'02 (media arts and science), works for Affectworks in Indianapolis.

Avinash Kewalramani, MS'03 (bioinformatics), converted an internship into a full-time position at Los Alamos Laboratory.

Jennifer Kirke, BS'03 (health information administration), is employed by the Greater Lafayette System as supervisor in the health information management department at St. Elizabeth.

Our alumni at work

Jordan Gilman

SYSTEMS ANALYST, WHIRLPOOL CORP., ST. JOSEPH, MICH.
BS INFORMATICS, MAY 2003
COGNATE: COMPUTER SCIENCE/IT

Jordan Gilman is currently a systems analyst in St. Joseph, Mich., supporting Whirlpool's SAP CRM and R/3 environments while developing a Web-based transaction system for particular parts of their business. Whirlpool Corp. is a Global Fortune 500 company that manufactures major and small appliances under the Whirlpool brand, Kitchen Aid brand, Gladiator Garageworks brand, and several more.

Although Gilman had an eight-year background in IT and Web development, he was able to expand his knowledge through the School of Informatics' curriculum. He took courses such as Java and Networking that play a significant role in his activities at Whirlpool today. Gilman found that the School of Informatics offers a wide range of courses to assure that the students can obtain the expertise they need to succeed in the corporate world.

Kelli Kleindorfer

ACADEMIC COMPUTER SUPPORT SPECIALIST,
COLLEGE OF BUSINESS, INDUSTRY, LIFE SCIENCE, AND AGRICULTURE, UNIVERSITY OF WISCONSIN-PLATTEVILLE
BS INFORMATICS, MAY 2003
COGNATE: INSTRUCTIONAL SYSTEMS TECHNOLOGY

Kelli Kleindorfer is currently an academic computer support specialist for the College of Business, Industry, Life Science, and Agriculture at the University of Wisconsin-Platteville. She provides computer support to one college with approximately 150 faculty and staff members. There are more than 463 computers in her support area, including more than 12 computer labs and classrooms. She also supports the high-tech classrooms on campus, which includes installing new systems and troubleshooting.

Kleindorfer's day-to-day work consists of troubleshooting and preventing problems on all the computers in the college. She works on lab images for both Windows and Macintosh labs. She is also working on a high-tech classroom Web portal to give information and instructions and to allow problem notification online. Kleindorfer feels higher education is an excellent employer because universities are constantly changing with technology.



Jenifer Lasimbang, MS'03 (HCI), works at the University of Malaysia.

Dewitt T. Lawrence, AS MAT'02, BGS'03 (media arts and science), is a designer for Graphx Industries.

Timothy P. Maher, BA'92, AAS'93, MS'02 (media arts and science), works for Wolf Technical Services in Indianapolis.

Bryan Martin, CACS'03, BS'03 (media arts and science), is a digital imaging technician for Wiesner Publishing in Denver, Colo.

Julie Martin, BS'03 (health information administration), is the manager of the health information department for Indiana Heart Physicians in Beech Grove, Ind.

Josh Moline, BA'97, MS'03 (HCI), is employed at Tam Communications, San Jose, Calif.

Matt Molter, BA'01, MS'03 (HCI), joined Baker Hill in Indianapolis, Ind.

Joy Nellis, CACS'03, BS'03 (media arts and science), is a multimedia specialist at the IU School of Medicine, Center for Computational Biology and Bioinformatics, in Indianapolis.

Luke Newton, CACS'02, BS'03 (media arts and science), is the director of interactivity for Thomas P. Miller & Associates LLC.

Lien Quan Nguyen, AS'00, BS'00, MS'03 (media arts and science), is working for the Indiana Web Academy in Indianapolis as a programmer/analyst.

Jim Odom, MS'03 (media arts and science), works for inMac Solutions Consultants Network.

Ann Shull, CACS'02, BS'02 (media arts and science), is a designer and project manager for Resite Information Technology in Bloomington, Ind.

Fredrik Skarstedt, BS'03 (media arts and science), works for Affectworks in Indianapolis.

Haifeng Zhao, MS'03 (bioinformatics), is employed at GenWay Biotech Inc., in San Diego, Calif.

Sihui Zhao, MS'03 (bioinformatics), is pursuing a PhD at the University of North Carolina.

Jason Zickler, BS'99, MS'00 (media arts and science), is vice president for design and new media at Pathway Productions, Indianapolis.

Our alumni at work

David Doll

ASSISTANT DIRECTOR, SCORE EDUCATION,
CHICAGO, ILL.

BS INFORMATICS, AUGUST 2003

COGNATE: INSTRUCTIONAL SYSTEMS TECHNOLOGY

David Doll is an assistant director at Score Education in Chicago. In his position, he teaches children to learn in a technology-enriched environment. He uses a computerized curriculum and helps in adjusting the lessons to meet the children's needs and educational goals.

New program for young women encourages interest in IT

"There are many studies which indicate that girls are less likely to become involved with computers and technology than boys. Most girls, when they begin planning for careers, think of nursing, possibly medicine or the law. Very few picture themselves working in the field of information technology."

So says Nycole Johnson, graduate of the School of Informatics' New Media Program in Indianapolis, who is working to encourage young girls to consider computing careers. She is creator and manager of a new program, sponsored by the Indianapolis Urban League, called Soon to Make a Difference in the Community, or SMD.com. Aimed at girls ages 12 to 16, with a special focus on minority teens, the program is designed to encourage and enable their involvement with computer technology. The program is an extension of the urban league's mission "to assist African Americans and other minorities in achieving social and economic equality."

Originally from East Chicago, Ind., Johnson has experienced some of the same challenges as program participants. "Even though we were poor," Johnson said, "we could not tell it. Although my mother was a low-income single mom, she always made sure we had whatever we needed."

Johnson became a student at IUPUI in 1996, majoring in communication studies. Her area of interest at that time was radio communication. But, her interests seemed to be changing, and Johnson noticed that not only were her computer science classes quickly becoming her favorite classes, but her grades in those classes were better as well. She was considering changing her major when a counselor mentioned a new program: New Media.

She was immediately interested. Johnson says, "I really liked using the computer in a creative way. As a young female student, I was somewhat intimidated that some male students were better with computer coding, but I think and learn visually and I knew I had creative talent." Throughout college, Johnson was a full-time student, cared for her young son, and worked about 35 hours per week. She received an AS in media arts and technology in May 2002 and completed a BS in general studies in December 2002. She has now worked full-time at IUL for about a year and plans to apply to the new media graduate program in the spring of 2005.

At the request of her supervisor, Johnson began working on the development of SDM.com. in the spring of 2003. Since its creation, she has held three group sessions, with instruction in computer basics involving approximately 31 girls. Participants worked with basic software applications, performed project work, and toured technology schools at IUPUI, including the School of Informatics.

Johnson is a member of Women in Informatics at IUPUI, serves on a Web Committee at IUL, and, in addition to her regular responsibilities, teaches some computer technology courses for IUL.

"It is a true blessing to have the chance to persuade both older and younger people to get more involved in technology," Johnson says. "I believe the individuals who have participated in classes have added information technology to their list of possible careers."



Nycole Johnson

Alumnus finds new media background invaluable

News from a member of the New Media Program's first graduating class: Mike Muldoon

When Mike Muldoon began designing interactive computer simulations at age 14, the term "new media" didn't exist. According to Muldoon, when he was accepted to the fledgling New Media Program at IUPUI, he was ecstatic. "This was part of my childhood dream," he says. Graduating in 1999 with a BS in media arts and science, Muldoon was among the first graduates of the program.

So, where is Muldoon now? He is currently the coordinator of computer applications for Florida State University Housing in Tallahassee, Fla. He is responsible for staff computer training and for responding to hardware, software, and network concerns for selected administrative housing units and student computer labs. He constructs, maintains, and revises Web sites and intranet sites for the department and has full responsibility for two Web sites: www.housing.fsu.edu

and www.childcare.fsu.edu. In consultation with other university systems staff, Muldoon works to develop, maintain, and review housing systems, database designs, and special projects. He assists residence life staff in the investigation of any computer-related misuse and abuse. Muldoon is also responsible for interpretation of policy and procedure as related to privacy, network hardware and software acquisition, use, support, security, and backup for students and staff, as well as planning for the purchase of new and upgraded computer hardware and software.

Muldoon found that the overall design of the New Media Program suited the "real-world" needs of employers. He is convinced that the skills he learned as a student — cross-platforming, networking, HTML programming, Web site design, graphic design, and presentation skills — have been invaluable in his career.

Send us your news! Fill out the coupon on page 24 and mail it or fax it to us. We want to hear from you!

Our alumni at work

Seema Desai

PROGRAM COORDINATOR, CAREERSINSITE,
TECHPOINT, INDIANAPOLIS, IND.
BS INFORMATICS, MAY 2003
COGNATE: PSYCHOLOGY

Seema Desai is a program coordinator for careersINsite, which is an initiative of TechPoint (located at Intech Park on the northwest side of Indianapolis). TechPoint is a statewide, nonprofit organization dedicated to "advancing technology and business in Indiana." CareersINsite exists to build awareness of technology companies that reside in Indiana and of the career opportunities they offer. The overall goal of careersINsite is to increase the number of highly skilled workers in the state to promote the continued growth of Indiana's technology based industries — life sciences, advanced manufacturing, information technology, and 21st-century logistics. CareersINsite does this by encouraging technical graduates from Indiana to stay in the state and by attracting technical graduates from other Midwestern states to Indiana.

Desai's job is to represent careersINsite at career fairs throughout the Midwest to build relationships with students, colleges, and universities, and businesses in the state. She assists in planning and coordinating on- and off-campus events, such as seminars, presentations, conversations with industry leaders, and other networking events that allow students and university personnel to interact with Indiana employers. By establishing good working relations with the regional directors of

commerce, She was able to extend the careersINsite program across the state. Other responsibilities include assisting TechPoint's event manager to present signature events, such as Tech Tuesdays, Million Dollar Awards, Entrepreneurial Bootcamp, and other networking events. In addition, she is responsible for maintaining the careersINsite Web site, researching and writing the electronic newsletter, and managing the TechPoint/careersINsite's online Job Center.

Chris Myszkowski

INTERNET/IT MANAGER, MIKE RAISOR AUTOMOTIVE
GROUP, LAFAYETTE, IND.
BS INFORMATICS, MAY 2003
COGNATE: INSTRUCTIONAL SYSTEMS TECHNOLOGY

Chris Myszkowski is the Internet/IT manager for Mike Raisor Automotive Group in Lafayette, Ind. In this position, Myszkowski maintains a dynamic Web site that covers nine car dealerships and one Powersports division (ATVs, snowmobiles, boats, motorcycles, et cetera).

Myszkowski will join the Secret Service this spring as a uniformed division officer in Washington, D.C. After six months of intensive Secret Service and basic training, Myszkowski will be assigned to White House Security, where he will gain experience with all of the uniformed division teams, including snipers, emergency response, crime scene investigation, canine, and bike patrol.



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Today, the Indiana University Alumni Association serves more than 450,000 living graduates around the globe. Along with providing programs that raise tens of thousands of dollars annually for scholarships, creating commencement ceremonies that make lifelong memories, and welcoming alumni back through Homecoming and a variety of other special events, the IUAA connects alumni to each other, and to their alma mater, through clubs, travel, learning experiences, and many other rewarding opportunities.

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Vision

Informatics studies the application of information technology to the arts, sciences, and professions, and its use in organizations and in society at large. The Indiana University School of Informatics has set as its goal to be nationally recognized as the foremost in the country for excellence and leadership in informatics programs, including undergraduate and graduate education, research, placement, and outreach.

Mission

We believe there is great need and opportunity for professionals trained in state-of-the-art information technology and science with an emphasis on creative human applications. There is an urgent need in our society for graduates with education and experience in informatics, particularly with interdisciplinary skills. The School of Informatics will be foremost in the country to graduate professionals with formal preparation in information technology with subject area expertise. To this end, we will:

- Lead the nation in the development of an innovative and successful new curriculum for information technology and its applications;
- Educate students, including those who might not traditionally consider an educational path in technology, especially women and minorities;
- Encourage interdisciplinary research projects in the field of Informatics, focusing on distributed systems technology, information theory and information management, human factors and Human-Computer Interaction, and study of the social impacts of information technology;
- Serve the state of Indiana by way of education, community participation, and collaborative research partnerships, thereby participating in the growth of an IT culture in the state and encouraging continued economic development;
- Produce graduates who become leaders in the growing information economy of Indiana and the world; and
- Develop synergistic relationships with industry to develop and advance research in information technology and its applications.

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Informatics alumnus writes in with news

To: Dean Dunn
From: Josh Moline
Date: March 27, 2004
Re: Keeping in touch

It was great seeing both you and the rest of the informatics team yesterday. Thanks for taking the time to show me some of the changes that are happening there. Things look busy and very progressive! Here is a detail of what I've been up to since graduating last August.

While I still live in Indiana, I am working on a number of business ventures. I am the director of HCI and information technology for an emerging company in Los Angeles called Memestream Inc. I provide the balance between the business, design, and development worlds, as I have experience in all of these areas. My MA in informatics has been beneficial, bringing me respect and faith from both new and old business relationships.

I am also involved in an online gaming venture using Macromedia Flash MX 2004 Pro. I am the lead user-interface designer, lead developer, and lead system engineer. I am also participating in Macromedia's beta program for the Linux version of Flash Player 7. As a result of this project's extensive use of Macromedia, I am in the process of completing a developer certification in Flash MX 2004.

My master's thesis focused on the benefits of technology in archaeology, aka "archaeological informatics." I am happy to report that my interest and involvement in this area have grown as I continue to nurture ideas and contacts with others interested in exploring technology's benefits to archaeology.

As you can see, I have been very busy these past eight months since graduation. I will stay in touch with the school and be involved however I can. Good luck with the continued success of the School of Informatics.

I am proud to be an alumnus,
Joshua Moline
MA'03 (HCI)



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