



# SYSTEMS SOLUTIONS

THE INSTITUTE FOR SYSTEMS RESEARCH

The  
Institute for  
**Systems**  
Research

## INSIDE

- 2 Director's Corner
- 2 ISR Distinguished Lecture Series
- 2 Major Awards: semiconductor manufacturing, reusable launch vehicles, digital libraries, vocal tract shapes, environmentally responsible manufacturing
- 4 Industry: Visiting Scientist Program, INRIA, technical summits
- 6 Faculty: awards, new hires, books published
- 6 Alumni: ISR grad instrumental in software firm, alumni hired in academia
- 7 Students: Five MSSE grads, scholarships and awards
- 8 Single photon tunneling, robotic birds, and HCIL advances make the news

## Four ISR faculty win MURI for scalable multilayer control of joint battlespace networks

Four ISR faculty are sharing a new \$4.3 million Air Force Multidisciplinary University Research Initiative (MURI) for "Scalable Multilayer Control of Joint Battlespace Networks."

ISR Senior Research Scientist **Stuart Milner** is the Principal Investigator; co-PIs are Professor **K.J. Ray Liu** (ECE/ISR), Professor **Christopher Davis** (ECE/ISR) and ISR affiliated Professor **Mark Shayman** (ECE).

Cornell, with PI Zygmunt Haas, and the University of Illinois (U-C), with co-PI is P.R. Kumar, also share the award.

The five-year award was one of 26 announced by the Department of Defense in March. The MURI program is designed to address large multidisciplinary topic areas representing exceptional opportunities for future DoD applications and technology options.

There is a basic limitation to the capacity of ad hoc, RF wireless networks. The team's integrated approach will develop network architectures that circumvent this fundamental limitation on performance scalability by utilizing:

- Topology control and physical layer technologies such as: high capacity, directional, wireless optical beams and smart RF antennas;
- Hybrid and content-based routing;
- Power control and dynamic base station assignment; and



Stu Milner, Chris Davis, Mark Shayman and K.J. Ray Liu

- Hierarchical routing and traffic engineering using dynamic overlays consisting of high bandwidth tunnels.

The project will integrate mechanisms from communications and networking technologies. These multilayer integrated control structures will use service, traffic, mobility, optical wireless propagation models, and radio/free space optics propagation impairment models to take proactive actions to maintain joint battlespace internets. The control structures will also be designed to take reactive actions to be able to respond to link failures and changes in group membership.

The basic research program will focus on theory and experimentation in scalable algorithms and topology control techniques for joint battlespace networks. [ES](#)


## Director's Corner



Since spring, when *System Solutions* last went to print, the progress of our faculty, staff and students has continued unabated. This issue gives a few highlights of some of our recent achievements as well as those of our alumni. To keep track of all that is happening at ISR, however, I suggest you check our web site, [www.isr.umd.edu](http://www.isr.umd.edu).

We are pleased to welcome our new faculty. There are two new joint appointments since the last issue of *System Solutions*: Professor G. (Anand) Anandalingam, the Ralph J. Tyser Professor of Management Science and co-director of the Center for Electronic Markets and Enterprise in the Robert H. Smith School of Business; and Assistant Professor Dimitrios Hristu-Varsakelis of the Mechanical Engineering Department. Assistant Professor Michel Cukier of the Materials and Nuclear Engineering Department and Assistant Professor Elias Balaras of the Mechanical Engineering Department have joined as affiliate faculty members.

An important development I'd like to bring to your attention is the establishment of the ISR Distinguished Lecture Series. We will host four eminent visitors (*see below*) this academic year as part of this series, two in the fall and two in the spring. Our fall dates are firm, and scheduling for the spring lectures is in progress. Please refer to the ISR web site for details. I hope that many of you will be able to attend these lectures and the associated round table discussions.

The work of the search committee for a permanent ISR Director is complete and I expect that an announcement will be made soon. I have enjoyed serving my friends and colleagues here as acting director for the past year, and I look forward to the coming years with continued great expectations for this outstanding and unique organization. 

## ISR Distinguished Lecture Series 2002–2003 schedule

**October 25** Professor **Bede Liu** of the Department of Electrical Engineering at Princeton will speak on "Video Re-Coding."

**December 6** Professor **Christos Papadimitriou** of the CS Division at Berkeley will speak on "Algorithmic Aspects of the Internet."

**Spring semester, TBA** **Dr. Eric Bonabeau** of Icosystem, Inc., Cambridge, Massachusetts. He is a leading expert on distributed problem solving, especially swarm intelligence and applications.

**Spring semester, TBA** **Dr. Alan J. Laub**, head of the Scientific Discovery through Advanced Computing (SciDAC) Program at the Department of Energy (on leave from UC Davis).


**Current information:** [www.isr.umd.edu/ISR/about/dls.html](http://www.isr.umd.edu/ISR/about/dls.html)

## majorAWARDS

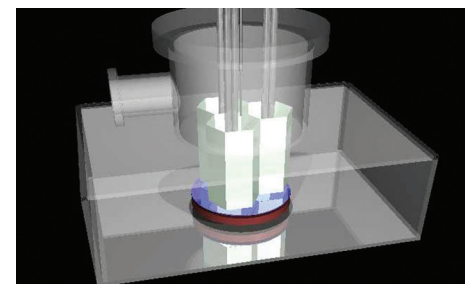
### Akin part of NASA reusable launch vehicle award

Associate Professor **Dave Akin** (AE/ISR) is part of a 10-person University of Maryland team that has won one of seven NASA University Research, Engineering and Technology Institutes (URETI) awards. URETI is a new program to strengthen NASA's ties with academia.

The new institute will address "Third Generation Reusable Launch Vehicles" and is funded at \$3 million per year for a minimum of five years.

Professor Mark Lewis (AE) is the principal investigator. Other Aerospace Engineering faculty include Norman Wereley, Darryll Pines, Ken Yu and Christopher Cadou. They are joined by Ashwani Gupta and Steven Buckley from Mechanical Engineering, Carol Smidts (MNE) and Andre Marshall (FPE). 

### Adomaitis, Rubloff win NSF semicon- ductor manufactur- ing grant



Associate Professor **Ray Adomaitis** (ChE/ISR) (PI) and Professor **Gary W. Rubloff** (MNE/ISR) are partners in a \$500,000 National Science Foundation (NSF) Information Technology Research (ITR)

grant, "Spatially programmable equipment: A new design paradigm for semiconductor manufacturing enabled by information technology."

The three-year project will develop a new paradigm for semiconductor manufacturing equipment—flexible equipment design enabled by information technology. The team will design semiconductor processing equipment with spatially programmed process conditions that will decouple manufacturing constraints from product performance; reduce experimentation time by enabling parallel, combinatorial experiments on each wafer; and provide flexible, extendable equipment technology.

The project has the potential to fundamentally change the design paradigm of a major industry—semiconductor-manufacturing equipment—to one that directly exploits a broad spectrum of information technology.

Visit the project web site at [www.isr.umd.edu/Labs/CACSE/research/progrxr/](http://www.isr.umd.edu/Labs/CACSE/research/progrxr/). [ES](#)

## Environmentally responsible product development grant for Herrmann, Schmidt, Sandborn

Associate Professor **Jeffrey Herrmann** (ME/ISR), Associate Professor **Linda Schmidt** (ME/ISR) and Associate Professor **Peter Sandborn** (ME) are the principal investigators for a new NSF Product Realization and Environmental Manufacturing Innovative Systems (PREMISE) grant, "Applying Decision Production Systems to Improve Environmentally Responsible Product Development." The 18-month project

begins January 2003.

Environmentally responsible product development (ERPD), also known as environmentally benign manufacturing, considers both environmental impacts and economic objectives during the activities that accompany product development.

There are many ways to minimize the environmental impacts that products generate throughout their life cycle. The greatest opportunity for ERPD occurs during the product design phases, when designers and others make the decisions that determine most of the product's environmental impact.

This research seeks to understand how product development organizations use environmental information in their decision-making.

The research will explore a novel, systems-level paradigm to develop new insights into the behavior of product development organizations. The research will integrate research and education by using the research results to enhance and create courses.

More information is online at: [www.isr.umd.edu/ISR/publications/newsletter/sssp02/HerrmannSchmidtgrant.html](http://www.isr.umd.edu/ISR/publications/newsletter/sssp02/HerrmannSchmidtgrant.html). [ES](#)

## HCIL researchers receive NSF grant for Children's International Digital Library

Researchers in the Human-Computer Interaction Laboratory (HCIL) have received a grant from the National Science Foundation (NSF) to develop an international digital library for children.

Assistant Professor **Allison Druin** (EDU/UMIACS/ISR), Ben Bederson and Ann Weeks received the NSF Information

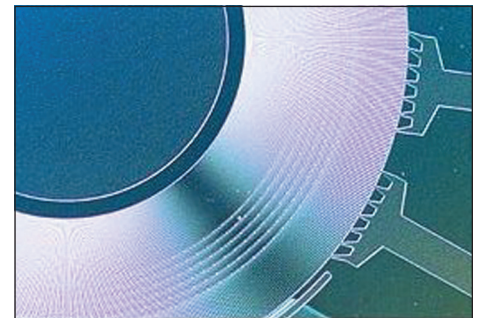
Technology Research grant worth \$3 million over five years.

The project will develop the Children's International Digital Library, a comprehensive library of international children's literature available across the globe. The library aims to cost-effectively digitize massive amounts of information dedicated to the needs of children, using technology to help strengthen existing libraries worldwide by providing a large-scale digital archive of literature for children ages three to 13.

The Maryland researchers will address the issues of searching/browsing/sharing technologies for children and develop a testbed using large amounts of digital information.

Additional information is online at [www.archive.org/children/](http://www.archive.org/children/). [ES](#)

## DURIP grant enables purchase of MEMS tool



This MEMS micro-motor was produced with a CMP tool. (Photo courtesy Felice Frankel)

Assistant Professor **Reza Ghodssi** (ECE/ISR) is the principal investigator for a Defense University Research Instrumentation Program (DURIP) award from the Army Research Office. The \$180,000 award is being used to purchase a Chemical Mechanical Planarizer (CMP) tool. Co-PIs for this award are Professor **Gary Rubloff** (MNE/ISR) and Assistant Professor **Elisabeth Smela** (ME).

"CMP will be a pivotal capability for

**continued on page 5**

## MEMS tool

continued from page 4...

MEMS-based research in wafer alignment and bonding, multilevel MEMS structures, novel structures with conformal coatings and 'systems-on-chip,'" Ghodssi says. Ghodssi directs the MEMS Sensors and Actuators Lab. [ES](#)

## Espy-Wilson receives NIH grant for vocal tract shapes

Associate Professor **Carol Espy-Wilson** (ECE/ISR) is participating in a \$1.5 million grant from the National Institutes of Health's (NIH) National Institute on Deafness and Other Communication Disorders for "Acoustics of Vocal Tract Shapes for Liquids."

The images collected will aid in the understanding of vocal tract acoustics and articulatory variation in speech. The results should improve speech recognition technologies and the implementation of articulatory and acoustic biofeedback therapy techniques.

The research is being done jointly with Suzanne Boyce at the University of Cincinnati and Mark Tiede, who has a joint appointment at Haskins Laboratory in Connecticut and in the Research Laboratory of Electronics at MIT. [ES](#)

## Milner wins MIPS grant for optical wireless communications

ISR Senior Research Scientist **Stuart Milner** is the project director for a new Maryland Industrial Partnerships (MIPS) grant. The project is titled "Advanced Transceiver Acquisition and Tracking for Optical Wireless Communications" and the industrial partner is Rockville-based LumenLink, Inc. [ES](#)

## Distributed Immune Systems URI project review held at ISR

ISR hosted a July project review for the Department of Defense University Research Initiative (URI), "Distributed Immune Systems for Wireless Networks Information Assurance." More than 35 people working on the project attended.

ISR faculty: Principal Investigator **John S. Baras** (ECE/ISR); Professor **Carlos Berenstein** (Math/ISR); Professor **Anthony Ephremides** (ECE/ISR); Professor **K.J. Ray Liu** (ECE/ISR); Assistant Professor **Haralabos Papadopoulos** (ECE/ISR) and Professor **Nicholas Roussopoulos** (CS/UMIACS). Professor **Virgil Gligor** (ECE) is also on the team. [ES](#)

## SHOP2 wins prize in international planning competition

Professor **Dana S. Nau's** (CS/ISR) artificial intelligence planning system SHOP2 won a "distinguished performance" prize at the Artificial Intelligence Planning and Scheduling Conference (AIPS-2002) this April in Toulouse, France.

Dr. Nau said, "We are very pleased that SHOP2 did so well, because it works very differently from most other AI planning systems. Our algorithm design was based on theories of planning that we developed as a result of our experience with application domains such as automated process planning, the game of bridge, and non-combatant evacuation planning."

The team: Dr. Nau; Computer Science Ph.D students **Tsz-Chiu Au**; **Dan Wu**; **Okhtay Ilghami**; **Ugur Kuter**; and **Fusun Yaman**; and **Bill Murdock**, a postdoc at the Naval Research Laboratory.

More info is available online at [www.cs.umd.edu/projects/shop/description.html](http://www.cs.umd.edu/projects/shop/description.html). [ES](#)

## industryNEWS



ISR'S STRATEGIC ADVISORY COUNCIL convened on May 2 to discuss and suggest directions and initiatives for the Institute. The council is composed of industrial and academic leaders from around the world.

THE GE NETWORK SOLUTIONS ACADEMIC PROGRAM now includes the University of Maryland. This program supports research in new and technologically demanding areas. The ISR team of **Michael Casey** (Ph.D. student) Associate Professor **Mark Austin** (CEE/ISR) and Professor **John Baras** (ECE/ISR) led the collaboration development for this partnership, which ties into the NSF CRCD grant for systems engineering curriculum.



HONDA R&D COMPANY'S **Noriko Mills**, **Yoshimasa Suzuki** and **Masanori Satake** visited ISR in March to review the ongoing Visiting Scientists Program. Above, the group is pictured with Clark School of Engineering Dean **Nariman Farvardin** and ISR's **Karen Deal** and **Jeff Coriale**.

THE LOCKHEED MARTIN AND UNIVERSITY OF MARYLAND TECHNICAL SUMMIT featured eight

ISR faculty members sharing their areas of expertise. The February summit was hosted by the Clark School of Engineering, the College of Computer, Mathematical and Physical Sciences and the Robert H.

Smith School of Business. ISR participants: Professor **Tony Ephremides** (ECE/ISR), pictured at right; ISR Acting Director **Eyad Abed** (ECE/ISR); Professor **Mike Ball** (Robert H. Smith School of Business/ISR); Professor **John S. Baras** (ECE/ISR); Associate Professor **Don DeVoe** (ME/ISR); Professor **James Hendler** (CS/ISR); Professor **P.S. Krishnaprasad** (ECE/ISR); and Professor **V.S. Subrahmanian** (CS/ISR).



#### BERNARD

**LARROUTOUROU**, president of the Institut National de Recherche en Informatique et en

Automatique (INRIA) spoke to a packed crowd of students and faculty in February. His topic was information technology R&D in France and various positions available at INRIA and other national research institutes. The INRIA visit was hosted by Professor **John S. Baras** (ECE/ISR).



TWO NASA GODDARD AND UNIVERSITY OF MARYLAND TECHNICAL SUMMITS were held in April and July this year. The event showcased research of the Clark School of Engineering relevant to NASA operations. Fifteen ISR faculty spoke on controls; guidance and navigation; communication networks; radar tracking systems; inter-

acting cooperative systems; security and counter terrorism; sensor technologies; transportation systems; intelligent agents; and MEMS.



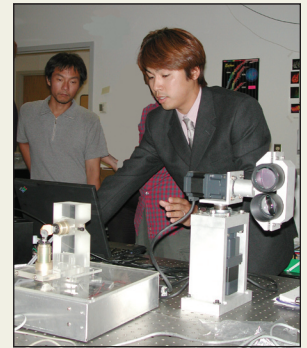
TOSHIBA CORPORATION'S Koichiro Atsumi and Naoto Nishida met with University of Maryland President C.D. Mote during their visit to the campus on March 18. The corporate executives were in town for an update on the work of Haruhiko Kondo and Masa Kotake, Toshiba's participants in ISR's Visiting Scientists Program.



ISR SAID FAREWELL TO TWO VISITING SCIENTISTS FROM HONDA IN JULY. At left, Mr. Hirokatsu Nakaie, engineer with Honda Motor Company, described his research on motorcycle maneuverability for his final presentation at ISR. During his 13-month visit as part of the Visiting Scientist Program, he worked with ISR-affiliated Professor **William Levine** (ECE) on dynamic characterization of suspension systems in motorcycles.

Mr. Kazutomo Nishida, also an engineer with Honda Motor Company in Japan, gave his final Visiting Scientist Program presentation on "Design of Stepping Motor Aided Pointing System for Optical Wireless Tracking System."

He demonstrates the device in this photo from the session. Kazutomo, an expert in motors, conducted this research with Professor **Christopher Davis** (ECE/ISR) during his visit.

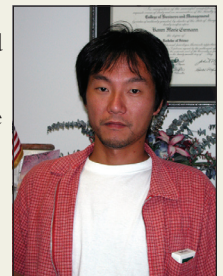


ISR WELCOMED TWO NEW HONDA ENGINEERS into its Visiting Scientists Program this summer.

Mr. Takeo Yokoyama (right) is a chassis designer in the motorcycle body design division of Honda R&D Co. in Japan.



Mr. Yoshihiko Eguchi (right, below) is a noise-damping and exhaust systems engineer in the automobile body development department at Honda R&D Co. in Japan.



More information about ISR's Visiting Scientists Program is online at [www.isr.umd.edu/ISR/industry/VisitingScientistPgm.html](http://www.isr.umd.edu/ISR/industry/VisitingScientistPgm.html).

MORE THAN 300 INDUSTRY AND GOVERNMENT LEADERS in the Washington-Baltimore region viewed and talked with ISR faculty and students about their current projects at Research Review Day 2002 this past March. You can view more than 100 posters from this event online at [www.ece.umd.edu/RRD/](http://www.ece.umd.edu/RRD/).

The next Research Review Day is Friday, March 21, 2003. [ES](#)

# faculty NEWS

## New faculty members

**G. Anandalingam** is a new joint appointment. He is the Tyser Professor of Management Science in the Robert H. Smith School of Business and co-directs the Center for Electronic Markets and Enterprises. His research interests are in design, economics, industry analysis, strategy, and policy of telecommunications networks and electronic markets, and in global information systems strategy.

**Elias Balaras**, a new affiliate faculty member, is an assistant professor in the Department of Mechanical Engineering with research interests in computational fluid dynamics, biomedical fluid flows, fluid-structure interactions and turbulence and transition.

**Michel Cukier**, another new affiliate faculty member, is an assistant professor in the Center for Reliability Engineering within the Department of Materials and Nuclear Engineering. His research interests include security evaluation, intrusion tolerance, distributed system validation, fault injection and software testing.

## New joint appointment

Assistant Professor **Dimitrios Hristu-Varsakelis** (ME/ISR), a former affiliate faculty member who now has a joint appointment with ISR.

## Awards to faculty

Associate Professor **S.K. Gupta** (ME/ISR) received the Presidential Early Career Award for Scientists and Engineers (PECASE) in a White House ceremony July 12. Dr. Gupta won the prestigious award for developing a new molding process and decision support tool for manufacturing multi-material parts. Dr. Gupta also is one of 84 young engineers participating in the National Academy of Engineering's Frontiers of Engineering symposium.

Professor **P.S. Krishnaprasad** (ECE/ISR) was one of the faculty affiliated with the Alfred Gessow Rotorcraft Center to receive the American Helicopter Society's Grover E. Bell Award. It was given for pioneering fundamental contributions in smart structures technologies that successfully transitioned into helicopter systems.

Professor **Tony Ephremides** (ECE/ISR) is one of 18 University of Maryland faculty named fellows in the university's new Academy of Excellence in Teaching and Learning. The academy is committed to fostering a culture of excellence in teaching and learning.


## Book published

Just published by Westview Press is the third edition of *Building Scientific Apparatus* by Professor John H. Moore (Chemistry), Professor **Christopher Davis** (ECE/ISR) and Research Professor Michael A. Coplan (IPST). The book is a practical guide for working scientists and students who design and construct scientific equipment.

## Shneiderman donates papers

Professor **Ben Shneiderman** (CS/ISR) has made his papers available to researchers at the university's Libraries' Archives and Manuscripts Department in the Hornbake Library. The papers illustrate his work and emergence of the discipline of human-computer interaction. The online inventory is available at [www.lib.umd.edu/ARCV/histms/findingaids/shneiderman/index.html](http://www.lib.umd.edu/ARCV/histms/findingaids/shneiderman/index.html).

## ISR awards

ISR Acting Director **Eyad Abed** recognized Professor Michael Fu (BMGT/ISR) as outstanding faculty member; Lee Harper, Coordinator of Educational Programs, as outstanding staff member and Dr. Wade Trappe as the George Harhalakis Outstanding Systems Engineering Graduate Student at ISR's annual awards ceremony on May 22. 

# alumni NEWS


## Alumni help software company grow

ISR alumnus **Xin Cindy Chen**, 41, and her husband **Yuangeng Huang**, 45, are helping steer the course at Everlasting Systems Ltd., a growing worldwide software provider based in Hong Kong.

One of ISR's first students, Cindy studied control and robotics with Professor **P.S. Krishnaprasad** (ECE/ISR). She earned an M.S. in Electrical Engineering in 1987. Yuangeng Huang earned his Ph.D. in Computer Science at the University of Maryland in 1990. The two are grateful for their years at Maryland, where they gained the leadership skills they are putting into practice at Everlasting Systems.

Cindy worked for Sun Microsystems' Beijing office before joining the start-up Everlasting Systems in September 1998, as the second person hired. The company now has about 50 people on staff. Its software product development center is in Beijing, China, with marketing offices in California and Hong Kong.

Everlasting Systems is a worldwide software provider and outsourcing service that helps companies enable software products, web applications and e-business systems for the global marketplace. The company develops software and provides professional software services for global enterprises. Their core expertise lies in software development and in-depth knowledge of Java, XML, C/C++, Unicode and Internet/Web technologies.

SGIL (Software Globalization by Internationalization for Localization) is one of Everlasting Systems' main products. It offers cost effective and accelerated globalization with improved multi-lingual software quality control, improved software management, and minimized maintenance, support, and upgrade costs. 

## More alumni news

**Radha Poovendran**, Assistant Professor in the Electrical Engineering Department at the University of Washington, received both his department's 2002 Outstanding Teaching Award and its Outstanding Graduate Advisor Award. It was the first time both awards were given to the same faculty member. Radha was a Ph.D. student of Professor **John Baras** (ECE/ISR), who said, "This is truly outstanding for a young faculty member like him." Poovendran also won the Army Research Office's Young Investigator's Program (YIP) award for "Information Assurance for Energy Constrained Wireless Sensor Networks."

**Richard Stamper**, Assistant Professor of Mechanical Engineering at Rose-Hulman


Institute of Technology, received a national award for teaching from the American Society for Engineering Education (ASEE). Rick was a Ph.D. student of Professor **Lung-Wen Tsai**.

**Thomas Vossen**, 2002 Ph.D. in Business Administration, has joined the University of Colorado at Boulder as an assistant professor within the Systems Division in the Leeds School of Business. His co-advisors were Professor **Mike Ball** (Robert H. Smith School of Business/ISR), and Professor **Dana S. Nau** (CS/ISR). Thomas won the ISR outstanding graduate student award in 2000.

**Nikolaos Kanlis**, 2002 Ph.D. in Electrical and Computer Engineering, is now an assistant professor at Texas A&M, Kingsville. His Ph.D. advisor was Professor **Shihab Shamma** (ECE/ISR).

**Hamid Jafarkhani**, 1997 Ph.D. in Electrical and Computer Engineering, joined the Department of Electrical and Computer Engineering at University of California, Irvine. His Ph.D. advisor was Clark School Dean **Nariman Farvardin**.

**Jie Chen**, 1998 Ph.D. in Electrical and Computer Engineering, is now an assistant professor at Brown University. His Ph.D. advisor was Professor **K.J. Ray Liu** (ECE/ISR).

**Hua O. Wang**, 1993 Ph.D. in Electrical Engineering, has joined Boston University's Department of Aerospace and Mechanical Engineering as associate professor with tenure. Dr. Wang did his doctoral work in the ECE Department and ISR under ISR Acting Director **Eyad Abed** (ECE/ISR). 

## student NEWS



Five students graduated from ISR's Master of Science in Systems Engineering program on May 23. Congratulations to: **Ketan Babaria**, a software engineer with Agilent Technologies; **Phanikumar Bhamidipati**, who plans to go on to advanced graduate study; **Brian Poskaitis**, now returning to active duty as a Coast Guard Commander; **Scott Selberg**, returning to Agilent Technologies as a manufacturing engineer; and **Vandana**, who has been hired as an application developer for Microsoft in Redmond, Wash.

Intelligent Servosystems Lab manager and Ph.D. student **Sean Andersson** received a \$15,000 scholarship from the ARCS Foundation, Inc. (The acronym stands for Achievement Rewards for College

Scientists.) Sean's research efforts are focused on the role of geometric phases in sensing and control and mobile robotics. His advisor is Professor **P.S. Krishnaprasad** (ECE/ISR).

Ph.D. student **Alireza Modafe** received the American Vacuum Society's Graduate Research Award for 2002. Only one is given each


year. His advisor, Assistant Professor **Reza Ghodssi** (ECE/ISR), coincidentally won this same award in his student days. Modafe also won the best poster award at the MEMS Alliance Workshop for "A Power MEMS Device with Micro-Ball Bearing Support." He is a graduate research assistant in the MEMS Sensors and Actuators Lab.



**Ahlia Tillman**, a graduate student of Professor **Shihab Shamma** (ECE/ISR), received a GEM Fellowship award. The fellow-

ship is sponsored by the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. Ahlia is a student in the Neural Systems Lab.



Ph.D. student **Yinyin Zhao** was given a \$1,900 grant by the Washington, D.C.-based Cosmos Club Foundation to support her research into "MEMS-based Piezoelectric Microphone for Biomedical Applications." Zhao is a graduate research assistant to Assistant Professor **Reza Ghodssi** (ECE/ISR) in the MEMS Sensors and Actuators Lab. 

# mediaCOVERAGE

Eleven ISR faculty participated in the University of Maryland's CASE News Media Fellowship, which brought working print and broadcast journalists to campus for briefings on artificial intelligence and robotics research.  $\Sigma$ S *Raleigh News & Observer* computer reporter Paul Gilster says he stays current at the Human-Computer Interaction Lab web site because "The work these guys are doing will show up in commercial products not so far down the road."  $\Sigma$ S Professor Ben Shneiderman's (CS/ISR) study on creating online trust was highlighted in a *Computerworld* story, "How to Stop Web Shopper Flight."  $\Sigma$ S Ben was featured in an *All Things Considered* story about giving "personality" to automated phone systems ([www.npr.org/ramfiles/atc/20020418.atc.04.ram](http://www.npr.org/ramfiles/atc/20020418.atc.04.ram))  $\Sigma$ S Shneiderman, Assistant Professor Allison Druin (EDU/UMIACS/ISR), and HCIL Lab Director Ben Bederson (CS) were interviewed online by *The Washington Post* in May. Read the interview at [discuss.washingtonpost.com/wp-srv/zforum/02/washtech\\_hcil0509.htm](http://discuss.washingtonpost.com/wp-srv/zforum/02/washtech_hcil0509.htm). View the related video at [www.washingtonpost.com/wp-srv/mmedia/washtech/050802-7v.htm](http://www.washingtonpost.com/wp-srv/mmedia/washtech/050802-7v.htm).

$\Sigma$ S Work on single photon tunneling by Professor Christopher Davis (ECE/ISR) and colleagues was published in the American Physical Society's journal *Physical Review Letters* and highlighted in its *Physical Review Focus* magazine. (Story at [focus.aps.org/v9/st24.html](http://focus.aps.org/v9/st24.html).) The work also was featured in the U.K. publication, *Electronic Engineering Times*. It is available at [www.electronicstimes.com/story/OEG20020516S005](http://www.electronicstimes.com/story/OEG20020516S005). View the related poster from this year's Research Review Day at [www.ece.umd.edu/RRD/onlineposters/Davis\\_SinglePhotonTunneling.pdf](http://www.ece.umd.edu/RRD/onlineposters/Davis_SinglePhotonTunneling.pdf).  $\Sigma$ S A *Business Week* semantic web story featured Professor James Hendler (CS/ISR): [www.businessweek.com/print/premium/content/02\\_09/b3772108.htm?mainwindow](http://www.businessweek.com/print/premium/content/02_09/b3772108.htm?mainwindow)  $\Sigma$ S As Valentine's Day approached this year, the news media went nuts over a story ISR reported back in 1998. The bower bird mating habits study of Biology Professor Gerald Borgia, with robotic birds created by Associate Professor Greg Walsh (ME/ISR), was noted by ABC's *World News Tonight*, CNN, *The New York Times*, *Nature*, PBS's *NOVA*, *The New Orleans Picayune* and Melbourne's *The Age* newspaper.  $\Sigma$ S

## ISR Industrial Affiliates

### Sustaining Partner

Northrop Grumman Corporation

### Partners

GE Corporate R&D

Toshiba Corporation

### Participants

America Online

Boeing Commercial Airplanes

Boeing Communications

E.I. du Pont de Nemours Co.

Honda Research and Development

Honeywell, Inc.

Hughes Network Systems

INFICON, Inc.

Intelligent Automation, Inc.

Lockheed Martin Global Telecommunications

Rational Software Corp.

Telcordia Technologies

TogetherSoft Corp.

---

**ISR** is a permanent state-supported institute of the University of Maryland, within the A. James Clark School of Engineering. ISR is a National Science Foundation Engineering Research Center.

2169 A.V. Williams Building, University of Maryland, College Park, MD, 20742

**Phone:** 301.405.6615 **Fax:** 301.314.9920

**Web site:** [www.isr.umd.edu](http://www.isr.umd.edu)

**Editor:** Rebecca Copeland



**A. JAMES CLARK**  
SCHOOL OF ENGINEERING

The Institute for Systems Research  
University of Maryland  
College Park, MD 20742-3311

Nonprofit Org.  
U.S. Postage  
PAID  
Permit No. 10  
College Park, MD

**View 2002 Research Review Day Posters online at [www.ece.umd.edu/RRD/](http://www.ece.umd.edu/RRD/)**  
**Research Review Day 2003 is Friday, March 21, 2003**