ISR*Connector*

INSTITUTE FOR SOFTWARE RESEARCH / UNIVERSITY OF CALIFORNIA, IRVINE

HOT RESEARCH

A New Perspective on Software Testing

A stubborn challenge of software engineering has been how to incorporate the complex range of stakeholder goals, purposes and potential uses into the systems developed for and delivered to those users. This problem spans most if not all software development activities, from user goals to requirements engineering, through software architecture and design to implementation and testing.

A group of ISR researchers at UC Irvine is tackling this problem with a comprehensive approach that combines elements from stakeholder goal analysis through specification-based testing. The group is led by ISR faculty member **Debra J. Richardson**, Dean of the UCI Bren School of Information and Computer Sciences (ICS), and includes ISR faculty member **Thomas Alspaugh**, ICS faculty member and ISR Alumnus **Hadar Ziv**, several graduate student researchers, and

Ziv, Richardson and Alspaugh

Thomas Standish, ICS Professor Emeritus. Professor Richardson pioneered *specification-based testing*, an improved approach to software testing driven by the specification of expected behavior – thereby testing what a system should accomplish rather than simply the code. Her research addresses specification-based test *criteria* which identify tests that cover specification-level structures, and specification-based test *oracles* which enable automatic checks of execution results against specified expected behaviors.

Viewing testing as a critical partner in software development, the ISR researchers' current goal is to advance the common cause of helping software developers deliver systems that meet comprehensive stakeholder and user goals. By taking a broader view of the development process, the research is progressing beyond specification-based testing to a new, higher-yielding and more efficient scenario-based paradigm. Key aspects of this promising research include the following.

- *Scenario-based requirements and testing*
  Alspaugh and his students are developing ScenarioML, an XML-based language for specifying requirements using scenarios. The work includes development of the language itself, tools for authoring and viewing scenarios, tools for scenario analysis, and mechanisms for scenario change management. To complement the new language, Richardson's research team is investigating the extension of specification-based testing for application with scenario specifications, in effect making the scenarios the specifications. Currently they are focused on the identification of test scenarios within ScenarioML and prioritizing test cases based on the networks formed by ScenarioML.

- *Architecture-based testing and analysis*
  To predictably and reliably build complex systems, components must be analyzed not only independently but also in the context of their connection to other components. This requires taking a broader view, coordinating analysis at a higher level of abstraction – at the software architecture level, where the building blocks of components, connectors, and their configuration are better understood and adaptable. With alumnus **Marlon Vieira** (Ph.D. 2003), graduate student

RESEARCH BRIEFS

New ISR awards include grants for: "Better Science through Benchmarking: Theory Validation and Applications to Software" ($270,000, **Susan Elliott Sim**) from the NSF Division of Computing and Communication Foundations ; researching the technology needs of ecologists ($15,000, **Bonnie Nardi** and Susan Elliott Sim) from the Newkirk Center for Science and Society (for more information on these grants and on Sim see Focus on Faculty article on p. 3);"Self-Adaptive Software" ($270,000, **Richard N. Taylor**) from NSF Computing and Communication Foundations; a supplement to the NSF ITR grant "An Integrated Social and Technical Approach to the Development of Distributed, Inter-Organizational Applications" ($90,900, **Alfred Kobsa**); and a grant from NASA Jet Propulsion Laboratory, as subcontract to the University of Southern California ($80,130, **Nenad Medvidovic** and Richard N. Taylor).

Crista Lopes was among a select few of the nation's brightest young scientists nominated by peers and invited to participate in the prestigious National Academy of Engineering's 10th annual Frontiers of Engineering symposium. The event, held in September at the National Academies' Beckman Center on the UC Irvine campus, brought together a diverse group of innovative engineers in industry, academia and government who perform cutting-edge research and technical work.

David Redmiles has been named Chair of the Department of Informatics, succeeding the department's first Chair Richard N. Taylor. Redmiles is General Chair of the ASE 2005: 20th IEEE/ACM International Conference on Automated Software Engineering in Long Beach (see article on p. 8).

Paul Dourish has been named Associate Director of Research for the UCI division of the California Institute for Telecommunications and Information Technology Cal(IT)^2. Dourish will foster interdisciplinary collaborations as he develops research agendas for the division.

More Research Briefs on page 2.

IN THIS ISSUE:

RESEARCH BRIEFS

Paul Dourish, who has been exploring "Trustable Technology" with **David Redmiles** on a two-year grant from Intel, has forged several collaborative research relationships with the company. This year alone, he has co-authored a number of papers with Intel scientists (Genevieve Bell, Kenneth Anderson, Ian Smith, Anthony LaMarca, and Sunny Consolvo); made a presentation at Intel Research Berkeley; and welcomed new graduate student **Jennifer Rode**, who just completed an Intel internship.

Two of **Alfred Kobsa's** many research activities have been featured in the news lately. The journal he founded in 1991, *User Modeling and User-Adapted Interaction: The Journal of Personalization Research*, was recently ranked 6th among 451 international computer science journals, based on Thompson Scientific's Impact Factor calculated annually in cooperation with the Information Science Institute. In addition to his Editor-in-Chief role, Kobsa has been noticed for human-computer interaction studies. In May, he presented results of a joint study with Humbolt University (Berlin) at the 4th Workshop on Privacy Enhancing Technologies in Toronto. According to the study, titled "Contextualized Communication of Privacy Practices and Personalization Benefits: Impacts on Users. Data Sharing Behavior," online shoppers buy 33% more products when they adopt Kobsa's privacy disclosure system, as compared with standard privacy policy statements. The research paper, which contains an example of a web design template, is available at *http://www.ics.uci.edu/~kobsa/papers/2004-PET-kobsa.pdf*.

Marcio Dias (Ph.D. expected December 2004), and support from DARPA and NSF, Richardson developed Argus-I, a comprehensive set of tools for architecture-based testing and analysis. ARGUS-I facilitates iterative and evolvable analysis during architectural specification and component implementation, supporting both structural and behavioral analysis. The current version of ARGUS-I works with C2 style architectures (described in xADL) augmented with component behavior specification in State Charts. (See the Argus-I Technical Bulletin at *http://www.isr.uci.edu/flyers.html* for more details.) With visiting researcher Henry Muccini of the Dipartimento di Informatica, University of L'Aguila, Italy, the team has also been using software architecture as a reference model for code conformance testing to check if an implementation conforms to its specification at the architecture level.

- *Aspect-oriented testing*
  Aspect-Oriented Programming (AOP) provides new tools and ways to handle crosscutting concerns in programming. Fully realizing the potentials of aspect-oriented software development requires new techniques for testing and new ways to identify crosscutting concerns earlier in the lifecycle, such as by stakeholder goal analysis. A recent paper by graduate student **Yuewei "Joanna" Zhou**, Richardson and Ziv presented at Net.Object Days 2004 (a prominent international conference for Internet-based technologies) describes a first step toward a practical way of testing aspects and aspect-oriented programs by combining testing with aspect weaving. The proposed approach includes an algorithm to select test cases that are relevant to aspects under test and a testing coverage definition to specify test sufficiency for a tested aspect. Future collaborative efforts in this area include a project with ISR faculty member **Crista Lopes** (the "mother" of AOP) on testing aspects expressed in her new aspect language AML, and with ISR faculty member **André van der Hoek's** team extending architecture-based testing to aspect-oriented architectures.

- *Specification-based regression testing*
  Regression testing is expensive, but a critical activity throughout software evolution to ensure that modified versions of the system do not "regress." As software evolves, it is likely that both the implementation and the system specifications will change. Richardson has been working with graduate student **Lihua Xu**, Marcio Dias, and Henry Muccini on ways to use specifications to track these changes and improve regression testing. Using system specifications to guide regression testing is argued to be more accurate and cost effective than code-based regression testing. The team is exploring how the reuse of earlier architecture-based tests can be used to test a modified implementation for conformance with the architecture. An alternative approach uses model checking to reason between two versions of software specifications and generate safe and minimal regression tests for the updated software specifications. The researchers are working towards extending this body of work to scenario-based regression testing.


Xu

- *Specification-based residual testing*
  Richardson and graduate student **Leila Naslavsky** are exploring residual (post-release) testing as a means of improving the quality of software that is released before it has been adequately tested. Residual testing keeps track of system execution in the user environment; the researchers' goal is to consolidate monitored executions of multiple deployments for extended test coverage as well as other information that can be used to improve the product. This is based on specification-based test coverage criteria so as to avoid undue performance degradation on the deployed applications. With **David Redmiles'** group, Richardson and Naslavsky are also exploring expectation-driven residual testing, which will support comparisons of actual and expected use as defined by scenarios. This will require enhanced monitoring capabilities and key event specification, such as provided by Dias' MonArch system.

- *Traceability*
  To be useful, the comprehensive approach described above must support forward and backward traceability between the elements, tracing from goals to user-scenarios to test-scenarios to test cases and test results, and from user-scenarios to software architectures, designs, and implementations. Collaborations with van der Hoek suggest version control systems can be used to manage requirements configurations (specifically, usage scenarios), and to link these scenarios to other managed artifacts such that both artifacts and their relationships are under configuration management control.

For more information on ISR testing and analysis research, see:

http://www.isr.uci.edu/research-analysis.html
http://www.ics.uci.edu/~djr/research.html
http://www.ics.uci.edu/~rosatea/

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FOCUS ON FACULTY

Meet Susan Elliott Sim, Community Maven

Susan Elliott Sim <*http://www.isr.uci.edu/~ses/*> joined the UC Irvine Informatics faculty in September, 2003, as an Assistant Professor of Information and Computer Science. She received her Ph.D. in Computer Science from the University of Toronto and has been a researcher with IBM Canada Ltd., Ontario Telepresence Project, and the National Research Council of Canada.


Sim

Driving all of Susan's research interests is the desire to create technologies that help people work more effectively. Her research has ranged from creating tools that help software developers understand source code, to assisting software maintainers choose appropriate reverse engineering tools, to creating a standard file format for helping researchers as they use others' tools. The needs of end users, as individuals and especially as communities, are key motivators for Susan's research in software engineering.

Susan has become well known for conducting community-based evaluations of software tools, that is, for understanding and creating benchmarks. In addition to producing two widely used benchmarks (the *xfig* Challenge for program comprehension tools, and CppETS for fact extractors), Susan's research has generated a key theory that explains how benchmarking works within scientific communities. This research has been embraced enthusiastically by the software engineering community and has improved the quality of information technology.

Susan's ongoing benchmarking research is currently being funded by the National Science Foundation and has attracted the interest of an international audience. She recently was invited to give presentations at the National Institute of Standards and Technology and the Open University in Milton Keynes, UK; to be an outside expert to the European Science Foundation; and to co-chair a workshop in Japan on comparative evaluation.

Susan was a key member of a multinational creation team that gave us GXL, the Graph eXchange Language, which facilitates sharing of graphical and other data between software tools. Originally developed for the reverse engineering, graph transformation and graph drawing communities, GXL has expanded application beyond these groups to dozens of research labs around the world in diverse fields such as statistical and genomic analyses. (A full list of applications can be found at *http://www.gupro.de/GXL*). Susan's current work in this field, funded in part by IBM, seeks to bring together GXL and its research-grade innovations with the industrial strength Eclipse framework, which provides a universal extensible development toolset.

With ISR colleague **Bonnie Nardi** (see ISR *Connector* article, Fall/Winter 2003 issue), Susan is facilitating collaboration in an interdisciplinary digital work environment. Ecologists, who study interrelationships between the earths' organisms and their environment, need better technical tools as they integrate results across studies to form global models. With support from The Newkirk Center for Science and Society, Susan and Bonnie will provide new technologies for the collection, integration and distribution of ecological data, based on a deep understanding of ecologists' work practices.

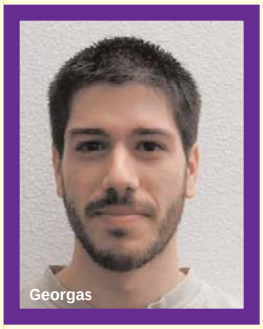
Susan can be reached at ses@ics.uci.edu, (949) 824-2373.

ISR Grad Students: "How I Spent My Summer"

The ISR environment encourages partnerships with industry for many reasons, not least of which is to create technologies of widespread value. Throughout their ISR tenure, our graduate students seek positive interactions with companies through research projects and meetings, presentations, and internships.

The following list of internships and other positions served by ISR students in the summer of 2004 attests to the breadth of these valuable experiences, including the lasting benefits for everyone—students, their faculty advisors, ISR and other research affiliates, the mentors, and the many companies who come to know ISR and our students.

The Aerospace Corporation
El Segundo, California
Working with Aerospace scientist Michael Gorlick of Aerospace's Computer Systems Research, **John Georgas** (R. Taylor, advisor) developed an experimental, all-digital, distributed system intended for application in rocket launches. The system was designed and built using the principles of raging incrementalism, a development method applying open-source software and commodity hardware components, combined with protocol-based interactions in the REST architectural style (look for an article on REST in the next issue of the ISR *Connector*). Georgas and Gorlick have collaborated on a submission to the Ground Systems Applications Workshop (GSAW) 2005 titled "The Programmatic Considerations of Hyperexponential Change," and are continuing their work in the context of satellite ground systems. Gorlick recently enrolled as a Ph.D. student in a cooperative effort between UC Irvine and The Aerospace Corporation.


Georgas

Scott Hendrickson (R. Taylor, advisor) worked with Senior Engineer Phillip Schmidt and the Aerospace Software Architecture and Engineering Department to create and implement an Eclipse-based REACT environment. REACT is an architecture-centric testbed whose goal is the early identification of architectural risk using aspect-oriented assessment techniques. Hendrickson is continuing his work at Aerospace part-time. The company is seeking relationships with additional ISR students during the coming year.


Hendrickson

DID YOU KNOW?

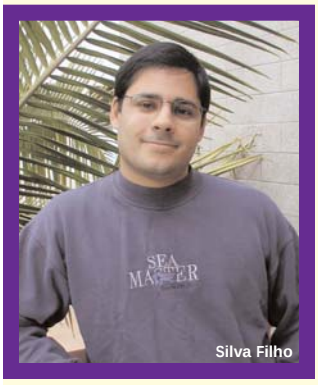
Did you know that Debra Richardson is Director of MICRO, the first industry-university cooperative research program in the University of California?

First American Title Corporation
Santa Ana, California


Asuncion

This is the second year **Hazel Asuncion** (R. Taylor, advisor) has worked with the Accounting Department of First American Title, first doing part-time accounting work, then as a software development consultant. This year she provided solutions that automated much of the company's manual processes, including electronic statements, various reports, and the reconciliation process. For the latter, she developed a program that could reconcile more than 98% of their transactions. Working with customers in the real world yields invaluable perspective for Asuncion's studies of advanced development concepts. The company, meanwhile, has put her knowledge to good use. Whereas most software development is done in-house by a sister company, causing big delays, Asuncion does it all for her department in a fraction of the time: research, development, programming and user training.

IBM Research
Cambridge, Massachusetts and Hawthorne, New York
Working with Werner Geyer in the Collaborative User Experience (CUE) group, **Roberto Silva Filho** (D. Redmiles, advisor) did a comparative study of different architectural designs for the implementation of a blended (synchronous and asynchronous) collaboration server. Two different architectures with their prototypes and a simulator were produced and performance tested.


Silva Filho

Leila Naslavsky (D. Richardson, advisor) worked with the Programming Languages and Software Engineering group on a requirements management project.

Mentored by Jennifer Lai of the Emerging Interactive Spaces, Next Generation Computing group, **Sameer Patil** (A. Kobsa, advisor) used a workplace awareness application, mySpace, to design a study of how users trade-off between providing awareness of one's activities to colleagues and protecting their personal privacy.

Working with Susanne Hupfer and the JAZZ team, **Anita Sarma** (A. van der Hoek, advisor) created a search engine to enhance collaborations in the team space, which is a common room for sharing ideas, placing documents, posting Q&A, etc. The search engine, which can parse RSS feeds and XML documents, index them, search over the index and incrementally update it, is architected to easily index many kinds of documents (pdf, Word, etc.).

Under the direction of Li-Te Cheng, CUE researcher and intern coordinator, **Cleidson de Souza** (D. Redmiles, advisor) worked on the JAZZ collaborative software development project, conducting a field study of a distributed software development team.

Under the direction of Dan Gruen (CUE), **Norman Su** (Interactive and Collaborative Technologies group) developed a context-aware system for note taking. Through the use of sensors, the system gathers environmental data which become part of the note taking record. The system is a server-client system developed for Windows Tablet PCs.

Joint papers and major conference presentations are a common mutual benefit of internships. For example, two such papers were presented at this year's leading conference that addresses technologies that affect groups, the 2004 Computer Supported Cooperative Work (CSCW) conference in Chicago. Sarma with advisor A. van der Hoek and IBM's Li-Te Cheng presented their paper at the "Eclipse as a Vehicle for CSCW Research" Workshop. Cleidson de Souza with advisor D. Redmiles and IBM researchers Cheng, Millen and Patterson presented their paper, "Sometimes You Need to See Through Walls—A Field Study of Application Programming Interfaces" in the CSCW Technical Program session on "Knowledge

DID YOU KNOW?

Did you know that Profs. Taylor and Richardson are founding members of both ISR and its predecessor, the Irvine Research Unit in Software (IRUS)?

ISR ALUMNI NEWSBRIEFS

Danyel Fisher (P. Dourish, advisor) received his Ph.D. in August 2004. His dissertation was titled "Social and Temporal Structures in Everyday Collaboration." Fisher has accepted a position with the Community Technologies group at Microsoft Research <*http://research.microsoft.com/~masmith/*>. For ongoing and current information on Fisher's research and commentary, check his blog named "Made Out of People" at *http://drzaius.ics.uci.edu/blogs/danyelf*. Or find him in Chicago November 6-10 at the ACM Conference on Computer Supported Cooperative Work (CSCW 2004), where he is co-chairing a workshop on "Social Networks for Design and Analysis: Using Network Information in CSCW" <*http://www.ischool.washington.edu/mcdonald/cscw04/*>.

Chris Lüer (A. van der Hoek, advisor), who defended his dissertation in August 2004, has accepted an Assistant Professor position in Computer Science at Ball State University in Muncie, Indiana. More information on his dissertation, "User-Centric Deployment Support in a Component Platform," and other research can be found at *http://www.cs.bsu.edu/homepages/chl/research.html*.


Lüer

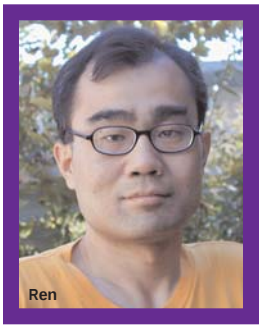
Suzanne Schaefer (G. Mark, Advisor) received her Ph.D. in August 2004. Her dissertation is titled "Informing Information Technology (IT) Design: Multiple Differential Boundary Objects in California Public Higher Education Curricular Articulation." Suzanne is a currently a post-doctoral researcher at UCI/ICS.


Schaefer

Sharing in Software Engineering." Meanwhile, Silva Filho and his IBM mentors will be submitting a paper to another premier international conference, the 2005 Conference on Human Factors in Computer Systems (CHI). Similar activities were cited by all the ISR students.

NASA Ames Research Center
Moffet Field, California
As part of the Extensible Model-driven Program Synthesis project, **Eugen Nistor** (A. van der Hoek, advisor) worked with Ewen Denney and Bernd Fischer designing a new schema-based synthesis system that uses explicit domain models. Program synthesis is the automatic construction of correct and efficient code from high-level specifications. A joint paper on this work titled "The Role of Ontologies in Schema-based Program Synthesis" was presented at the Ontologies as Software Engineering Artifacts Workshop in association with the October ACM Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA 2004) in Vancouver.

PivX Solutions, Inc.
Newport Beach, California
As part of a collaborative effort between ISR and PivX, **Jie Ren** (R. Taylor, advisor) helped develop a secure software technology called Qwik-Fix Pro, an innovative product protecting Windows systems using Active System Hardening. Working with distinguished Windows security researcher Thor Larholm, Ren and the team focused on uncovering software vulnerabilities and designing solutions to prevent them from being exploited. Ren, whose bent is practical, found the real-problem company-product focus to be a good match with his interests. He gained unique value from seeing the inside-out story of the security industry and where it's headed—from understanding how insiders think and observing how trade-offs are made between practicality and customer need, and learning where expertise lies in the industry. The company was surprised to find ISR graduate students to be a source of practical as well as traditional academic talent; they will sustain ties with Ren and have asked for referrals to other potential student interns.


Ren

WANT TO GET INVOLVED?

Sponsoring ISR has many benefits. It enables your company to form closer ties with our faculty and students, puts you on the fast track to our leading edge research, and gives you first crack at our experimental software tools. Choose from five levels of sponsorship:

Support Level	*Annual Contribution*	*Contribution goes to:*
Friend	$10,000	ISR's general research fund.
Affiliate—Research	$30,000	A designated ISR research area.
Affiliate—Visiting	$40,000	Host Faculty's research area.
Affiliate—Grad Student	$60,000	Graduate Student fellowship.
Partner	$100,000 or more	Large-scale research project.

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ISR Welcomes Visiting Researchers

Each year ISR hosts multiple visiting international scholars who stay in residence for up to two years. This fall we are fortunate to have three such researchers. In September **Paul Dourish** welcomed visiting scientist **Akira Karasudani** of Fujitsu Laboratories Ltd. Japan for a one-year visit. Look for an article on Karasudani's visit in the next newsletter. As reported in the Spring/Summer 2004 ISR *Connector*, graduate student **Leonardo Murta** from the University of Rio de Janeiro, Brazil, is visiting with **André van der Hoek** and his research team this fall. And **Rogério DePaula**, a postdoctoral researcher from Brazil by way of the University of Colorado, is working with **David Redmiles** and Paul Dourish for the next year or more. An in depth look at DePaula's ISR connection illustrates one way visitors find their way to ISR—through research synergies.


DePaula

DePaula graduated as an electrical engineer in 1993 from the Federal University of Minas Gerais, Brazil, and worked for the following three years in a Brazilian telecommunications and information systems company as part of a software development team that also became involved in hardware design. In the process of understanding client needs

New ISR Technical Reports

ISR technical reports present information resulting from student and faculty research carried out under the auspices of the Institute. They showcase early results not available in print elsewhere. All ISR technical reports are available in PDF on the ISR web site. The most recent reports include:

"A Need Hierarchy for Teams"
Anita Sarma and André van der Hoek, UCI-ISR-04-9, October 2004

"The Aspect Oriented Markup Language and its Support of Aspect Plugins"
Cristina Videira Lopes and Trung Chi Ngo, UCI-ISR-04-8, October 2004

"Preserving Versatility in Event-Based Middleware"
Roberto Silveira Silva Filho and David F. Redmiles, UCI-ISR-04-7, October 2004

"A Survey of Trust Management and Resource Discovery Technologies in Peer-to-Peer Applications"
Girish Suryanarayana and Richard N. Taylor, UCI-ISR-04-6, July 2004

"An Automatic and Generic Framework for Ranking Research Institutions and Scholars based on Publications"
Jie Ren and Richard N. Taylor, UCI-ISR-04-5, June 2004

"Modular Security: Design and Analysis"
Jie Ren, UCI-ISR-04-4, June 2004

All ISR technical reports are available at:

http://www.isr.uci.edu/tech-reports.html

For more information, contact:

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through field work, DePaula's interests shifted from a purely technical focus toward the "softer" side of computing. He moved to the University of Colorado, Boulder, where he received an M.S. in Telecommunications in 1998, followed by a Ph.D. in Computer Science earlier this year. His advisor there was Gerhard Fischer. Fischer's research interests in human-computer interaction, design, and software engineering have led to multiple collaborations with ISR faculty.

In the past four years, DePaula's research interests focused on the design, development and use of innovative and collaborative technologies, including the social networking aspects. For his dissertation he studied Web2gether, an online community supporting special needs education. Titled "Designing With and For Social Networks: Challenges and Opportunities of Groupware Design," the dissertation examined how everyone involved in the software development cycle contributes to the perceived usefulness of the developing technology. In particular, DePaula looked at how the perception of privacy varied among different actors and how it affected individual work practices.

These research activities brought to DePaula's attention the work of ISR researchers David Redmiles and Paul Dourish, part of a strong group of Interactive and Collaborative Technologies faculty at ISR/UCI, including recent addition **Bonnie Nardi**, a former DePaula dissertation committee member. With synergies developing with each of these researchers, DePaula was motivated to seek a post-doctoral position at ISR following his graduation. While here , he hopes to further develop his research agendas in information science, privacy/security from a socio-technical perspective, social computing, and the design and study of social network-based systems.

ISR STUDENT NEWSBRIEFS

Lihua Xu (D. Richardson, advisor) won the Best New Investigator award for her paper "Specification-based Regression Testing via Model Checking"at the October 2004 Grace Hopper Celebration of Women in Computing conference in Chicago. In addition to Xu, several other ISR women attended the conference: alumna **Suzanne Schaefer**, **Anita Sarma** (A. van der Hoek, advisor), and **Leila Naslavsky** (R. Richardson, advisor). Sarma attended on a scholarship representing ISR, which co-sponsored the event with a consortium of UCI organizations.

Roger Ripley, **Anita Sarma** and their advisor André van der Hoek presented their paper entitled "Workspace Awareness in Application Development" at the Eclipse Technology Exchange, an event collocated with the 2004 Object-Oriented Programming, Systems, Languages & Applications (OOPSLA) conference, held in Vancouver, B.C., in October.


Sarma and Schaefer

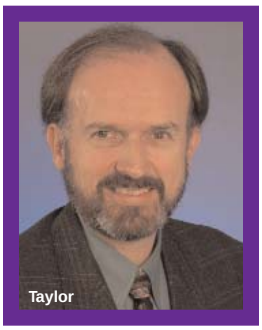
The paper "A Comprehensive Approach for the Development of XML-Based Software Architecture Description Languages" by **Eric Dashofy**, André van der Hoek, and Richard Taylor (Dashofy's advisor) will appear in *ACM Transactions on Software Engineering and Methodology*.


Dashofy

ISR Gives Back to the Software Community through Conference Support

ISR is currently active in supporting several major software conferences. This kind of community service has long been a tradition of ISR and its predecessor IRUS, entailing principal roles by both faculty and staff. For example, ISR Director **Richard N. Taylor** was Program Co-Chair of the 1997 International Conference on Software Engineering (ICSE '97); **Debra J. Richardson** was General Chair of the 16th IEEE International Conference on Automated Software Engineering (ASE 2001); Taylor serves on the ICSE Steering Committee; and both Richardson and Prof. **David Redmiles** serve on the ASE Steering Committee.

This year, Director Richard Taylor is General Chair of SIGSOFT 2004/FSE-12 in Newport Beach. The highlight of the conference is FSE– the International Symposium on the Foundations of Software Engineering–one of two premier annual conferences in software engineering, the other being the International Conference on Software Engineering (ICSE). FSE provides a strong platform for researchers and practitioners to discuss results of theoretical, empirical, and experimental work, as well as experience with technology transition. This year's FSE (November 2-4, 2004) features keynote speakers Alexander L. Wolf of the University of Lugano, Switzerland and the University of Colorado at Boulder, speaking on security engineering; Joe Marks, Director of Mitsubishi Electric Research Laboratories, who will address usability and software engineering; and Nancy Leveson of MIT, the 2004 SIGSOFT Outstanding Research Award winner, who will focus on software safety and systems theory. SIGSOFT 2004 is rounded out by a student research forum, tutorials organized through an Educator's Grant Program, and four outstanding workshops. More information about the conference can be found at *http://www.isr.uci.edu/FSE-12/*.


Taylor


Brodbeck with Shanghai representatives and ICSE 2006 organizers Dehua Ju (China) and Kouichi Kishida (Japan)

ISR's David Redmiles is General Chair of ASE 2005: 20th IEEE/ACM International Conference on Automated Software Engineering. ASE, as it is known, is a specialty conference bringing together researchers and practitioners to share ideas on state of the art solutions to problems that involve automated tasks. The conference often focuses on key problems the community is facing. For example, the emphasis for several years was on Microsoft and NASA's interests in testing and analysis of automated software. The 2004 conference in Austria attracted more than 230 delegates from over 30 countries. Next year's conference in Long Beach will draw not only from the international community, but have a strong Southern California presence. The conference web site, which is managed by ISR graduate student **Jie Ren**, can be found at *http://www.isr.uci.edu/ase2005/*.

A key ingredient in ISR's success as a provider of conference support has been the talent of **Debra A. Brodbeck**, ISR Technical Relations Director. Debra has been with the Institute and its predecessor research unit (IRUS) for 13 years. She graduated from UC Irvine with a B.S. in Mathematics, cum laude, and a B.S. in Information and Computer Science, Phi Beta Kappa. She earned an M.S. in Computer Science from the University of Pittsburgh. When she's not working on conferences and other events, she is involved in a wide variety of ISR activities, including proposal management, writing major reports, managing the ISR web site and email lists, and serving as a resource for technical information about the Institute. Debra has recently been tapped to be External Relations Director for the 28th International Conference on Software Engineering (ICSE), to be held May 20-28, 2006, in Shanghai, China. Debra excels in such roles and has a long history of conference support with both ISR and IRUS, including service activities for a number of past ICSE and FSE conferences. Working with former IRUS Director Leon J. Osterweil of the University of Massachusetts, she and ISR graduate student **Justin Erenkrantz**, ICSE 2006 Webmaster have posted preliminary information about ICSE 2006 at *http://www.isr.uci.edu/ICSE2006/*.


Erenkrantz

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