

# Research Review

OFFICE OF THE VICE PRESIDENT FOR RESEARCH ♦ PURDUE UNIVERSITY

*Sponsored Program Development*

## Community of Science (COS)

### Purdue's Best Source for Finding Funding Information & Research Expertise [www.cos.com](http://www.cos.com)

New and seasoned faculty who are not yet taking advantage of Purdue's subscription to COS should review its website at [www.cos.com](http://www.cos.com). The *Funding Alert* portion of this system is the most comprehensive means available for providing weekly e-mail notifications of funding opportunities specifically tailored to each individual's research, education, or scholarly interests. In addition, the *Faculty Expertise* portion allows individual researchers to input their interests and accomplishments, thus making this information available to potential collaborators here. Below are summaries of a number of the features available through COS:

- *Faculty Expertise*: This international network contains profiles of researchers and scholars at more than 1,300 subscribing universities, corporations, and government agencies. The system is searchable by institution, research area, geographical location, or name. It is dependent on each scholar or researcher keeping up-to-date information in his or her own profile using the COS easily-editable system. Profiles link patents to the U.S. Patents database, and publication listings link directly to journal abstracts and/or full texts.
- *Funding Alert*: Keywords chosen by each faculty member from an extensive keyword list allow individually relevant e-mails to be sent to each participant on a weekly basis. Funding opportunities in the COS system are exhaustive and include a comprehensive list of federal, state, foundation, and corporate sponsors.
- *Funding Opportunities*: This database provides on-demand searches of more than 23,000 funding opportunities using a variety of search criteria, including keywords, sponsor, location, educational status, and funding type.
- *Federal Register and FedBizOpps/Commerce Business Daily*: Both of these publications are available in searchable format, including current and archived issues. Also available are a number of other searchable publications such as *Agricola*, *Medline*, *GeoRef*, and *U.S. Patents*.

*Continued on page 2*

July/August 2002

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#### INSIDE THIS ISSUE

Community of Science (COS) .....	1
<i>Services Directory</i> .....	2
Impact of Our Research — A Science Dependent Society .....	2
Request for Proposals .....	3
Sponsored Program Development (SPD) Library .....	3
Educational Program Offered for First Time Award Recipients .....	3
What do you mean — there are compliance issues that need resolution? <i>What's holding up my grant award?</i> .....	4
OTC Hosts Seminars .....	6
Entrepreneur Forums .....	6
<i>May 2002 Projects Funded</i> .....	7
<i>June 2002 Projects Funded</i> .....	12
Fall 2002 New Faculty Research Orientation .....	16

## Services Directory

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# Impact of Research — A Science Dependent Society

by *John A. Schneider*

The impact of science has grown as society has learned how to use scientific discoveries; this has led to an increasing reliance on knowledge. Reliance on scientific knowledge places a heavy responsibility on researchers to use their skills, limited time, and resources. We have become a science-dependent world.

Bruce Alberts, president of the National Academy of Sciences, addressed the Academy with a presentation entitled “Science and Human Needs.” His remarks highlight the importance of the impact of scientific discovery:

“In the 21<sup>st</sup> century, science and scientists will be judged on how well they help solve local and world problems, not only on how well they generate new knowledge,” he concluded. “The impact of our research is everywhere, and we must step out and make sure that our work is understood and appropriately used by the world. We must do so with humility and take the time to interact and learn more about the systems we need to influence – not only education, political and legal systems, but also the very different worlds of commerce, entertainment, and the media. We also need to be explicit about what is not known, and be clear about the questions that science cannot answer.”

It is imperative that scientific researchers interact and influence the world of commerce. In today’s global economy our advances and breakthroughs can most quickly be utilized to help solve environmental, health, and hunger problems by working with industry. We need to find partners that will make our innovations available.

Scientists must become engaged with all facets of life to ensure that our scientific capabilities are understood and maximized, and that our inventions and innovations are utilized to benefit humankind. ♦

*John Schneider is the assistant vice president for industry research.*

### *COS —Continued from page 1*

- *Meetings & Conferences and Abstract Management: Meetings & Conferences* includes links to a host of professional societies and their upcoming meetings. *Abstract Management* allows submission of meeting abstracts on-line.
- *Quick CV*: Using his or her Faculty Expertise profile, each participant can create an on-line Microsoft Word CV in a few minutes.
- *Connect Indiana*: Connect Indiana provides a single point of access for the private sector and academia to make connections to Purdue’s faculty expertise and the broad range of resources that are available at the University. Connect Indiana listings have been an important element in setting up academic/industrial programs and in enabling researchers to identify Purdue collaborators. Currently only Purdue faculty who have a complete *Faculty Expertise* profile in COS appear in Connect Indiana.

If you have questions about setting up your Expertise Profile or Funding Alert, please contact Christine King at [hcking@purdue.edu](mailto:hcking@purdue.edu) or 46706. ♦

# Educational Program Offered for First Time Award Recipients

A new educational workshop targets principal investigators (PIs) who recently received their first sponsored program award at Purdue University. The program is offered on a quarterly basis and is open to anyone wishing to attend. Invitations are sent to any PI receiving his/her first award at Purdue during the previous three months.

Topics covered during the workshop include:

- awarding instruments (contracts vs. grants),
- charging sponsored program accounts,
- effort reporting, facilities & administrative cost rates (F&A, formerly known as indirect costs),
- demonstrations on how to access financial information through the Account Information Management System (AIMS),
- reporting requirements, record retention, intellectual property, regulatory compliance, and a tour of helpful websites.

The presentation lasts approximately 90 minutes.

The workshop is also available upon request for departments or schools wishing to have it available to all faculty within their unit. Contact Mike Ludwig at 63089 or [mludwig@purdue.edu](mailto:mludwig@purdue.edu) if you would like more information about this program. ♦

## Requests for Proposals

### Sloan Foundation

The Alfred P. Sloan Foundation supports research and programs in a broad range of areas, including:

- *Science and Technology*, with funding for fellowships, direct support of scientific research, and history of science and technology;
- *Standard of Living and Economic Performance*, which supports research and projects by and for industries, universities, and families;
- *Education and Careers in Science and Technology*, with particular emphasis on higher and informal education, education for underrepresented groups, and public understanding of science and technology;
- *Selected National Issues* such as bioterrorism, energy, and public policy and *The Civic Program*.

Proposals may be submitted at any time, and usually range from \$30,000 to \$150,000. Further information about this foundation, including recently-funded research, is available at [www.sloan.org](http://www.sloan.org).

### NSF—Research Experiences for Undergraduates (REU)

The National Science Foundation's REU program supports active research participation by undergraduate students in any of the areas of research funded by NSF. REU projects involve students in meaningful ways in on-going research programs or in specially designed research projects. This announcement features two flexible mechanisms for support of student research, *REU Supplements* and *REU Sites*.

*REU Supplements* may be included in proposals for new or renewal NSF grants or cooperative agreements, or as supplements to ongoing NSF-funded projects.

*REU Sites* are based on independent proposals to initiate and conduct undergraduate research projects for a number of students. REU Sites projects may be based in a single discipline or academic department or on interdisciplinary or multi-department research opportunities with a strong intellectual focus. Proposals with an international dimension are welcomed.

Undergraduate student participants supported with NSF funds in either Supplements or Sites must be citizens or permanent residents of the United States or its possessions.

The deadline for REU Site proposals is September 15. Deadlines vary by directorate for REU Supplement proposals. The complete program announcement is available at [www.nsf.gov/pubs/2002/nsf02136/nsf02136.htm](http://www.nsf.gov/pubs/2002/nsf02136/nsf02136.htm).

### DoD - Multidisciplinary Research Program of the University Research Initiative (MURI)

The Department of Defense has released this year's announcement of funding priorities for the MURI initiative, which supports U.S. universities performing basic science and engineering research and related education in science and engineering areas critical to national defense. Deadlines are: white papers - September 12; full proposals - November 20. The announcement is available at [http://www.onr.navy.mil/02/baa/02\\_025.htm](http://www.onr.navy.mil/02/baa/02_025.htm), with complete information on priorities and submission at [http://www.onr.navy.mil/02/baa/02\\_025/default.htm](http://www.onr.navy.mil/02/baa/02_025/default.htm). ♦

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## Sponsored Program Development (SPD) Library

One of the resources offered by the Office of the Vice President for Research is the SPD Library, located on the third floor of Hovde Hall. This room holds a variety of publications about research funding. In addition, it includes reprints of successful proposal-related workshops held over the past several years, as well as copies of proposals funded by a variety of federal agencies.

Please call Helen Terrell at 49322 to schedule your visit to the SPD Library. ♦

# What's holding up my grant award?

## *What do you mean — there are compliance issues that need resolution?*

by Rebecca D. Armstrong

You've written a grant, waited months for it to be reviewed, scored and/or ranked—and the agency program officer or Sponsored Program Services (SPS) has just notified you that you are getting an award! Justifiably, you can hardly wait to get started on your project or you may have been waiting for this award to support a graduate research assistant or post-doc. However, your grant still needs to be processed internally to set up your award fund account.

In this process, SPS and the Office of Research Administration (ORA) work cooperatively to ensure that all regulatory issues are in order prior to the release of funds. Any grant proposal file that identifies the use of human or animal subjects, rDNA, and/or biohazardous materials on the Transmittal Check Sheet (TCS) is routed from SPS to ORA for regulatory compliance review. Customarily, this review occurs a.) at the time of award notification from the funding agency; b.) during the funding agency's pre-award stage of proposal review; c.) when a grant receives a non-competing renewal/continuation; or, d.) when there is a request for a no-cost extension on a grant.

***The accuracy of the TCS is the first critical step in ensuring that there is no delay in setting up or continuing an award fund account. The grant investigator is the person responsible for the TCS accuracy.*** Please see the Transmittal Check Sheet Instructions on the SPS web site <http://www.adpc.purdue.edu/SPS/index.html> for help in completing the compliance sections of the TCS accurately.

Occasionally, an SPS account manager—in the course of his/her general review of the grant—will think a regulatory compliance approval might be necessary even though

the Principal Investigator (PI) did not so designate such on the TCS form. When this happens, the proposal is routed through ORA for our review. Only *after* ORA confirms that all regulatory compliance issues are resolved and in order is the grant file returned to SPS to complete the process—set up the award account and authorize the grant investigator to draw funds.

The ORA's general guidelines for reviewing grants for regulatory compliance are outlined below. These guidelines are provided to save you time and to assist you, the investigator, in ensuring that complete and accurate information is in the files of the respective compliance offices or the ORA before your grant is awarded. Even if you follow the National Institutes of Health (NIH) "just-in-time" policy of obtaining human or animal research subject compliance approvals for your NIH grants; by following these guidelines, there should be *minimal to no delay* in the SPS to ORA review turn-around time. By providing you with this information we hope to expedite the establishment of award account funds and facilitate the conduct of research for individual investigators as well as intra- or inter-institutional collaborative teams.

- 1. The ORA automatically receives a copy of any compliance approval** (not the complete file, just the approval form) directly from the respective Purdue compliance office if the PI lists a funding source/agency on the compliance application.
- 2. Investigators are not allowed to "use" another PI's compliance approval.** As the ORA does not receive the full compliance application file, our staff

will not know—for compliance purposes—whether the grant project is the same as the compliance approval. Therefore, if the lead investigator on the grant is not also the PI on the compliance application, s/he must be listed as at least a co-investigator on the compliance application. If the compliance approval PI and the grant investigator are not one and the same, we advise the grant investigator to include a signed cover memo with his/her proposal noting the relationship of the grant investigator(s) to the appropriate compliance approval. This process will enable the ORA to cross-reference the grant and compliance approval(s) to the investigator and co-investigators.

***Exceptions to guideline #2*** occur when an investigator wishes to utilize an existing animal facility/laboratory compliance approval (e.g. Professor David Asai's antibody facility), or for human subjects research when Field Extension Educators who—with written permission of the PI—use a research protocol which has been developed by campus-based extension faculty and approved by the Purdue IRB for "testing" in the field. In these rare instances, once again, the grant investigator should include a signed cover memo listing the appropriate compliance approval and include a detailed explanation or reference where this relationship is discussed in the grant proposal, if the PI on the compliance approval does not match the grant investigator.

3. **The title of the approved compliance documentation must reasonably “match” the title of the grant.** This can be problematic if the compliance approval only covers a subset of what a grant is funding; however, providing a major title and sub-title can usually alleviate these problems. Federal funding agencies such as NIH will withhold your proposal from review if the title of the grant and the compliance approval document do not match.
4. **For Purdue Pharmacy faculty at IUPUI** — It is the responsibility of the investigator to send by FAX or regular mail a copy of the IUPUI human subjects approval documentation to the ORA at the West Lafayette campus (i.e.: Document of Review and Approval; Final approval memo w/ Expedited Research Checklist and Summary Safeguard Statement). IUPUI human subjects office staff do not do this for the investigator. The compliance approval number listed on a TCS must match the approval document sent to ORA. Also, guideline #2 should be followed with regard to the IUPUI compliance approval listed on the grant.
5. **Upon award of the grant**, if “in review” was check-marked in the compliance section of the TCS, the grant investigator will be contacted via e-mail by the ORA and asked for the appropriate compliance approval documentation if this has not been provided in advance. The investigator must reply to the ORA via e-mail or submit a hard copy of the approval—including the protocol reference number, title, and approval date. When submitting the compliance approval document, please include a cover note referencing the appropriate grant and investigator to which the compliance documents are associated. This verification must come from the grant investigator directly.
6. **If an investigator knows the research to be conducted will require compliance approval at some point during the funding period of the grant, the appropriate compliance question on the TCS must be marked “YES” or “in-review.”** However, if they do not currently have approval and it is noted by marking “in review,” then such approval must be obtained prior to the grant being awarded (e.g. NIH “just-in-time” compliance approval).
7. **When subcontracts are involved**, the Work Statement must accurately represent the investigator’s current activities, what is described as occurring in the approved compliance document, and what is in the grant proposal. If the activities an investigator is engaged in change, then a new Work Statement must be submitted to SPS and will be added to the proposal file.
8. **The identified compliance approval must reasonably correspond to the research activities described in the associated grant proposal** and vice versa. The research activities subject to compliance oversight proposed in the grant must be “covered” by an approved research protocol. For new or continuation awards, if a proposed research activity that would be subject to compliance review is *eliminated* or *changed* in the grant, please notify the ORA in a memo referencing the grant, any compliance approvals, and what has changed and why. Otherwise, the ORA will expect the research project to unfold just as you have proposed and will look for compliance approvals to support those activities. Remember also, that any research protocol revisions must be reviewed and approved by the respective committee (IRB, PACUC, or IBC) prior to implementing the change.
9. **Current compliance approvals must be on file in the ORA** or the processing of future grant award continuations and/or no-cost extensions will be delayed\*. (See also guidelines #1 and #5.)
  - \* In particular, for rDNA and/or biohazardous materials compliance, the Institutional Biosafety Committee must have a current approval on file using the new application form that was revised in February 2002.
10. **For human subjects research, the Purdue IRB requires submission of a copy of any initial IRB approval done at another institution** (i.e. for collaborative research) as well as copies of any continuing reviews and approvals. The ORA verifies receipt of this information in its award review process.
11. **PIs must keep their compliance protocols ACTIVE for the duration of an associated grant and during any no-cost extension** even if all data collections and analyses are complete. Termination of a compliance approval prior to the end of your grant funding will trigger the process of freezing any remaining funds.

While the Vice President for Research, the ORA, SPS, and the regulatory compliance committees are responsible for assuring adherence to all applicable regulations, we also want to facilitate the responsible conduct of research and support faculty in their pursuit of external funding.

We know you are eager to get started on your research. By sharing these guidelines with you, we hope to reduce any frustration or delays that may accompany the receipt of your award. If you have any questions, please contact the ORA at 46840 or [rda@purdue.edu](mailto:rda@purdue.edu). ♦

Rebecca Armstrong is assistant vice president for research compliance.

## OTC Hosts Seminars

As part of its Outreach Program, the Office of Technology Commercialization (OTC) will host a variety of seminars this fall featuring topics on software, engineering and biotechnology patents, and the anatomy of a Purdue license agreement.

**On September 27**, Steven W. Lundberg from the Minneapolis firm of Schwegman, Lundberg, Woessner & Kluth, P.A., will present a seminar discussing software patent issues. Lundberg is a registered patent attorney and founding partner of Schwegman, Lundberg, Woessner & Kluth. His practice is focused on patent protection for software, medical and telecommunications technology, and related opinion and licensing matters. Lundberg has published and spoken widely on software and electronic patent protection, and is active in the Software Publishers Association and the Computer and Electronics Committee of the American Intellectual Property Law Association. The seminar will take place in Stewart, Room 318 at 7:30 a.m. and run until approximately 8:30 a.m.

A free continental breakfast or beverage service will accompany each seminar.

For additional information, please visit [www.otc.purdue.edu](http://www.otc.purdue.edu), the OTC web site, look for a notice in your mailbox, or contact Maureen Schmidt Ward, OTC Marketing Communications Specialist, at 49896, or [otc@purdue.edu](mailto:otc@purdue.edu). ♦

## Entrepreneur Forums

The Office of Technology Commercialization (OTC) will continue the popular Entrepreneur Forum series this fall. Each forum will begin at noon and end at approximately 1:15 pm. The forums will take place in the large meeting room of the Purdue Technology Center (PTC) in the Purdue Research Park, West Lafayette. Beverages will be provided at each forum. The forum dates are:

**Friday, September 6**

**Friday, October 11**

**Friday, November 15**

**Friday, December 13**

**On September 6**, Dennis Barket, Ph.D., co-founder and president of Griffin Analytical Technologies, Inc. (GAT) will present, "The Transition from Graduate Student to Entrepreneur – The Genesis of Griffin Analytical Technologies." Barket is a graduate of Purdue University's Department of Chemistry. GAT, an analytical instrumentation company, won first prize in the 2001 Burton Morgan Competition, a Purdue Krannert School of Management event that showcases high-tech entrepreneurial endeavors by Purdue students. GAT is located in the Purdue Research Park.

The goal of the Entrepreneur Forums is to provide individuals involved with a start-up company or who are thinking about starting a company with an opportunity to listen to speakers and learn from their experience. The format is informal, with a brief presentation by the speaker followed by questions and discussion.

Lisa Kuuttilla, assistant vice president for technology commercialization and director of OTC says, "The forums provide networking opportunities, gives participants a chance to meet other entrepreneurs and learn from shared experiences."

For additional information and updates, please visit the OTC web site [www.otc.purdue.edu](http://www.otc.purdue.edu), look for a notice in your mailbox, or contact Maureen Schmidt Ward, OTC Marketing Communications Specialist, at 49896 or [otc@purdue.edu](mailto:otc@purdue.edu). ♦

# May 2002 Projects Funded

**D. E. Adams**, mechanical engineering, from Army Research Office, \$100,000, June 1, 2002 through May 31, 2003, "Integrated Diagnostics and Reliability Forecasting for Hybrid Structures through Similarity Modeling of Nonlinearity, Time-Variance, and Uncertainty."

**L. G. Adams**, veterinary clinical sciences, from the Iams Company, \$43,701, March 1, 2002 through May 31, 2003, "Clinical Effectiveness of Plant Extract U1 in the Canine."

**J. T. Akridge**, and **C. G. Braunlich**, agricultural economics, hospitality and tourism management, from Foreign Agricultural Service, \$54,936, August 6, 2001 through August 25, 2002, "Training Programs for Cochran Fellowship Program (CFP) and Other Foreign Participants."

**J. P. Allebach**, electrical and computer engineering, from Hewlett Packard, \$130,592, February 1, 2002 through January 31, 2003, "Inkjet Imaging Pipeline."

**O. M. Andrisani**, basic medical sciences, from Public Health Service, \$188,990, May 1, 2002 through April 30, 2003, "CREB/ATF Proteins and Hepatocyte Growth Control."

**X. B. Arriaga**, psychological sciences, from Kinley Trust, \$19,992, July 1, 2002 through April 30, 2003, "Identifying Ways of Detecting Severe Relationship Violence."

**S. R. Bell**, mathematics, from National Science Foundation, \$87,100, July 1, 2000 through June 30, 2003, "Complexity of the Objects of Complex Analysis and Holomorphic Mapping Problems."

**R. W. Bennett**, pharmacy practice, from AstraZeneca Product Development, \$10,000, March 7, 2002 through June 30, 2003, "New Treatment Strategies for GerD."

**R. J. Bernhard**, mechanical engineering, from Michelin Americas Research and Development Center., \$6,500, June 1, 2002 through July 31, 2002, "The Modeling Software."

**B. Bhargava**, computer science, from National Science Foundation, \$139,111, September 1, 2000 through August 31, 2003, "Secure Mobile Systems."

**B. Bhargava**, computer science, from University of California-Irvine, \$18,074, August 1, 2001 through May 23, 2004, "Time-Based Coordination of Networked Embedded Nodes."

**E. R. Blatchley**, and **C. T. Johnston**, civil engineering, agronomy, from Environmental Protection Agency, \$125,000, April 1, 2002 through March 31, 2005, "Fouling of Quartz Surfaces in Portable Water Ultraviolet Disinfection Systems."

**L. W. Bledsoe**, entomology, from Pioneer Hi-Bred International, Inc., \$4,000, March 1, 2002 through February 28, 2003, "2002 Field Efficacy Evaluations of Pioneer Transgenic Events."

**A. Bobet**, **V. P. Drnevich**, and **M. Santagata**, civil engineering, from National Science Foundation, \$4,550, June 1, 2002 through February 28, 2003, "Soil Treatment with Thixotropic Fluids: An Autodaptive Design for Liquefaction Prevention."

**G. J. Bossaer**, and **J. L. Obermeyer**, field extension educators, entomology, from North Carolina State University, \$6,650, January 1, 2002 through December 31, 2002, "Monitoring of Corn Rootworm in Soybean."

**D. K. Brentari**, and **E. E. Benedicto**, audiology and speech sciences, English, from National Science Foundation, \$90,557, August 1, 2001 through July 31, 2003, "Sign Language Classifiers: a Crosslinguistic Study."

**C. E. Brodley**, electrical and computer engineering, from National Aeronautics and Space Administration, \$147,000, March 1, 2001 through February 28, 2003, "Machine Learning and Data Mining for Improved Intelligent Data Understanding of High Dimensional Earth Science Data."

**J. A. Brooks**, nursing, from March of Dimes Birth Defects Foundation, \$10,000, March 1, 2002 through February 28, 2003, "Healthy Beginnings: Providing Prenatal Care to Underserved Women in Carroll and White Counties."

**S. M. Brouder**, agronomy, from Potash and Phosphate Institute, \$8,719, January 1, 2001 through December 31, 2002, "Evaluation of Site Specific Precision Management for Indiana Soybean Production Systems."

**D. M. Bullock**, civil engineering, from Indiana Department of Transportation, \$170,000, May 1, 2002 through April 30, 2004, "ITS Laboratory - Phase II."

**D. M. Bullock**, civil engineering, from Siemens Energy and Automation Inc., \$73,770, April 17, 2002 through September 7, 2003, "ACS Lite."

**J. M. Buriak**, chemistry, from Dreyfus, Camille and Henry Foundation Inc., \$60,000, May 1, 2002 through July 31, 2007, "Nanoscale Chemistry of Semiconductor Surfaces."

**J. M. Buriak**, chemistry, from National Science Foundation, \$80,000, September 1, 2001 through August 31, 2003, "Wet-Chemical Routes to Stable Organic Monolayer Based Nanoscale Features on Semiconducting Silicon and Germanium Surfaces."

**S. R. Byrn**, **K. R. Morris**, and **G. E. Peck**, nursing, from Camp, Inc., \$82,500, January 1, 2002 through December 31, 2002, "Particle Characterization."

**S. R. Byrn**, **K. R. Morris**, and **G. E. Peck**, nursing, from Camp, Inc., \$75,000, January 1, 2002 through December 31, 2002, "Scale-Down/Scale-Up."

**S. R. Byrn**, **K. R. Morris**, and **G. E. Peck**, nursing, from Camp, Inc., \$91,000, January 1, 2002 through December 31, 2002, "Sensors."

**S. R. Byrn**, **K. R. Morris**, and **G. E. Peck**, nursing, from Camp, Inc., \$91,000, January 1, 2002 through December 31, 2002, "Sensors for Costing."

**B. S. Caldwell**, industrial engineering, from National Aeronautics and Space Administration, \$256,250, March 1, 2002 through February 28, 2003, "Indiana Space Grant Consortium."

**T. N. Cason**, School of Management - administration and instruction, from Environmental Protection Agency, \$144,136, April 29, 2002 through April 28, 2004, "An Experimental Study of Transactions Costs, Liability Rules and Point-Nonpoint Source Trading in Environmental Markets."

**S. Chandrasekar**, industrial engineering, from National Science Foundation, \$10,000, June 1, 2002 through July 31, 2003, "Micro-Scale Characterization of Machining Interface NSF-Reu Research Experience for Undergraduate Supplement."

**S. Chandrasekar**, **W. D. Compton**, and **T. N. Farris**, industrial engineering, aeronautics and astronautics, from National Science Foundation, \$75,000, August 15, 2001 through July 31, 2003, "Micro-Scale Characterization of Machining Interfaces."

**L. M. Chang**, civil engineering, from Indiana Department of Transportation, \$10,000, May 1, 2000 through April 30, 2002, "Implementation of Steel Bridge Protection Policy."

**J. A. Chmielewski**, chemistry, from National Science Foundation, \$110,000, August 15, 2000 through July 31, 2003, "Self-Replicating Peptides."

**C. A. Clayson**, earth and atmospheric sciences, from University of Colorado, \$34,000, May 1, 2000 through April 30, 2002, "Global and Regional Impacts of Mesoscale Variability in Air/Sea Fluxes."

**S. H. Collicott**, and **S. D. Heister**, aeronautics and astronautics, from Rolls-Royce Corporation, \$73,000, May 1, 2002 through April 30, 2003, "Dynamics of Engine Oil Sumps and Drains."

**R. G. Cooks**, chemistry, from Proctor and Gamble Pharmaceuticals, \$50,000, March 1, 2002 through March 1, 2003, "High Throughput Mass Spectrometer: Construction and Initial Characterization."

**L. A. Corson**, civil engineering, from Composites Fabricators Association, \$7,512, March 25, 2002 through April 30, 2002, "Technical Assistance Agreement (Multi-Sponsored)."

**L. A. Corson**, civil engineering, from Datec, \$2,260, May 1, 2002 through May 31, 2002, "Technical Assistance Program."

**L. A. Corson**, civil engineering, from Glas-Craft, Inc., \$2,050, March 20, 2002 through April 20, 2002, "Technical Assistance Agreement."

**L. L. Couetil**, veterinary clinical sciences, from DVM Pharmaceuticals, Inc., \$50,037, June 1, 2002 through December 31, 2002, "Evaluation of Inhaled Beclomethasone Dipropionate on Experimentally Induced Heaves in Horses."

**W. A. Crossley**, and **T. A. Weisshaar**, aeronautics and astronautics, from National Aeronautics and Space Administration, \$20,000, August 15, 2001 through August 14, 2004, "Design Methods and Optimization for Morphing Aircraft."

**V. J. Davisson**, medicinal chemistry and molecular pharmacology, from Public Health Service, \$147,806, April 1, 2002 through March 31, 2003, "Enzyme Targets, Apoptosis and Purine Metabolism."

**B. V. Dimaranan**, agricultural economics, from World Bank, \$28,657, February 15, 2002 through May 31, 2002, "World Trade Liberalization for the New Millennium: An Empirical Study."

**C. L. Dobbins**, agricultural economics, from University of Nebraska-Lincoln, \$13,000, July 1, 2001 through June 30, 2003, "Sare PDP Plan of Work."

**T. J. Downar**, nuclear engineering, from Argonne National Laboratory, \$59,997, May 15, 2002 through December 31, 2004, "High Fidelity Thermal-Hydraulic Capability for Reactor Transient Analysis - "The Numerical Nuclear Reactor"."

**J. B. Dunning**, and **D. M. Scheiman**, forestry and natural resources, from Indiana Academy of Science, \$1,000, May 1, 2002 through August 1, 2004, "Effects of Field Quality on Dispersal Rates of Boblinks: A Metapopulation Approach."

**R. Edwards**, and **L. W. Bledsoe**, entomology, from Dow Agrosciences, \$3,000, May 1, 2002 through December 31, 2002, "Field Testing of Seed in Accordance with Protocol No.S Na01X08001 and Na01X08021."

**D. Elmore**, physics, from Bechtel Saic Company, LLC, \$20,000, May 1, 2002 through September 30, 2002, "Quotation for Ams Measurement for Dr. Robert Roback."

**D. Elmore**, physics, from University of Kentucky Research Foundation, \$60,900, February 8, 2002 through December 31, 2002, "Aluminum Bioavailability from Foods."

**S. A. Evander**, and **D. C. Van Sickle**, basic medical sciences, from Med Institute, Incorporated, \$2,000, May 1, 2001 through January 31, 2002, "Accomplishment of High Detail Radiographs for Med Institute."

**T. N. Farris**, aeronautics and astronautics, from LSP Technologies Incorporated, \$20,400, April 1, 2002 through September 30, 2002, "Fretting Fatigue Testing for LSP Technologies, Inc."

**J. D. Forney**, biochemistry, from National Science Foundation, \$155,436, August 1, 2001 through July 31, 2003, "DNA Rearrangements and Macronuclear Development in Ciliated Protozoan."

**P. L. Fuchs**, chemistry, from Public Health Service, \$347,503, June 1, 2002 through May 31, 2003, "Oncogene Directed Synthesis of Cephalostatin Cancer Drug."

**N. Garofalo**, mathematics, from National Science Foundation, \$59,000, July 1, 2000 through June 30, 2003, "Non-Linear Equations in Analysis and Geometry."

**R. Giere**, earth and atmospheric sciences, from Indiana Academy of Science, \$1,411, June 1, 2002 through May 31, 2003, "Chemical and Mineralogical Characterization of Particulate Emissions from Coal-Fired Power Plants."

**D. J. Gotham**, electrical and computer engineering, from Nisource Energy Technologies, \$5,400, January 1, 2001 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality and Economics."

**D. J. Gotham**, electrical and computer engineering, from Nisource Energy Technologies, \$4,500, January 1, 2001 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**D. J. Gotham**, electrical and computer engineering, from Nisource Energy Technologies, \$3,375, January 1, 2001 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**D. J. Gotham**, **C. M. Ong**, and **F. T. Sparrow**, Institute-Interdisciplinary Engineering Studies, electrical and computer engineering, industrial engineering, from Nisource Energy Technologies, \$1,125, November 1, 2000 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**D. J. Gotham**, **C. M. Ong**, and **F. T. Sparrow**, Institute-Interdisciplinary Engineering Studies, electrical and computer engineering, industrial engineering, from Nisource Energy Technologies, \$2,025, November 1, 2000 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**D. J. Gotham**, electrical and computer engineering, from Nisource Energy Technologies, \$11,250, January 1, 2001 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**D. J. Gotham**, electrical and computer engineering, from Nisource Energy Technologies, \$6,300, January 1, 2001 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**D. J. Gotham**, electrical and computer engineering, from Nisource Energy Technologies, \$4,500, January 1, 2001 through December 31, 2002, "Enhancing the Operation of Highly Varying Industrial Loads to Increase Electric Reliability, Quality, and Economics."

**J. P. Greenan**, curriculum and instruction, from Indiana Commission for Higher Education, \$138,948, May 13, 2002 through May 30, 2003, "Professional Development Program in Career and Technical Education."

**P. Guo**, veterinary pathobiology, from Public Health Service, \$112,295, May 1, 2002 through April 30, 2003, "Stoichiometry Quantification Complex Biological Systems."

**J. M. Harbor**, earth and atmospheric sciences, from National Science Foundation, \$186,592, May 15, 2002 through April 30, 2004, "Cosmogenic Nuclide-Based Boundary Conditions for Numerical Ice Sheet Models: A Simulation of the Fennoscandian Ice Sheet through a Glacial Cycle."

**B. G. Harmon**, animal sciences, from American Soybean Association, \$10,000, July 7, 2002 through July 20, 2002, "Swine Technology School and On-Farm Experience."

**M. T. Harris**, chemical engineering, from U.S. Department of Commerce, \$48,515, April 26, 2002 through October 25, 2002, "Studies of Microstructure in Complex Ceramic Materials."

**M. Hastak**, civil engineering, from University of Cincinnati, \$43,368, August 1, 2001 through June 30, 2002, "The Evaluation of Warranty Provisions on Ohio Department of Transportation Construction Projects."

**M. Hastak**, civil engineering, from University of Texas at Austin, \$94,134, January 1, 2002 through December 31, 2003, "Investigation of Methods to Achieve a High Performance Project Delivery System."

**C. M. Hoffmann**, computer science, from Army Research Office, \$150,000, May 3, 2002 through May 2, 2003, "Volume-Filling Image Display Equipment."

**R. D. Howard**, and **K. A. Larson**, biological sciences, from Indiana Academy of Science, \$921, March 1, 2002 through February 28, 2003, "Advertisement Call Complexity in the Northern Leopard Frog, *Rana pipiens*."

**R. D. Howard**, and **J. E. Jannot**, biological sciences, from Indiana Academy of Science, \$920, April 1, 2002 through March 31, 2003, "Resource Allocation Across Life Stages in Limephid Caddisflies."

**K. C. Howell**, aeronautics and astronautics, from National Aeronautics and Space Administration, \$50,000, May 1, 2002 through July 31, 2003, "Dynamical Systems Theory, Numerical Methods, Optimization Strategies and Their Application to Trajectory Design and Mission Analysis Involving Lissajous and Halo Orbits at the GSFC GNCC."

**G. S. Hundley**, and **C. E. Keck**, School of Management - administration and instruction, foreign languages and literature, from U.S. Department of Education, \$355,000, October 1, 2002 through September 30, 2003, "Purdue Center for International Business Education and Research (Ciber)."

**G. J. Hunt**, entomology, from National Science Foundation, \$129,888, September 15, 2001 through August 31, 2003, "Fine Scale Genetic Mapping and Sequence Analysis of Genes Involved in Honey Bee Stinging Behavior."

**M. Ishii**, nuclear engineering, from Nuclear Regulatory Commission, \$108,600, April 15, 2002 through December 31, 2002, "Institute of Thermal-Hydraulics-Task Order 6 Modification 14."

**M. Ishii**, and **V. H. Ransom**, nuclear engineering, from Tokyo Electric Power Company, Inc., \$104,653, October 1, 2000 through September 30, 2002, "Experimental and Theoretical Study of Subcooled Boiling for Numerical Simulation."

**R. B. Jacko**, civil engineering, from Indiana Department of Transportation, \$175,000, April 1, 2002 through April 30, 2004, "Continuation of Research to Determine the Effectiveness of ITS on Borman Expressway Air Quality."

**D. R. Johnson**, and **M. J. Krane**, materials engineering, from National Aeronautics and Space Administration, \$40,000, June 1, 2000 through November 30, 2003, "Experimental and Numerical Investigations of Growth Morphologies of Peritectic Reactions."

**H. I. Kenttamaa**, chemistry, from Petroleum Research Fund, \$2,400, June 1, 2002 through December 31, 2002, "Support for Foreign Travel for Speakers at the 29th Reaction Mechanisms Conference."

**A. H. King**, materials engineering, from Anteon Corporation, \$36,000, April 22, 2002 through February 15, 2003, "Growth of Vanadium Sesquioxide and Vanadium Dioxide Single Crystals."

**S. D. King**, earth and atmospheric sciences, from National Science Foundation, \$71,250, July 1, 2002 through June 30, 2003, "Plate Motions in 3D Cartesian Convection: the Role of Internal Heating and Plate Reorganization."

**B. A. Kingsbury**, biology - Fort Wayne Campus, from Michigan Department of Natural Resources, \$40,000, August 15, 2001 through September 30, 2003, "Massasanga Ecology and Conservation in Northern Michigan."

**D. E. Kiss**, consumer sciences and retailing, from National Endowment for Financial Education, \$1,000, January 1, 2002 through December 31, 2002, "High School Financial Planning Program."

**E. J. Kladvko**, agronomy, from Oregon Ryegrass Growers Seed Commission, \$1,500, December 1, 2001 through September 30, 2002, "Establishment of Annual Ryegrass Demonstration Plots as a Cover Crop for Soybean and Corn Production in the Central United States."

**D. B. Klenosky**, health, kinesiology and leisure studies, from Lafayette Parks and Recreation Department, \$1,800, April 1, 2002 through September 15, 2002, "Lafayette Parks and Recreation 2002 Mail Survey."

**M. Laskowski**, chemistry, from Public Health Service, \$366,647, June 1, 2002 through May 31, 2003, "Predicting Protein Reactivity from the Sequence Alone."

**B. D. Lee**, agronomy, from Allen County Health Department, \$15,000, January 1, 2002 through December 31, 2002, "Preliminary Investigation of Soil Conditions in Allen County and Northeastern Indiana."

**R. P. Lemenager**, **J. D. Arseneau**, **M. C. Claeys**, **J. C. Forrest**, and **R. H. Linton**, animal sciences, food sciences, from Indiana Comm for Agriculture and Rural Development, \$44,001, March 2, 2002 through December 1, 2002, "Effect of Beef Carcass Aging Method on Meat Tenderness, Flavor and Microbial Assessment."

**J. A. Lemire**, nursing - Fort Wayne Campus, from Helene Fuld Health Trust, \$12,708, March 1, 2002 through February 28, 2003, "Nursing Leadership Education Model Project."

**D. E. Lewis**, graduate school administration, from Public Health Service, \$65,985, March 1, 2002 through February 28, 2003, "Evaluation Supplement Request."

**Z. Li**, and **A. Y. Grama**, computer science, from National Science Foundation, \$89,999, September 1, 2000 through February 29, 2004, "Itr/Sw+Acs: Dynamic Code Enhancement and Scheduling Techniques for Complex Simulations."

**L. M. Lipshitz**, mathematics, from National Science Foundation, \$58,500, June 1, 2000 through May 31, 2003, "The Model Theory of Valued Fields with Analytic Structure."

**M. A. Lopez-De-Bertodano**, nuclear engineering, from Bechtel Bettis, Inc., \$66,839, April 11, 2002 through March 31, 2003, "Development of Turbulent Diffusivity Correlations for the Two-Fluid Model in Bubbly and Churn Flows."

**J. M. Lowenberg-DeBoer**, agricultural economics, from Michigan State University, \$14,000, April 28, 2002 through August 31, 2002, "West Africa Regional Coordinator."

**S. M. MacDermid**, child development and family studies, from Anheuser-Busch Companies, \$500, January 1, 2002 through December 31, 2002, "Midwestern Work Family Association."

**S. M. MacDermid**, child development and family studies, from University of Illinois, \$300, January 1, 2002 through December 31, 2002, "Midwestern Work Family Association."

**V. M. Maloney**, chemistry - Fort Wayne Campus, from Petroleum Research Fund, \$8,000, May 1, 2002 through August 31, 2002, "The Spectroscopy and Reactivity of Phosphoryl- And Sulfonylnitrenes."

**D. J. Marshall**, civil and architectural engineering tech - Fort Wayne Campus, from Indiana Campus Compact, \$3,000, January 1, 2002 through April 30, 2002, "Managing Service-Learning Opportunities."

**B. G. McCullouch**, civil engineering, from Indiana Department of Transportation, \$155,000, May 1, 2002 through April 30, 2004, "Materials for Training of New Staff on Effective Design Procedures."

**S. A. McLuckey**, chemistry, from U.S. Department of Energy, \$110,000, September 1, 2000 through May 31, 2003, "The Dynamics and Thermodynamics of Gaseous Macro-Ions."

**S. E. Meyer**, aeronautics and astronautics, from Aerojet Strategic Propulsion Company, \$8,489, April 22, 2002 through December 31, 2002, "Advanced Nontoxic Propellant Propulsion Student Phase I- Propellant Study."

**M. D. Murray**, pharmacy practice, from Indiana University, \$17,239, February 15, 2002 through February 14, 2003, "Indiana University Clinical Pharmacology."

**D. J. Murry**, pharmacy practice, from Indiana University, \$16,586, February 15, 2002 through January 31, 2003, "Cpt-11 Activation by Carboxylesterases in Colon Cancer."

**S. L. Nail**, industrial and physical pharmacy, from Aventis Pharmaceuticals Inc., \$25,000, July 1, 2002 through June 30, 2003, "NSF Industry/University Cooperative Research Center in Pharmaceutical Processing."

**S. L. Nail**, and **D. O. Kildsig**, industrial and physical pharmacy, from Glaxo Welcome, Inc., \$25,000, July 1, 2001 through June 30, 2002, "Industry/University Cooperative Research Center in Pharmaceutical Processing."

**S. L. Nail**, and **D. O. Kildsig**, industrial and physical pharmacy, from Schering Corporation, \$25,000, July 1, 2000 through June 30, 2002, "Industry/University Cooperative Research Center in Pharmaceutical Processing."

**E. I. Negishi**, chemistry, from National Science Foundation, \$160,000, August 1, 2000 through July 31, 2003, "Carbon-Carbon Bond-Forming and Cleaving Stoichiometric and Catalytic Organometallic Reactions."

**L. R. Nelson**, curriculum and instruction, from Indiana Council for Social Studies Inc., \$4,148, December 11, 2001 through June 30, 2003, "Great Lakes 2002."

**D. D. Nolte**, physics, from National Science Foundation, \$239,999, July 1, 2002 through June 30, 2005, "High-Speed Multi-Analyte Biosensor Using Adaptive Laser Interferometry."

**J. A. Nyenhuis**, electrical and computer engineering, from Medtronic, Inc., \$7,500, March 11, 2002 through May 10, 2002, "Evaluation of Currents Induced by the MRI Pulsed Gradient Magnetic Field."

**J. A. Nyenhuis**, and **A. V. Kildishev**, electrical and computer engineering, from Office of Naval Research, \$24,902, November 1, 1999 through October 31, 2002, "Stochastic Modeling of Magnetic Signatures from Naval Motors."

**M. T. O'Hair**, Kokomo Statewide Technology, from Indiana Department of Commerce, \$30,000, April 19, 2002 through June 1, 2003, "Project Lead the Way."

**M. T. O'Hair**, Kokomo Statewide Technology, from Indiana Commission for Higher Education, \$140,154, May 13, 2002 through July 31, 2003, "Indiana Project Lead the Way: Pre-Engineering/Engineering Technology Program for Middle Schools and High Schools."

**M. T. O'Hair**, Kokomo Statewide Technology, from Indiana Department of Education, \$30,000, January 14, 2002 through September 30, 2002, "Project Lead the Way."

**L. R. Okagaki**, child development and family studies, from Kinley Trust, \$19,711, May 1, 2002 through April 30, 2003, "Correlates of Successful Bicultural Development Among Mexican-American Youth."

**E. A. Pajor**, animal sciences, from Agricultural Research Service, \$70,988, September 24, 1999 through June 14, 2003, "Animal Welfare in Food Producing Animals."

**J. Palsberg**, computer science, from National Science Foundation, \$15,000, September 1, 2001 through August 31, 2002, "ITR: Static Timing of Interrupt-Driven Software."

**I. Pomeranz**, electrical and computer engineering, from Intel Corporation, \$78,000, January 1, 2002 through December 31, 2002, "Unified Defect Diagnosis for Scan Designs."

**M. D. Raftery**, chemistry, from National Science Foundation, \$87,000, August 15, 2001 through July 31, 2003, "NMR of Single Crystal Surfaces."

**D. Ragland**, veterinary clinical sciences, from National Pork Producers Council, \$6,100, April 1, 2002 through October 1, 2002, "Evaluation of Antimicrobial Alternatives to Reduce the Development of Antibiotic Resistance."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$1,000, July 1, 2001 through February 1, 2003, "1997 National Bermudagrass (#Bg 97-17) Test."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$2,000, July 1, 2001 through February 1, 2004, "1998 National Fineleaf Fescue Test - #Ff 98-5."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$2,500, July 1, 2001 through February 1, 2005, "1999 National Perennial Ryegrass (Pr-99-19) Test."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$12,000, February 1, 2002 through February 1, 2007, "2000 National Kentucky Bluegrass Test."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$12,000, June 1, 2002 through May 31, 2007, "2002 National Bermudagrass Test."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$12,000, June 1, 2002 through May 31, 2007, "2002 National Zoysiagrass Test (Zq-02-16)."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$6,000, June 1, 2002 through May 31, 2007, "Ancillary Study Zoysia Patch/Large Patch."

**Z. J. Reicher**, agronomy, from National Turfgrass Evaluation Program, \$2,000, July 1, 2001 through February 1, 2003, "Gcsaa/Usga/Ntep On-Site Testing Program for Bentgrass and Bermudagrass on USGA Specification Putting Greens."

**S. T. Revankar**, nuclear engineering, from U.S. Department of Energy, \$56,613, September 1, 2001 through August 31, 2003, "Analytical and Experimental Study of the Effects of Non-Condensable in a Passive Condenser System for the Advanced Boiling Water Reactor."

**O. E. Rhodes, B. J. MacGowan, and R. K. Swihart**, forestry and natural resources, from Indiana Department of Natural Resources, \$269,470, August 1, 2002 through July 31, 2006, "Assessment of Crop Depredation and Habitat Use by Wild Turkey, Whitetailed Deer and Raccoon in the Upper Wabash River Basin."

**K. R. Robinson**, biological sciences, from National Science Foundation, \$125,206, May 15, 2001 through April 30, 2003, "Calcium, Reactive Oxygen Species, and Pollen Tube Growth."

**M. A. Rotea**, aeronautics and astronautics, from Fleet and Industrial Supply Center, \$28,133, April 15, 2002 through July 15, 2002, "Parameter Estimation for Airdrop Systems."

**I. P. Rothwell**, chemistry, from National Science Foundation, \$120,000, August 1, 2000 through July 31, 2003, "New Aspects of Early D-Block Aryloxide Chemistry."

**A. C. Sa Barreto**, mathematics, from National Science Foundation, \$45,000, June 1, 2002 through May 31, 2003, "Research on Wave Equations and Scattering Theory."

**F. Sadeghi**, mechanical engineering, from U.S. Department of Energy, \$175,000, April 1, 2002 through March 31, 2005, "Advanced Natural Gas Reciprocating Engine: Parasitic Loss Control through Surface Modification."

**C. S. Sadof**, entomology, from Indiana Department of Natural Resources, \$125,000, June 1, 2002 through May 31, 2003, "Gypsy Moth Education Program."

**D. E. Salt**, horticulture and landscape architecture, from National Science Foundation, \$108,223, May 10, 2001 through May 31, 2003, "Molecular Mechanism of Nickel Hyperaccumulation in *Thlaspi Goesingense*."

**G. A. Sandison**, health sciences, from Indiana University, \$52,559, March 1, 2002 through February 29, 2004, "Ungated Cardiac Imaging with Subsecond Multi-Slice Spira Ct."

**F. Shahidi**, mathematics, from National Science Foundation, \$93,221, June 1, 2002 through May 31, 2003, "Automorphic L-Functions and Langlands Functoriality."

**V. M. ShalaeV**, electrical and computer engineering, from Battelle Research Triangle Park Office, \$48,681, May 1, 2002 through April 30, 2003, "Metal Dielectric Composite Filters with Spectral Windows of Transparency/Battelle Subcontract."

**V. M. ShalaeV**, electrical and computer engineering, from Battelle Research Triangle Park Office, \$1,000, March 1, 2002 through March 1, 2003, "Systematic Study of Electromagnetic Absorption and Scattering by Fractal Aggregates."

**V. M. ShalaeV**, electrical and computer engineering, from U.S. Department of Defense, \$156,994, May 15, 2002 through May 14, 2003, "Instrumentation for Research on Plasmonic Nano-Materials and Their Application in Photonics."

**C. W. Sigurdson**, agricultural communication service, from Ohio State University, \$20,560, October 1, 2001 through September 30, 2002, "Cooperative Venture to Develop a Joint Electronic News Service."

**K. C. Sinha, and G. P. McCabe**, civil engineering, statistics, from Indiana Department of Transportation, \$20,000, November 27, 2000 through November 26, 2002, "Evaluation of Radar (Radio Detection and Ranging) Sensing in Reducing Vehicle-Deer Collisions on the Indiana Toll Road."

**K. C. Sinha**, civil engineering, from Indiana Department of Transportation, \$175,000, February 15, 2002 through February 14, 2004, "Life Cycle Cost Analysis for Indiana Department of Transportation Pavement Design Procedures."

**K. C. Sinha**, civil engineering, from Indiana Department of Transportation, \$30,000, May 1, 2002 through August 1, 2002, "Short Course on Highway Capacity Analysis."

**J. L. Smith**, biological sciences, from National Science Foundation, \$297,575, May 1, 2002 through April 30, 2004, "X-Ray Diffraction Laboratory Upgrade."

**J. L. Smith**, biological sciences, from Saic Frederick, \$55,835, February 20, 2002 through February 19, 2003, "Directorship of Gm/Ca Cat."

**C. V. Stauffacher**, biological sciences, from Public Health Service, \$232,761, May 1, 2002 through April 30, 2003, "Structure of Low Molecular Weight Tyrosine Phosphatases."

**G. C. Steinhardt**, agronomy, from Indiana Department of Natural Resources, \$23,237, May 14, 2002 through May 13, 2004, "Classification of Surface Mined Soils and Prediction of Corn Yields Based on Soil Classification."

**E. A. Strickland**, audiology and speech sciences, from Kinley Trust, \$20,000, June 1, 2002 through May 31, 2003, "The Effects of Cochlear Hearing Impairment Or Dynamic Changes in Frequency Selectivity."

**J. J. Stuart**, entomology, from Agricultural Research Service, \$119,400, March 27, 2000 through March 26, 2005, "Genetic Manipulation of Hessian Fly and Non Drosophilid Insects by Transportation and Viral Vectors."

**J. A. Stuart**, industrial engineering, from National Science Foundation, \$12,000, May 1, 2002 through January 31, 2003, "New Modeling Framework and Technology to Optimize Resource Utilization in Plastics Supply Cycle (Tse01-H)."

**G. H. Sullivan, C. R. Edwards, R. E. Foster, G. E. Shively, and S. C. Weller**, horticulture and landscape architecture, entomology, agricultural economics, from Virginia Polytechnic Institute and State University, \$62,683, September 27, 2001 through September 28, 2002, "Year Nine Integrated Pest Management Collaborative Research Support Program-Central America, Mali and Bangladesh Sites."

**I. Szeifer**, chemistry, from National Science Foundation, \$95,000, October 1, 2000 through September 30, 2003, "Thermodynamic and Kinetic Control of Absorption in Complex Fluids."

**T. M. Talavage**, electrical and computer engineering, from Public Health Service, \$112,500, May 15, 2002 through April 30, 2003, "An fMRI-Compatible Fiber Opti Hand Controller for Subject Interaction."

**H. Z. Tan, D. S. Ebert, E. D. Hirleman, A. A. Maclejewski, and Z. Pizlo**, electrical and computer engineering, mechanical engineering, psychological sciences, from National Science Foundation, \$94,764, August 1, 2001 through July 31, 2003, "Haptic Texture Perception and Rendering for Personal Robotics."

**A. P. Tarko**, civil engineering, from Indiana Department of Transportation, \$70,000, February 1, 2002 through January 31, 2004, "Using Imaging Technology to Evaluate Highway Safety."

**D. Teegarden, C. J. Boushey, R. M. Lyle, G. P. McCabe, and D. A. Savaiano**, foods and nutrition, health, kinesiology and leisure studies, statistics, School of Consumer and Family Sciences - administration, from Dairy Management, Inc. (Dmi), \$136,969, January 1, 2002 through December 31, 2004, "Effect of Dietary Calcium Education Intervention on Changes in Weight and Bone Fat Mass in Adolescents."

**T. J. Templin, and W. A. Harper**, health, kinesiology and leisure studies, from PHS-ACF Administration for Children and Families, \$55,500, June 1, 2002 through May 31, 2003, "National Youth Sports Program."

**S. T. Tiffany, C. R. Agnew, and N. S. Maylath**, psychological sciences, student health center, from University of Kentucky Research Foundation, \$201,429, April 1, 2002 through September 30, 2004, "Research Network on the Etiology of Tobacco Dependence."

**M. M. Tomovic, and K. Ramani**, mechanical engineering technology, from American Foundrymen's Society, Inc., \$2,000, April 15, 2002 through September 30, 2002, "Metalcasting Related Information Technology."

**M. M. Tomovic, and K. Ramani**, mechanical engineering technology, from JI French Automatic Castings, Inc., \$7,903, June 1, 2002 through May 30, 2003, "Development of Composite Disc Brake Rotors."

**K. P. Trumble**, materials engineering, from Howmet Corporation, \$83,718, December 15, 2001 through December 14, 2003, "The Role of Capillarity in Shell Mold Dewaxing."

**J. F. Tu**, industrial engineering, from National Science Foundation, \$181,931, May 1, 2002 through April 30, 2004, "Characterizing Keyhole Plasma Intensity and Absorption Mechanisms for Improving High Speed, Very Deep Penetration Laser Beam Welding."

**D. J. Vandergraff**, foods and nutrition, from March of Dimes Birth Defects Foundation, \$5,000, June 1, 2002 through May 31, 2003, "Folic Acid Education in Indiana."

**K. M. Vierow**, nuclear engineering, from U.S. Department of Energy, \$90,064, June 1, 2002 through May 31, 2003, "Horizontal Heat Exchanger Design and Analysis for Passive Containment Heat Removal Systems."

**T. J. Vyn, and S. M. Brouder**, agronomy, from Foundation for Agronomic Research, \$7,500, April 1, 2001 through February 28, 2003, "Nutrient Management for High Yield Corn and Soybeans."

**B. A. Watkins, P. R. Brown, J. R. Burgess, N. C. Carpita, S. S. Donkin, B. R. Hamaker, K. T. McNamara, S. E. Mills, J. E. Simon, R. K. Singh, J. J. Turek, and D. J. Waters**, food sciences, forestry and natural resources, foods and nutrition, botany and plant pathology, animal sciences, agricultural economics, horticulture and landscape architecture, basic medical sciences, veterinary clinical sciences, from 21st Century Research and Technology Fund, \$48,000, August 4, 2000 through August 4, 2002, "A Center of Excellence: Enhancing Foods to Protect Health."

**V. J. Watts**, medicinal chemistry and molecular pharmacology, from Public Health Service, \$223,894, May 1, 2002 through April 30, 2003, "D2 Receptor-Induced Sensitization of Adenylyate Cyclase."

**C. M. Weaver, D. Elmore, R. D. Mattes, G. P. McCabe, D. J. Morre, D. M. Morre, and C. R. Santerre**, foods and nutrition, physics, statistics, medicinal chemistry and molecular pharmacology, from National Institutes of Health, \$22,880, September 15, 2001 through July 31, 2003, "Botanicals for Age Related Diseases."

**J. Webb**, convocations and lectures, from New England Foundation for the Arts, \$1,740, October 23, 2001 through March 31, 2002, "Performance: Ballet Hispanico."

**K. J. Webb**, electrical and computer engineering, from Cree, Inc., \$30,000, February 7, 2000 through November 8, 2002, "Development of High Power, Wide Bandwidth Mmic Amplifier Using Aigan/Gan Hemt Technology on Semi-Insulating 4H-Sic."

**K. J. Webb, and A. M. Weiner**, electrical and computer engineering, from National Science Foundation, \$63,567, June 1, 2002 through May 31, 2003, "Characterization of Scattering Media and Optical Fiber Using Vector Speckle and High-Order Correlations."

**A. M. Weiner**, electrical and computer engineering, from National Science Foundation, \$255,000, June 1, 2002 through May 31, 2005, "Goal: Polarization Mode Dispersion Compensation in the Spectral Domain Using Liquid Crystal Modulator Arrays."

**W. J. Weiss, and M. D. Cohen**, civil engineering, from Indiana Department of Transportation, \$95,000, March 1, 2002 through August 31, 2003, "Development of a Rapid-Set Cement-Based Material Composition for Patching and Repair."

**G. L. Willoughby**, agronomy, from Growmark, Inc., \$5,250, April 30, 2002 through September 30, 2002, "Diagnostic Training."

**G. L. Willoughby**, agronomy, from Indiana Association of Professional Crop Consultant, \$4,900, April 30, 2002 through September 30, 2002, "Diagnostic Training."

**G. L. Willoughby**, agronomy, from Indiana Seed Trade Association, \$4,500, April 30, 2002 through September 30, 2002, "Diagnostic Training."

**S. D. Wilson**, agricultural statistics, from Indiana Department of Natural Resources, \$2,195, March 15, 2002 through March 14, 2003, "Small Game Harvest Survey."

**B. Younger-Rossmann**, psychological sciences, from National Science Foundation, \$81,473, September 1, 2001 through August 31, 2003, "Comprehension-Based Assessment of Infants' Object Concepts."

**J. D. Zimbrick**, health sciences, from Public Health Service, \$243,015, May 1, 2002 through April 30, 2003, "Radiation Biochemistry of Clustered Damage Sites in DNA."

**M. D. Zoltowski**, electrical and computer engineering, from National Science Foundation, \$99,279, September 1, 2001 through August 31, 2004, "Reduced-Dimension Decision Feedback Equalizers for High-Speed Wireless Digital Communications."

**T. S. Zwier**, chemistry, from National Aeronautics and Space Administration, \$104,472, May 1, 2002 through April 30, 2005, "Laboratory Studies of Photochemical Routes to Aromatic Ring Formation in the Atmospheres of Titan and Saturn."

# June 2002 Projects Funded

**T. S. Abney**, botany and plant pathology, from University of Georgia, \$120,000, September 15, 2001 through September 30, 2004, "In Pathogen Germplasm (*Phytophthora Sojae*)."

**D. M. Abraham**, civil engineering, from National Science Foundation, \$199,995, August 1, 2002 through July 31, 2004, "Asset Condition Evaluation Techniques for Improved Infrastructure Reporting."

**J. Abraham**, mechanical engineering, from Arvinmeritor, \$61,656, April 15, 2002 through October 31, 2002, "Fuel Injection Strategies for a Pre-Combustion Chamber."

**O. Adeola**, animal sciences, from Finnfeeds International, \$225,227, May 1, 2002 through April 30, 2003, "The Xap Project."

**W. E. Anderson, S. D. Heister, and S. E. Meyer**, aeronautics and astronautics, from National Aeronautics and Space Administration, \$135,520, June 1, 2002 through January 31, 2003, "Design, Fabrication, and Testing of a Rocket-Based Combined Cycle Flight Experiment."

**W. E. Anderson, S. D. Heister, and S. E. Meyer**, aeronautics and astronautics, from National Aeronautics and Space Administration, \$99,021, June 3, 2002 through June 3, 2003, "Development of a Partial Design Database for Advanced Hydrogen Peroxide Engines."

**B. M. Applegate**, food sciences, from Naval Research Laboratory, \$100,000, May 28, 2002 through May 27, 2005, "Genetic Engineering of Bioreporter Magnetotactic Bacteria for Magneto-electronic Sensing."

**W. G. Aref**, computer science, from National Science Foundation, \$55,560, September 15, 2001 through August 31, 2003, "Research and Development of Database Technologies for Modern Applications."

**S. F. Badylak**, biomedical engineering, from National Institutes of Health, \$358,078, June 1, 2002 through May 31, 2003, "Origin of Cells that Repopulate Resorbable ECM Scaffolds."

**T. S. Baker**, biological sciences, from University of Central Florida, \$75,700, September 1, 2001 through August 31, 2002, "Enhanced 3D Processing of Spherical and Non-Spherical Virus Structures at High Resolution."

**R. Banuelos**, mathematics, from National Science Foundation, \$19,200, July 1, 2002 through May 31, 2003, "In Search of Sharp Inequalities."

**V. E. Barnes**, physics, from Fermi National Accelerator Laboratory, \$2,495, November 1, 2000 through November 30, 2000, "Radioactive  $^{60}\text{Co}$  Seed Source."

**R. Bashir**, electrical and computer engineering, from Public Health Service, \$101,051, July 1, 2002 through June 30, 2003, "Silicon Based Nano-Sensor for Single Molecule RNA/DNA Sequencing and Characterization."

**L. E. Bednar, and L. M. Duttlinger**, student services - North Central Campus, developmental studies - North Central Campus, from Indiana Commission for Higher Education, \$95,575, July 1, 2002 through June 30, 2003, "Perkins Post Secondary Comprehensive Local Plan FY03 Budget."

**M. W. Blalock**, schools of engineering administration and engineering experiment station, from Diversified Career and Educational Service, \$35,000, June 1, 2002 through August 31, 2002, "Research in Science and Engineering Program."

**R. E. Blanton**, sociology and anthropology, from National Science Foundation, \$92,043, June 1, 2002 through May 31, 2004, "Evaluation Collective Action through Cross-Cultural Analysis of Pre-Modern States."

**L. W. Bledsoe**, entomology, from Monsanto Company, \$4,000, April 8, 2002 through April 7, 2003, "Efficacy of Lead Transgenic Corn Rootworm Event Against Western and Northern Corn Rootworm."

**C. R. Boiarsky, and E. M. Schwartz**, English and philosophy - Calumet Campus, from National Writing Project Corporation, \$28,000, July 1, 2001 through June 30, 2003, "Northwest Indiana Writing Project/US Department of Education."

**J. T. Bolin**, biological sciences, from Public Health Service, \$159,022, July 1, 2002 through June 30, 2003, "Biophysical Studies of Proteins Nucleic Acids and Viruses."

**R. E. Booker**, field extension educators, from University of Wisconsin System, \$13,200, October 1, 2000 through September 30, 2003, "Regional Multi-State Interpretation of Small Farm Financial Data."

**D. Bortoletto, and I. P. Shipsey**, physics, from Fermi National Accelerator Laboratory, \$147,466, November 1, 2001 through September 30, 2005, "US CMS Forward Pixels Subsystem."

**J. D. Bourland, and W. E. Schoenlein**, biomedical engineering, from Cardiac Science, Inc., \$53,553, January 1, 2002 through December 31, 2002, "ECG Trace Quality Evaluation."

**C. J. Boushey**, foods and nutrition, from Indiana Family and Social Services Administration, \$79,538, June 1, 2002 through March 31, 2003, "Safe Food for the Hungry 2002."

**S. S. Broyles**, biochemistry, from Public Health Service, \$130,730, July 1, 2002 through June 30, 2003, "Training in Biochemistry and Molecular Biology."

**C. E. Burwell**, 4-H Youth, from Cooperative State Research Service, \$2,500, June 1, 2002 through September 30, 2003, "Healthy Indoor Air for America's Homes."

**M. W. Caffee**, physics, from University of California, \$210,000, April 1, 2002 through March 31, 2005, "Advanced High-Sensitive Cosmogenic Nuclide Measurements for Sample Return."

**A. M. Chang, and R. Bashir**, physics, electrical and computer engineering, from National Science Foundation, \$100,434, June 15, 2001 through May 31, 2003, "Notice Spectroscopy for the Investigation and Characterization of Ultra-Thin Dielectrics."

**J. A. Chmielewski**, chemistry, from Public Health Service, \$235,943, July 1, 2002 through June 30, 2003, "Dimerization Inhibitors of HIV-1 Protease and Integrase."

**R. Colella, and D. W. Mitchell**, physics, philosophy, from Templeton Foundation, the, \$1,000, February 1, 1999 through August 30, 2002, "Lecture Series on Science and Religious Faith at Purdue University."

**S. H. Collicott**, aeronautics and astronautics, from National Aeronautics and Space Administration, \$29,472, June 3, 2002 through June 3, 2003, "Zero-Gravity Validation of Surface-Tension Propellant for Rocket-Grade Hydrogen Peroxide."

**R. G. Cooks**, chemistry, from Office of Naval Research, \$176,000, July 15, 2002 through July 14, 2005, "Construction, Evaluation and Simulation of Ion Motion in a Kingdom Trap Mass Spectrometer."

**L. A. Corson**, civil engineering, from Dwyer Instruments, Inc., \$2,529, June 1, 2002 through July 1, 2002, "Technical Assistance Agreement."

**L. A. Corson**, civil engineering, from Fairmont Homes, \$1,463, December 1, 2001 through April 30, 2002, "Technical Assistance Program-Carl."

**L. A. Corson**, civil engineering, from Fairmont Homes, \$1,463, December 1, 2001 through April 30, 2002, civil engineering, from Committee on Institutional Cooperation, \$11,700, June 1, 2002 through February 28, 2003, "Operating System Security Short Course."

**H. R. Day**, agricultural economics, from Indiana Department of Education, \$80,000, July 1, 2002 through June 30, 2003, "Indiana Department of Education State Grant."

**L. P. Deboer**, agricultural economics, from Legislative Services Agency, \$30,321, July 1, 2002 through June 30, 2003, "Continued Work with Legislative Services Agency."

**H. G. Donnelly**, mathematics, from National Science Foundation, \$108,001, June 15, 2002 through May 31, 2005, "Spectral Theory of Riemannian Manifolds."

- T. J. Downar**, nuclear engineering, from U.S. Department of Energy, \$124,442, June 4, 2001 through June 3, 2003, "Adaptive Neutron Transport Methods for Reactor Transient Analysis."
- J. B. Dunning**, and **D. M. Scheiman**, forestry and natural resources, from Sigma Xi, \$300, May 1, 2002 through August 1, 2004, "Effects of Field Quality on Dispersal Rates of Bobolinks: A Metapopulation Approach."
- J. B. Dunning**, and **D. M. Scheiman**, forestry and natural resources, from Wilson Ornithological Society, \$500, May 1, 2002 through August 1, 2004, "Effects of Field Quality on Dispersal Rates of Robolinks: A Metapopulation Approach."
- S. M. Durbin**, **W. A. Cramer**, and **E. W. Prohofsky**, physics, biological sciences, from National Science Foundation, \$120,000, August 1, 2000 through July 31, 2003, "Functional Control via Heme-Backbone Interactions in Respiratory and Photosynthetic Heme Proteins Observed with X-Ray Nuclear Absorption Spectroscopy."
- E. N. Dzhafarov**, psychological sciences, from National Science Foundation, \$46,239, August 1, 2000 through July 31, 2003, "Fechnarian Scaling: Metric from Discriminability."
- G. Ejeta**, agronomy, from University of Nebraska, \$25,500, July 1, 2001 through June 30, 2002, "Development and Enhancement of Sorghum Germplasm and Collaborative Research on Drought and Grain Mold Resistance, Prf-207."
- G. Ejeta**, agronomy, from University of Nebraska, \$39,000, July 1, 2001 through June 30, 2002, "INTSORMIL/Horn of Africa Region, Prf-211."
- G. Ejeta**, agronomy, from University of Nebraska, \$25,500, July 1, 2001 through June 30, 2002, "Striga Biotechnology Development and Technology Transfer, Prf-213."
- A. K. Elmagarmid**, **A. Ghafoor**, **J. T. Korb**, **K. Park**, and **E. H. Spafford**, computer science, electrical and computer engineering, from National Science Foundation, \$96,251, September 15, 1999 through August 31, 2003, "Msi: A Research Infrastructure for Integrated Quality of Service Management in Multimedia Computing Environments."
- D. Elmore**, physics, from PHS-CDC Centers for Disease Control, \$49,250, May 21, 2002 through November 30, 2002, "Quotation for AMS Measurement for Centers for Disease Control."
- W. E. Field**, agricultural and biological engineering, from Greater Lafayette Community Foundation, \$5,000, July 1, 2002 through June 30, 2003, "Truck and Trailer for the "Community Outreach Program"."
- S. Fleeter**, mechanical engineering, from Rolls-Royce, Inc., \$240,000, January 1, 2002 through December 31, 2002, "Axial Flow Compressor Aerodynamics."
- N. Fowler**, field extension educators, from Indiana Family and Social Services Administration, \$17,927, July 1, 2002 through June 30, 2003, "Step Ahead of Dearborn County."
- G. S. Francis**, psychological sciences, from National Science Foundation, \$58,919, August 15, 2001 through July 31, 2003, "Quantitative Investigations of Backward Masking."
- R. J. Frosch**, civil engineering, from Indiana Department of Transportation, \$24,096, July 1, 2002 through August 31, 2003, "Simplified Shear Design of Prestressed Concrete Members."
- R. W. Gann**, agricultural statistics, from National Agricultural Statistics Service, \$11,900, October 1, 2001 through September 30, 2002, "Collect, Analysis and Publication of Primary Crop and Livestock Data."
- R. W. Gann**, agricultural statistics, from National Agricultural Statistics Service, \$55,000, October 1, 2001 through September 30, 2002, "Collection, Analysis and Publication of Primary Crop and Livestock Statistical Data for the State of Indiana."
- R. W. Gann**, agricultural statistics, from National Agricultural Statistics Service, \$65,000, October 1, 2001 through September 30, 2002, "Collection, Analysis and Publication of Primary Crop and Livestock Statistical Data for the State of Indiana."
- S. V. Garimella**, mechanical engineering, from Delphi Delco, \$30,000, January 1, 2002 through December 31, 2002, "Cooling Technologies Research Consortium."
- S. V. Garimella**, mechanical engineering, from Modine Manufacturing Co, \$30,000, January 1, 2002 through December 31, 2002, "Cooling Technologies Research Consortium."
- S. V. Garimella**, mechanical engineering, from Nokia Research Center, \$15,000, January 1, 2002 through December 31, 2002, "Cooling Technologies Research Consortium."
- S. V. Garimella**, mechanical engineering, from Rockwell Automation/Allen-Bradley, \$10,000, January 1, 2002 through December 31, 2002, "Cooling Technologies Research Consortium."
- D. Garofalo**, mathematics, from National Science Foundation, \$91,500, June 15, 2002 through May 31, 2005, "Free Boundaries, Pde's, and Geometric Measure Theory."
- B. L. Golden**, biochemistry, from National Aeronautics and Space Administration, \$70,000, September 1, 2001 through November 30, 2004, "Engineering a Ribozyme for Diffraction Properties."
- A. F. Grandt**, aeronautics and astronautics, from Federal Aviation Administration, \$58,247, July 1, 2002 through June 30, 2003, "Analysis of Fatigue Crack Growth from Countersunk Fastener Holes."
- R. H. Grant**, agronomy, from Colorado State University, \$3,000, April 1, 2002 through March 31, 2003, "Climatological Monitoring of Ultraviolet Radiation."
- E. A. Groll**, mechanical engineering, from Air Conditioning and Refrigeration Technology Institute, \$61,839, July 1, 2002 through August 31, 2003, "Critical Literature Review of Lubricant Influence on Refrigerant Heat Transfer and Pressure Drop."
- B. R. Hamaker**, food sciences, from University of Nebraska, \$27,000, July 1, 2001 through June 30, 2002, "Chemical and Physical Aspects of Food and Nutritional Quality of Sorghum and Millet, Prf-212."
- B. R. Hamaker**, food sciences, from University of Nebraska, \$18,375, July 1, 2001 through June 30, 2002, "INTSORMIL West Africa/Eastern Region Program, Prf-209."
- M. P. Harper**, electrical and computer engineering, from National Science Foundation, \$153,816, July 1, 2002 through June 30, 2003, "Mary Harper IPA."
- M. S. Hasson**, biological sciences, from Public Health Service, \$208,736, May 1, 2002 through April 30, 2003, "Structural Study of Enzymic Po3 Transfer-Acetate Kinase."
- S. D. Heister**, aeronautics and astronautics, from Saic Frederick, \$150,000, March 1, 2001 through March 31, 2003, "Alternative Schemes for Controlling Thrust Vector."
- M. A. Hermodson**, biochemistry, from Agricultural Research Service, \$120,750, February 2, 2001 through December 31, 2005, "Biochemistry of Soybean Protein and Oil II."
- M. A. Hermodson**, biochemistry, from The Protein Society, \$50,000, January 1, 2000 through December 31, 2005, "Protein Science."
- T. W. Hertel**, agricultural economics, from U.S. Department of Commerce, \$35,117, April 15, 2002 through October 15, 2002, "Incorporating Albania into the GTAP Data Base."
- C. M. Hoffmann**, **J. R. Bottum**, **D. S. Ebert**, **A. Y. Grama**, **V. S. Popescu**, **J. P. Robinson**, and **A. H. Sameh**, computer science, electrical and computer engineering, basic medical sciences, from National Science Foundation, \$862,011, September 1, 2002 through August 31, 2005, "Acquisition of Equipment for Purdue Envision Center for Data Perceptualization."
- W. J. Hutzel**, mechanical engineering technology, from Federal Mogul, Inc., \$12,334, May 29, 2002 through September 15, 2002, "Improved Indoor Air Quality and Energy Recovery."
- C. W. Ingrao**, history, from United States Institute of Peace, \$35,000, April 1, 2002 through March 31, 2004, "The Tragedy of Yugoslavia; Controversies Revisited."
- M. Ishii**, nuclear engineering, from Nuclear Regulatory Commission, \$48,000, May 15, 2002 through December 31, 2002, "Institute of Thermal-Hydraulics Task Order 6 Modification 15."
- M. Ishii**, nuclear engineering, from Nuclear Regulatory Commission, \$115,000, May 20, 2002 through December 31, 2002, "Institute of Thermal-Hydraulics-Task Order 1 Modification 9."
- M. Ishii**, nuclear engineering, from U.S. Department of Energy, \$90,716, June 4, 2001 through June 3, 2003, "Nuclear-Coupled Thermal-Hydraulic Instabilities and Their Affects on Dryout."

- A. H. King**, materials engineering, from National Institute of Standards and Technology, \$6,262, May 24, 2002 through August 18, 2002, "Nist Summer Undergraduate Research Fellowship Program."
- B. A. Kingsbury**, biology - Fort Wayne Campus, from Nature Conservancy (Indianapolis, IN), \$40,400, April 15, 2002 through July 20, 2003, "Massasanga Ecology in Fens."
- K. Kokini**, mechanical engineering, from National Science Foundation, \$253,849, July 1, 2002 through June 30, 2005, "Thermomechanical Fracture of Compositionally Graded Thermal Barrier Coatings with Time- Dependent Behavior."
- M. R. Ladisch, N. Y. Ho, C. M. Ladisch, N. S. Mosier, and J. J. Wilker**, Laboratory of Renewable Resource Engineering, consumer sciences and retailing, chemistry, from Council of Great Lakes Governors, \$80,000, March 15, 2002 through September 30, 2002, "Setting the Stage: Ethanol Production from Corn Residue in Indiana."
- N. M. Laurendeau, and M. W. Renfro**, mechanical engineering, from National Science Foundation, \$85,001, September 15, 2001 through August 31, 2003, "Characterization of Scalar Correlations in Turbulent Counterflow Nonpremixed Flames."
- L. S. Lee**, agronomy, from Fort Valley State University, \$5,000, June 4, 2002 through July 28, 2002, "Summer Research Program for Minorities."
- L. Lempert**, mathematics, from National Science Foundation, \$99,999, July 1, 2002 through June 30, 2003, "Research in Several Complex Variables and Applications."
- L. B. Leonard**, audiology and speech sciences, from Public Health Service, \$528,827, July 1, 2002 through June 30, 2003, "Grammatical Morphology in Specific Language Impairment."
- L. B. Leonard**, audiology and speech sciences, from Public Health Service, \$552,229, July 1, 2002 through June 30, 2003, "Morphological Deficits in Specific Language Impairment."
- Z. Li**, computer science, from National Science Foundation, \$249,578, July 1, 2002 through June 30, 2005, "Compiler Schemes for Server Assisted Energy Efficient Mobile Computing on Handheld Devices."
- J. M. Longuski, and K. C. Howell**, aeronautics and astronautics, from Jet Propulsion Laboratory, \$20,000, June 1, 2002 through October 31, 2002, "Trajectory Analysis and Design in Support of Planetary and Interplanetary Missions."
- P. S. Low**, chemistry, from Endocyte, Inc., \$17,063, January 1, 2002 through December 31, 2003, "Receptors on Bacterial and Fungal Cell Surfaces."
- L. M. McIntyre**, agronomy, from University of California - Davis, \$35,753, April 1, 2002 through March 31, 2003, "Quantitative Genomics of Sexual Dimorphism."
- R. L. McKenzie, and H. A. Holt**, forestry and natural resources, from City of Rochester, \$5,018, May 1, 2002 through August 31, 2002, "Street Tree Inventory for Rochester Indiana."
- S. A. McLuckey**, chemistry, from Public Health Service, \$219,547, July 1, 2002 through June 30, 2003, "Instrumentation for Analysis of High Mass Biomolecules."
- D. R. McMillin**, chemistry, from National Science Foundation, \$200,000, August 1, 2001 through July 31, 2004, "Photochemistry of Late Transition Metal Complexes."
- E. M. Mikhail**, civil engineering, from Army Research Office, \$50,000, June 1, 2002 through November 30, 2002, "Rapid and Affordable Generation of Terrain and Detailed Urban Feature Data."
- E. M. Mikhail**, civil engineering, from Army Research Office, \$30,000, March 1, 2002 through January 19, 2003, "Rapid, Affordable Generation of Terrain and Detailed Urban Feature."
- J. J. Mistri**, university division - Calumet Campus, from Indiana Commission for Higher Education, \$129,004, July 1, 2002 through June 30, 2003, "Perkins Disadvantaged Program."
- L. G. Mongeau, and C. M. Krousgrill**, mechanical engineering, from Decoma, \$103,918, January 1, 2002 through December 31, 2003, "Sound Transmission Properties of Automotive Sealing Systems."
- L. G. Mongeau, and J. S. Bolton**, mechanical engineering, from Indiana Department of Transportation, \$15,000, January 1, 2002 through December 31, 2002, "Investigation of Novel Acoustic Barrier Concepts Phase I."
- S. L. Nail, and D. O. Kildsig**, industrial and physical pharmacy, from Abbott Laboratories, \$25,000, January 1, 2002 through December 31, 2002, "Industry/University Cooperative Research Center in Pharmaceutical Processing."
- S. L. Nail**, industrial and physical pharmacy, from Guilford Pharmaceuticals, Inc, \$20,000, June 1, 2002 through October 31, 2002, "Freeze-Drying of GPI 15715."
- R. L. Nielsen, J. J. Volenec, and J. J. Vorst**, agronomy, from Pioneer Hi-Bred International, Inc., \$8,000, April 1, 2002 through March 31, 2003, "Does Chilling Injury Contribute to Arrested Ear Development in Maize?."
- S. S. Nielsen**, food sciences, from Michigan State University, \$10,000, April 28, 2002 through August 31, 2002, "Costa Rica/Hosfield Project."
- D. Novikov, and A. Gabrielov**, mathematics, from National Science Foundation, \$40,500, June 15, 2002 through May 31, 2003, "Effective Non-Oscillation of Solutions of Fuchsian Systems of Differential Equations and Abelian Integrals."
- J. P. Ogas**, biochemistry, from Public Health Service, \$39,681, April 1, 2002 through March 31, 2003, "Analysis of Role of CHD Proteins in Arabidopsis Thaliana."
- R. J. O'Neil**, entomology, from University of Minnesota, \$6,460, March 1, 2001 through February 28, 2003, "Assessing and Managing Risks from Soybean Aphid in the North Central US."
- M. J. Ortega**, industrial technology, from Calspan Ub Research Center, \$7,500, October 1, 2001 through December 31, 2002, "Information Fusion Support for Natural and Man-Made Disasters."
- R. L. Parsons**, field extension educators, from Huntington County Farm Bureau, Inc., \$10,000, May 1, 2002 through December 31, 2002, "Enhancing Educational Programs in Huntington County."
- T. L. Powley**, psychological sciences, from Public Health Service, \$46,727, July 1, 2002 through June 30, 2003, "Purdue Integrative Neuroscience Program."
- A. K. Ramdas, and S. Rodriguez**, physics, from National Science Foundation, \$130,000, September 1, 2001 through August 31, 2003, "Raman, Brillouin, Infrared and Modulation Spectroscopy of Collective and Localized Excitations in Tetrahedrally Coordinated Semiconductors and Their Heterostructures."
- C. L. Rasmussen**, mathematics, computer science and statistics - Calumet Campus, from National Science Foundation, \$91,104, August 15, 1999 through July 31, 2003, "CAREER: Differential Equations: Building a Theory of Student Reasoning and Understanding."
- S. S. Rossie**, biochemistry, from Public Health Service, \$327,693, June 1, 2002 through May 31, 2003, "Role and Regulation of Protein Phosphatase 5 in Brain."
- K. Roy**, electrical and computer engineering, from University of California, \$120,000, January 1, 2001 through December 31, 2003, "Design and Test of High-Speed Scaled CMOS Circuits."
- K. Roy, and T. N. Vijaykumar**, electrical and computer engineering, from Wright-Patterson Air Force Base, \$175,577, May 20, 2002 through November 19, 2004, "Leakage Power Management for High Performance Systems."
- R. Salgado**, civil engineering, from Indiana Department of Transportation, \$159,515, July 1, 2002 through June 30, 2005, "Limit States Design of Slopes and Retaining Structures."
- D. E. Salt**, horticulture and landscape architecture, from National Science Foundation, \$28,941, June 1, 2002 through May 31, 2003, "Molecular Mechanism of Nickel Hyperaccumulation in *Thlaspi Goesingense*."
- J. H. Sanders**, agricultural economics, from University of Nebraska, \$25,500, July 1, 2001 through June 30, 2002, "Economic and Sustainability Evaluation of New Technologies in Sorghum and Millet Production in INTSORMIL Priority Countries, Prf-205."
- M. Santagata**, civil engineering, from Indiana Department of Transportation, \$125,000, July 1, 2002 through October 31, 2005, "Mitigating the Effects of Expansive Behavior of Chemically Treated Soils."

**M. E. Schmitt**, curriculum and instruction, from Indiana Department of Education, \$45,000, July 1, 2002 through June 30, 2003, "Early Literacy Intervention Grant Funds: Literacy Collaborative 2002-2003."

**M. E. Schmitt**, curriculum and instruction, from Indiana Department of Education, \$75,000, July 1, 2002 through June 30, 2003, "Early Literacy Intervention Grant Funds: Reading Recovery 2003."

**V. M. Shalaev**, electrical and computer engineering, from New Mexico State University, \$25,000, September 1, 2001 through March 31, 2003, "Nanometer Laser Spectroscopy Using Fractal Template."

**Y. C. Shin**, mechanical engineering, from National Science Foundation, \$107,633, September 1, 2001 through August 31, 2003, "Laser Assisted Machining of Ceramics with Complex Features."

**N. Shroff**, electrical and computer engineering, from National Science Foundation, \$200,000, July 1, 2002 through June 30, 2005, "Collaborative Research: Opportunistic Scheduling for Multimedia Wireless Systems."

**K. C. Sinha**, and **B. G. McCullouch**, civil engineering, from Indiana Department of Transportation, \$10,000, July 1, 1999 through June 30, 2001, "Information Technology Initiative Within the Joint Transportation Research Program."

**K. C. Sinha**, civil engineering, from Indiana Department of Transportation, \$108,000, August 16, 1999 through November 16, 2000, "Initiative for Formulating a Long-Range Research Plan for the Indiana Department of Transportation."

**J. J. Stuart**, entomology, from Agricultural Research Service, \$15,000, March 15, 2002 through March 15, 2005, "Phylogenetics of the Coffee Berry Borer."

**T. M. Sutton**, forestry and natural resources, from Natural Resources Canada, \$3,267, May 1, 2002 through December 31, 2002, "Environmental Impacts of Partial Harvesting in Riparian Reserves in Ontario's Mixedwood Forests."

**R. K. Swihart**, and **R. Russell**, forestry and natural resources, from American Society of Mammalogists, \$1,000, May 1, 2002 through May 1, 2003, "Modeling Animal Movements in Human Dominated Landscapes."

**S. E. Swithers**, psychological sciences, from Public Health Service, \$132,096, August 1, 2002 through July 31, 2003, "Ontogeny of Metabolic Controls of Ingestive Behavior."

**C. C. Tseng**, **M. A. Gealt**, **H. L. Gerber**, and **C. Q. Zhou**, biological sciences - Calumet Campus, school of engineering, mathematics and science - Calumet Campus, engineering - Calumet Campus, from Air Force Office of Scientific Research, \$199,818, July 1, 2002 through December 31, 2002, "Equipment for High Frequency Measurements for Gene Expression Studies."

**L. H. Tsoukalas**, and **S. T. Revankar**, nuclear engineering, from U.S. Department of Energy, \$71,559, July 1, 2002 through June 30, 2003, "Incipient Transient Detection in Reactor Systems: Experimental and Theoretical Investigation."

**R. M. Uzsoy**, and **M. A. Lawley**, industrial engineering, from National Science Foundation, \$193,244, October 1, 2000 through September 30, 2003, "Implementing Global Factory Schedules in Automated Facilities."

**D. C. Van Sickle**, and **S. A. Evander**, basic medical sciences, from Standard Manufacturing, Inc., \$11,933, May 1, 2002 through April 30, 2003, "Evaluation of a Novel Implant Or Repair of Full- Thickness Cartilage in the Goat Stifle-Preliminary Study."

**K. M. Vierow**, nuclear engineering, from Nuclear Regulatory Commission, \$50,000, May 6, 2002 through December 31, 2002, "Task Order Proposal to Nuclear Regulatory Commission for Work to Be Performed Under the Institute of Thermal-Hydraulics at Purdue University."

**M. A. Wartell**, chancellor - Fort Wayne Campus, from U.S. Department of Education, \$650,000, July 1, 2002 through June 30, 2003, "Indiana University-Purdue University, Ft. Wayne, In, to Enhance Educational and Cultural Programming Throughout the Development of the 'Teleplex'."

**C. M. Weaver**, foods and nutrition, from Cargill, Inc., \$18,133, April 2, 2002 through October 2, 2002, "MOA."

**J. J. Wilker**, chemistry, from Petroleum Research Fund, \$35,000, September 1, 2002 through August 31, 2004, "Metal-Linked Nucleic Acids."

**G. L. Willoughby**, agronomy, from Agribusiness Council of Indiana, the, \$15,650, April 30, 2002 through September 30, 2002, "Diagnostic Training."

**G. L. Willoughby**, agronomy, from Helena Chemical, \$5,250, April 30, 2002 through August 30, 2002, "Diagnostic Training."

**W. R. Woodson**, and **E. A. Pajor**, school of agriculture - administration, animal sciences, from Cooperative State Research Service, \$100,000, June 15, 2002 through June 14, 2003, "Swine Well Being Project."

**T. S. Zwier**, and **J. A. Stearns**, chemistry, from National Aeronautics and Space Administration, \$24,000, July 1, 2001 through June 30, 2004, "Spectroscopy and Kinetics of Metastable Diacetylene; Improving Models of Titan's Atmospheric Chemistry."

**T. S. Zwier**, chemistry, from U.S. Department of Energy, \$110,000, June 15, 2002 through June 14, 2004, "The Chemistry and Spectroscopy of Combustion Species: Isomer-Specific Excitation and Detection." ♦

Office of Research Communications  
Engineering Administration, Rm. 328  
West Lafayette, IN 47907

## Fall 2002 New Faculty Research Orientation *September 26*

All new Purdue faculty members and department heads are invited to attend a workshop on Purdue's grants/contracts process on **Thursday, September 26**, hosted by the Office of the Vice President for Research.

*The workshop will include:*

- information on the Sponsored Program Development resources for identifying funding opportunities;
- an overview of the "nuts and bolts" of proposal preparation/submission/negotiation and award management; and
- presentations by two faculty members on how to succeed in finding support for research and other projects.

Although this workshop is designed for faculty and department heads who are new to Purdue University, registrations from other investigators who typically submit proposals for grants and/or contracts and new business managers will be accepted as space permits.

All new faculty should have received registration information for this event. Please contact Mary Ryker at [mlryker@purdue.edu](mailto:mlryker@purdue.edu) or 46200 if you have questions or need further information. ♦

### *Important Notice Regarding the Projects Funded*

Questions concerning the Projects Funded section should be directed to Ann Stetler at 46204 or [anns@purdue.edu](mailto:anns@purdue.edu).

Although the Office of the Vice President for Research publishes the **Research Review** newsletter, we do not generate the monthly Projects Funded list. These lists are provided by Sponsored Program Administration. We print exactly what is provided to us.

If you have questions about a project or if you believe there has been an error in a project listed in this newsletter, contact Ms. Stetler. Once the issue has been resolved and if a correction was made, we will gladly reprint the project to reflect the correction. ♦