

# Research Enterprise

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The Office of the Vice Chancellor for Research (OVCR) publishes the RESEARCH ENTERPRISE to keep the academic community and the community at large informed about research activities, opportunities and development on the IUPUI campus.

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Please be aware that not all news items will be deemed appropriate or timely for publication, but each item will be carefully considered.

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## FEATURED STORY

### Sociology Professor Receives NIH Award for Final Phase of HIV Transmission Study

Since the initial cases of infection in 1981, approximately 1.7 million people have contracted HIV in the U.S., of which 619,000 have lost their lives. An estimated 1.2 million people with HIV were alive in 2008, but one in five of those are unaware they carry the virus. In addition, there are nearly 50,000 newly reported cases each year.

Dr. David C. Bell, professor of sociology in the School of Liberal Arts, is the principal investigator on *Networks of Heterosexual Risk and HIV*, a study which aims to better understand the role of HIV+ persons with HIV+ sexual partners ("HIV gatekeepers" as they are termed in the project) in the prevention and transmission of HIV. The study expands the AIDS Risk Reduction Model, which originally focused on a person's self-protection motivation, to include a partner-protection motivation with the goal of reducing risk and the enactment of risk reduction behaviors.



David C. Bell, Ph.D.  
 Department of Sociology  
 School of Liberal Arts

The National Institute of Health recently awarded a 5-year \$304,960 grant to complete Bell's study, bringing total support for the project to \$1.6 million.

The project has moved from an initial focus over a decade ago on how the social organization of sexual relationships across a community affects transmission risk (funded by the National Institute on Drug Abuse), to a more detailed focus on chains of potential transmission (also funded by NIDA), to a focus on the motivations within a relationship that promote protection or risk (the current study is funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development).

The current phase of the research, which will complete data collection in summer 2012, has focused on studying the sexual behaviors—particularly condom usage—of those infected with HIV and those not infected. The goal is to understand the

balance between self-protection and partner-protection as well as the relationship between motivations that are inherent to the person, specific to the relationship, and modified by the context.

"A particular interest of mine has motivated this research," Dr. Bell says. "This interest is a sociological concern with how society is created from the actions of individuals within relationships. This interest guided the first study in its concern for the structural organization of society. But an even more important part of social organization is its cooperative aspect: What motivates people to work beyond their own narrow self-interest for the benefit of others? I have been moved by the conviction that people are not just motivated by self-interest, so I have been trying to understand how people care about one another and how that caring operates alongside—and often in competition with—their self-interest."

Caring and how people care for one another was the topic of Bell's 2010 book, *The Dynamics of Connection: How Evolution and Biology Create Caregiving and Attachment* (Lexington Books, 2010), which examined the biology of caring and how families and intimate relationships work.

Joining Dr. Bell on the project, which is conducted through the Institute for Research on Social Issues in the IU School of Liberal Arts, are fellow Liberal Arts professors Dr. Carrie Foote (Sociology) and Dr. Sandra Petronio (Communication Studies).

## ANNOUNCEMENTS

### **Earth Sciences Professor Honored by the Geological Society of America**

The Geological Society of America (GSA) has honored Dr. Gary Rosenberg, an associate professor of earth sciences in the School of Science, with the Mary C. Rabbitt History of Geology Award.

The Rabbitt award is the highest award of its kind and recognizes "outstanding contributions to the understanding of the history of the geological sciences in the United States and abroad."

Mary Rabbit was very accomplished in the history of geology and a strong supporter of the History and Geology Division of the GSA.

Dr. Rosenberg, also a GSA fellow, will be honored at the GSA Annual Meeting and Exposition in November in Charlotte, N.C.

His research specializations include historical geology, evolution and biomineralization.



Gary Rosenberg, Ph.D.  
Department of Earth Sciences  
School of Science

## FACULTY SPOTLIGHT

### **STeleR study: Telerehab Improves Functioning after Stroke**

Researchers led by Regenstrief Institute investigator Neale Chumbler, Ph.D., a research scientist with the Center of Excellence on Implementing Evidence-Based Practice at the Roudebush VA Medical Center

in Indianapolis, have developed STeleR, a home telerehabilitation program that they report improves lower body physical functioning even two years after a stroke. Participating in STeleR also increased the likelihood of maintaining a regular fitness routine, enhanced money management skills, and improved the capability to prepare meals and take care of personal needs such as bathing.

"Effects of Telerehabilitation on Physical Function and Disability for Stroke Patients" appears online ahead of print publication in the August issue of the journal *Stroke*.



Neale Chumbler, Ph.D.  
Department of Sociology  
School of Liberal Arts

"We know that post-stroke rehab is critically important," said Dr. Chumbler, a medical sociologist who chairs the Department of Sociology and directs the Institute for Research on Social Issues in the School of Liberal Arts. "But for many veterans and others who experience a stroke, participating in supervised rehab can be difficult because they live far from a rehab facility. Even if distance isn't an impediment, getting someone to provide transportation may not be easy. Providing rehab in the home is costly, and the availability of qualified physical or occupational therapists may be limited, particularly in rural areas.

"We found that stroke survivors will participate in and can benefit from a telehealth system that enables therapists to deliver and monitor rehab in the patient's home from a remote location."

The 52 veterans in the multi-site study received care from VA medical centers in Atlanta, Georgia; Durham, North Carolina; and Tampa, Florida; were predominantly male, ethnically diverse, and had an average age of 67. Each had experienced an ischemic or hemorrhagic stroke within the previous two years and lived in the community rather than in an institution. The study participants were randomized to usual care or the STeleR (short for stroke telerehab) intervention.

Three hour-long visits were made to the homes of those in the intervention arm of the study, during which a study team member used a camcorder to record physical and functional performance as well as discuss the home environment with the stroke survivor. An in-home messaging device that looks like a clock radio and plugs into a telephone line was installed and monitored weekly by a teletherapist who responded after reviewing information entered by the study patients. Over the three-month period, telephone calls between the teletherapist and the patient took place biweekly. Both STeleR and usual care group participants received routine VA care as directed by their health care providers.

Most of the gains in physical functioning and other improvements occurred during the initial three months of the study but were maintained during the subsequent three months during which no STeleR services were provided.

"STeleR has potential to be a useful supplement to traditional post-stroke rehabilitation, given the limited resources available for in-home rehabilitation for stroke survivors," Dr. Chumbler said. "STeleR or a similar telehealth program could be an important way to overcome access barriers and may be particularly useful for reaching vulnerable patient groups, such as individuals from a lower socioeconomic status and those who live in a rural area."

In addition to Dr. Chumbler, co-authors of the study are Patricia Quigley, Ph.D., MPH; Xinli Li, Ph.D.; Miriam Morey, Ph.D.; Dorian Rose, Ph.D., PT; Jon Sanford, M.Arch; Patricia Griffiths, Ph.D. and Helen Hoenig, M.D., MPH.

This research was supported by the Department of Veterans Affairs Rehabilitation Research and Development Service (Grant B4492R). Dr. Chumblor is leading a follow-up study that implements STeleR as a component of routine post-stroke care at the Roudebush VA Medical Center.

## STUDENT SPOTLIGHT

### IUPUI Program Pairs Business Students with Engineering Students to Research Patent Options

A new program takes advantage of IUPUI's academic diversity by partnering undergraduates from various disciplines with a mentor to help bring a faculty member's patent to market.

Kelley School of Business Indianapolis students Jim Plew and Rishi Chandra learned the business implications of a dialysis invention through the Center for Research and Learning's *Innovation-to-Enterprise Central* program. The two partnered with three biomedical engineering students in the Purdue School of Engineering and Technology to research how to commercialize a dialysis invention by IU vascular surgeon George Akingba, M.D., Ph.D.



Chandra Rishi and Jim Plew

"Dr. Akingba patented the device, but there's still a lot of research that needs to be done," Chandra said. "So that's what we worked on. We compared the device to its competitors and went through all the government regulations and possible future funding."

Dr. Akingba's patented modular arterio-venous shunt device helps open and close a tube that connects blood flow during dialysis. His invention could improve the tube's durability. Based on their research, the students will offer Dr. Akingba advice on whether to start a company based on his device or to license it to someone else.

"We were brought into this to provide some kind of value from the business end," Plew said. "It put pressure on us, but we could show what we've learned in the business school and how we can infuse that into this setting."

The Innovation-to-Enterprise Central program gives faculty like Dr. Akingba a chance to move their inventions forward and offers the students a practical lesson using another field of study.

"There's only so much engineers and physicians can do," Dr. Akingba said. "You always need the business people to help you keep your direction and your focus, so that at one point in time you can decide if your startup is a money pit or a pot of gold."

The Office of the Vice Chancellor for Research sponsors the Innovation-to-Enterprise Central program through a collaboration between the Center for Research and Learning and the IUPUI Solution Center, and in partnership with IUPUI academic and research units. This program is available to full-time undergraduate students in good academic standing with an interest in research commercialization. For more information, please visit [www.crl.iupui.edu/programs/itec](http://www.crl.iupui.edu/programs/itec).

## TRANSLATIONAL RESEARCH IMPACT

## Viehweg Named Interim Director of IUPUI Center for Translating Research into Practice

Stephan Viehweg has been named interim director of the IUPUI Center for Translating Research Into Practice (TRIP). As interim director, he will lead the effort to identify and celebrate translational research on the IUPUI campus. His appointment is effective July 1, 2012.

Translational research solves problems people face in their everyday lives by using meaningful, evidenced-based information to address complex social, health, governmental, cultural and relational issues.

"The very fabric of research conducted on this campus speaks to the way discoveries, once known from research, can be put into practice," said Sandra Petronio, Ph.D., TRIP initiative founder

and director, professor in the Department of Communication Studies at IUPUI, IU School of Medicine, and a Senior Affiliate Faculty Member in the Charles Warren Fairbanks Center for Medical Ethics. "These evidence-based practices change our lives, the way we think about ideas, the way we make choices about our healthcare, along with other human needs, and the way we come to understand many aspects about our everyday lives."

While interim director, Viehweg will maintain his position as associate director of the Riley Child Development Center at the School of Medicine, and will continue to lecture at the School of Social Work and oversee the Catie B. Project for Family Centered Care.

"Steve Viehweg comes to this role of interim director having been integral to TRIP initiative successes for more than four years," said Executive Vice Chancellor Uday Sukhatme. "We are pleased that Steve has agreed to assume this important role, bringing his talents and commitment to the growth and development of IUPUI."

Viehweg has contributed greatly to the IUPUI campus both academically and as an alumnus. Additionally, he is active in a variety of community organizations, including his roles as founding chair of the Indiana Association for Infant and Toddler Mental Health and founding president of Family Voices Indiana.



Stephan Viehweg

## CURRENT EXTERNAL FUNDING OPPORTUNITIES

Funding opportunities in this section include selected current grant announcements from federal agencies for new initiatives and changes to existing programs. Announcements with limited scope are not listed here but are, instead, sent directly to IUPUI School Deans. For comprehensive coverage of funding opportunities please use the on-line search tools listed below.

### DEPARTMENT OF ENERGY

**Advanced Computational and Modeling Research for the Electric Power System:** The focus is on leveraging scientific advancements in mathematics and computation for application to power system models and software tools, with the long-term goal of enabling real-time protection and control based on wide-area sensor measurements. Specifically, this FOA focuses on two foundational research challenges: 1) handling of large data sets to improve suitability for operational (and/or planning) models and analysis; and 2) "faster than real-time" simulations

that improve understanding of system dynamics to help guide operational decision-making. *Application deadline is July 5, 2012.*

## NATIONAL ENDOWMENT OF THE HUMANITIES

**Enduring Questions:** The Enduring Questions grant program supports faculty members in the teaching and development of a new course that will foster intellectual community through the study of an enduring question. This question-driven course will encourage undergraduates and teachers to grapple with a fundamental concern of human life addressed by the humanities, and to join together in a deep and sustained program of reading in order to encounter influential thinkers over the centuries up to the present day. What is an enduring question? The following list is neither prescriptive nor exhaustive, but serves to illustrate the crux. What is good government? Can war be just? What is friendship? What is evil? Are there universals in human nature? What are the origins of the universe? *Application deadline is September 13, 2012.*

## NATIONAL INSTITUTES OF HEALTH

**Macroeconomic Aspects of Population Aging (R01):** This focus is on the macroeconomics of aging - the impact of population aging on the macroeconomy and in turn how macroeconomic factors impact health and well-being. *Application deadline is October 13, 2012.*

**Role of Environmental Chemical Exposures in the Development of Obesity, Type 2 Diabetes and Metabolic Syndrome (R01):** The focus is on understanding the role of environmental chemical exposures in the development of obesity, type 2 diabetes and/or metabolic syndrome. Applications must link an environmental exposure to the increased incidence of weight gain, glucose tolerance/insulin sensitivity and aspects of metabolic syndrome in animal models or human studies. *Standard dates apply.*

**Identifying Health Outcomes Associated with Changes in Use of Illicit Drugs (R01):** The focus is on testing the hypothesis that reductions in illicit drug use are associated with improved health outcomes in patients. This FOA will support both prospective and retrospective studies, which may include, but not limited to, identification and characterization of beneficial health outcomes that are associated with reduced levels of drug use. Such studies may focus on identification and or validation of strategies, methods, and tools (including biomarkers) that can assess the salutary consequences resulting from reduced use of a particular illicit drug. *Application deadline is August 22, 2012.*

**Alcohol Abuse, Sleep Disorders and Circadian Rhythms (R01, R21):** This Funding Opportunity Announcement (FOA), issued by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), encourages Research Project Grant (R01) applications proposing to conduct mechanistic studies in humans and animal models on the relationships between alcohol abuse, circadian rhythms and sleep disorders. *Standard dates apply.*

## NATIONAL SCIENCE FOUNDATION

**Faculty Early Career Development (CAREER) Program:** The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations. Such activities should build a firm foundation for a lifetime of leadership in integrating education and research. *Application deadline is July 23, 2012.*

**Advancing Informal STEM Learning:** The Advancing Informal STEM Learning program invests in research and development of innovative and field advancing out of school STEM learning and emerging STEM learning environments. *Preliminary proposal due August 14, 2012.*

## IDENTIFYING FUNDING OPPORTUNITIES

On-line search tools are available to IUPUI investigators who are interested in identifying funding opportunities in their areas of interest.

**Community of Science (COS):** COS is a primary on-line search tool for identifying funding opportunities. To take advantage of this tool, register at <http://www.cos.com/login/join.shtml>. Once you have completed the short registration process, you can personalize your search by selecting the option entitled "launch your workbench". You can access federal, local, corporate, foundation, nonprofit and other funding opportunities using key terms and save the results of up to 20 searches and have them delivered to you weekly via email.

**National Institutes of Health (NIH) "NIH Guide":** To take advantage of this search tool, register at <http://grants.nih.gov/grants/guide/listserv.htm>. It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**National Science Foundation (NSF) "MyNSF":** To take advantage of this search tool, register at [http://service.govdelivery.com/service/multi\\_subscribe.html?code=USNSF&custom\\_id=823](http://service.govdelivery.com/service/multi_subscribe.html?code=USNSF&custom_id=823). It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**Federal Business Opportunities "FedBizOpps":** FedBizOpps is the single government point-of-entry for Federal government procurement opportunities over \$25,000. To take advantage of this search tool, visit <https://www.fbo.gov>. Opportunities found at this site include, but are not limited to, presolicitations and special notices for research and service contracts for specific projects and some national centers and surveys that would not be found in Grants.gov and may not be found in the Community of Science.

### Limited Submission Funding Opportunities:

Many federal agencies and foundations offer grants, awards and fellowships that limit the number of applications that can come from one institution or require special handling. In order to comply with agency and foundation guidelines and increase the chances of Indiana University (IU) succeeding in such limited submissions and special handling opportunities, IU policies and procedures are in place and are utilized by the Office of the Vice Chancellor for Research and other IU research offices to facilitate internal coordination and competitions.

Individuals interested in responding to limited submission opportunities must inform the Office of the Vice Chancellor for Research about their intent to apply to a given limited submission opportunity, such that they can be included in the internal review and selection process. Failure to do so may disqualify individuals from consideration for submission to the funding opportunity.

Individuals interested in a limited submission opportunity or have any questions about the internal coordination process, contact Etta Ward at [emward@iupui.edu](mailto:emward@iupui.edu) or 317-278-8427. For a description of upcoming limited submission funding opportunities, as well as guidelines and application forms, go to: [http://research.iu.edu/limited\\_sub.shtml](http://research.iu.edu/limited_sub.shtml). Please note that this is not a comprehensive list, and that any external funding opportunity that imposes any type of submission limitation is subject to the IU limited submission policy and procedures.

Special Handling: The Special Handling list was created in order to communicate donor restrictions and/or preferences for managing solicitation requests from Indiana University. The list reflects special relationships that exist between donors and the university and includes corporations and foundations that the President's office wishes to review prior to submission in order to coordinate Indiana University's requests to these donors. The Special Handling List was compiled and is maintained by the Indiana University Foundation office of Corporate and Foundation Relations. Questions regarding this list can be directed to Bobbi Bosch at 317-278-5648 or [bsbosch@indiana.edu](mailto:bsbosch@indiana.edu).

[IUF Special Handling List and Principal Gifts Review Template](#)

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