



February 2013

7 IU researchers earn grants from American Cancer Society

Seven Indiana University researchers are recipients of an American Cancer Society Institutional Research Grant.

The American Cancer Society awards these three-year grants to institutions for promising junior investigators' projects. The grant program's purpose is to attract new investigators into cancer research and support new pilot studies that will produce preliminary data the investigator can develop into studies that will compete successfully for external, national funds from both federal and private sources.

The American Cancer Society awarded a total of \$450,000 to IU.

"We appreciate the American Cancer Society's grant," said Mark R. Kelley, Ph.D., associate director for basic science research at the Indiana University Melvin and Bren Simon Cancer Center. "Funds from this grant greatly benefit our young investigators as they begin their careers in cancer research."

Gary McMullen, vice president of executive communications for the American Cancer Society Great Lakes Division, added: "We are pleased to be able to support the outstanding research efforts at IU. The university has received this type of support from us for several decades because of its high level of young research talent, scientific creativity and solid administrative leadership."

The following recipients are faculty members at the IU School of Medicine and researchers at the IU Simon Cancer Center:

- **Janaiah Kota**, Ph.D., assistant professor of medical and molecular genetics. Dr. Kota's research grant is for "AAV-miR-26a and Doxorubicin Combinatorial Therapy for Hepatocellular Carcinoma."
- **Xing Jun Li**, M.D., Ph.D., assistant research professor of pediatrics. Dr. Li's research grant is for "Hyperactive Innate Immunity in the Pathogenesis of JMML."
- **Tao Lu**, Ph.D., assistant professor of pharmacology and toxicology and of biochemistry and molecular biology. Dr. Lu's research grant is for "Target Discovery: Using VBIM Technology to Identify Carboplatin Resistance Genes in Ovarian Cancer Cells."
- **Catherine Mosher**, Ph.D., assistant professor of psychology. Dr. Mosher's research grant is for "Telephone Symptom Management for Advanced Lung Cancer Patients and Caregivers."
- **Catherine Sears**, M.D., assistant research professor of medicine. Dr. Sears' research grant is for "The Role of XPC in the Development of Smoking-Related Lung Cancer."

The following recipients are faculty members at the IU School of Medicine:

- **Jing-Yuan Liu**, Ph.D., assistant research professor of computer and information science and of pharmacology and toxicology. Dr. Liu's research grant is for "A Novel Approach Targeting Undruggable Oncogenic Protein Dimers for Drug Discovery."
- **Grzegorz Nalepa**, M.D., Ph.D., assistant professor of pediatrics. Dr. Nalepa's research grant is for "The CDKN3 Signaling Network in Cancer: A Novel Therapeutic Target?"



February 2013

Core spotlight

Flow Cytometry Resource Facility

The Amnis Image Stream, which functions much like a flow cytometer, recently was installed in the IU Simon Cancer Center [Flow Cytometry Resource Facility](#).

Susan Rice, BA, MT (ASCP), the core's manager, explained the advantages of the equipment: "Now we can see images of the cells much like we are looking under a microscope. Cell shape, cell membrane and nuclear morphology as well as location of the proteins labeled with fluorochromes now become possible. In analysis, overlays of the colors collected give impressions of the dynamic interactions of these proteins. The Image Stream can collect this data at about one thousand cells per second."

In addition, cells can be visualized and identified as cells and not debris or doublets with this instrument.

According to Rice, the most popular applications for imaging cytometry are cell signaling, co-localization of proteins, internalization of proteins, DNA damage and repair, cell cycle and mitosis, and stem cell differentiation among others.

The instrument has three lasers (488, 405, and 640nm) and can detect nine different colors. Researchers are advised to start with small experiments as each will contain Gigabytes of data as compared to Megabytes with flow cytometry. Archiving will require either an external hard drive or use of the Scholarly Data Archive as set up by IT.

The core's staff will maintain, calibrate, and troubleshoot the Image Stream. Attending an orientation seminar and signing up for an account at www.Amnis.com will provide necessary assistance in preparing and analyzing experiments. Flow lab staff will provide assistance in general aspects of acquisition and analysis.

Overall, the core provides essential and varied flow cytometric services to IU Simon Cancer Center members. The core's staff provides consultation, technical advice, and collaboration, which promotes cutting-edge science and serves as a central common area for IU Simon Cancer Center investigators to interact and exchange scientific information.

Specifically, the core offers:

- Multiparameter (1-10 color) immunofluorescence analysis and cell sorting
- DNA content and cell cycle analysis
- Simultaneous immunofluorescence and cell cycle analysis
- Single cell sorting
- Cell sorting (bulk or single cells) based on position of cells in cell cycle
- Apoptosis analysis (Annexin V/PI, Caspase, TUNEL and other assays)
- BrdU incorporation
- Viability assays
- Chromosome analysis (univariate and bivariate)
- Receptor-ligand interactions
- Kinetic analyses
- Off-line data analysis

The Flow Cytometry Research Facility is located in Walther Hall, Room C360. Rice can be reached at 274-7587. **Edward Srouf**, PhD, is the core's director.



The Amnis Image Stream, which was recently installed in the IU Simon Cancer Center Flow Cytometry Resource Facility, has three lasers and can detect nine different colors.



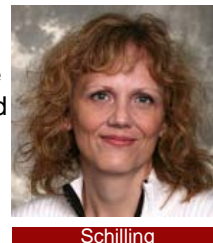
February 2013

News briefs

IU researchers, others develop Web tool for caregivers

Researchers from the IU Simon Cancer Center as well as the IU schools of nursing, informatics, and library and information science have launched a new online tool to provide information and resources to people who provide care for a chronically ill, disabled or aged family member or friend.

The Web tool, [Help for Cancer Caregivers](#), walks users through a brief survey and then provides personalized information to help monitor, track and manage the personal health challenges they face as a result of their caregiver role. For example, if individuals respond that they feel overloaded by their caregiver responsibilities, the Web tool responds with information describing the symptoms and causes of overload, as well as information on how to cope and talk about overload with others.



Schilling

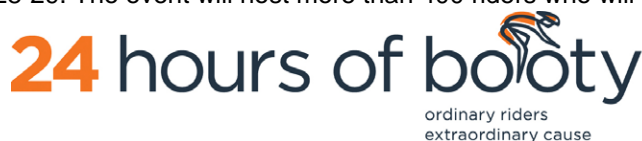
Help for Cancer Caregivers was made possible through a \$242,000 grant from the WellPoint Foundation to CancerCare®, a national nonprofit that helps more than 100,000 individuals and families cope with cancer each year.

The information on Help for Cancer Caregivers was developed through a collaboration between experts at the Caregiver Action Network, Michigan State University, WellPoint Inc., and IU.

Cancer center members involved were **Katherine Schilling**, MLS, EdD, and **Anna McDaniel**, PhD. The Web tool stems from a project Dr. McDaniel led in which a Web-based information source for IU Simon Cancer Center patients and families was developed to serve as a platform for translation of evidence-based cancer control behavioral interventions and information dissemination.

24 Hours of Booty returns

24 Hours of Booty is back for a second year in Indianapolis. The Booty Loop will be held at Butler University June 28-29. The event will host more than 400 riders who will raise more than \$200,000 for cancer research and survivorship. The IU Simon Cancer Center has been chosen as the local beneficiary for this event. For more information or to register, check out www.24hoursofbooty.org or contact Theresa Vernon at tm5@iu.edu. You can register as an individual, form your own team, or join the cancer center's team, Pedaling Cures. All cycling levels welcome.



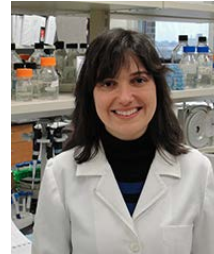
Brazilian student gaining cancer research experience

Brazilian Giana Montagner is gaining experiences in cancer research as an intern at the IU Simon Cancer Center this semester, while also experiencing Hoosier hospitality.

Montagner, a non-degree student at IUPUI, is working on a breast cancer research project in Dr. Hari Nakshatri's lab in which she is investigating estrogen receptors and AKT signaling. "AKT signaling pathway can be associated with cancer, and I am studying the crosstalk between estrogen receptor and AKT signaling in breast cancer," she explained.

Montagner is participating in a new Brazilian program called Scientists Without Borders. She said the program's focus is to expand educational opportunities for Brazilians, mainly in the fields of science, technology, engineering and mathematics. The program provides scholarships to participants.

In Brazil, Montagner is a college senior studying biomedicine. She pointed out, "Biomedicine is different from medicine. I am a medical student, but I will be a medical biologist, not a physician."



Montagner

After completing her internship at the cancer center, she hopes to apply for the master's program in biochemistry back home and eventually apply for another scholarship to earn a doctorate in the United States.

Currently, she's enjoying the States and Hoosiers. "I am really impressed by the hospitality and kindness of Americans. I really did not expect that," she said. "The adaptation to another culture is difficult, but every time, I have had people helping me without having to ask. Professors, my host family, university staff, classmates, roommates, friends and everybody wanted to make me feel comfortable."

Wanted: Assistant for Summer Research Program

An assistant is needed for the IU Simon Cancer Center's Summer Research Program. The assistant acts as a liaison with high school and undergraduate students, program faculty mentors, IUPUI Center for Research and Learning and the Summer Research Program Committee. Flexible hours from March to May; full-time hours from June to July. If you know of excellent candidates, please refer them to the [full description](#).

Reminders

- **IUSCC's Cancer Center Support Grant due in fall 2013**

In September 2013, the IU Simon Cancer Center's National Cancer Institute Cancer Center Support Grant (CCSG) will be due. Consequently, the cancer center's executive committee and research program leaders are currently undertaking a critical review of the program and its membership, as well as finalizing program themes, goals and aims. All members are encouraged to assist their program leaders as they begin working on their respective narratives. The program leaders will need assistance from their members on compiling research highlights for those narratives. Program leaders are also planning retreats and participation among members is important. The CCSG is an important source of funding for the cancer center's shared facilities. This support, along with IU Simon Cancer Center funding, assures that cancer center members have access to the highest quality technology for their research.

NCI·CC

A Cancer Center Designated by the National Cancer Institute

- **Membership changes**

Membership criteria into the IU Simon Cancer Center has changed to include full-time faculty of any Indiana university who contribute on some level to the cancer center's mission of research, education, patient care and community outreach. Full membership criteria is [here](#).

- **Researchers: Share your news**

Is your research about to be published in a journal? Are you about to present your research at a professional meeting? Have you received national funding for your research? Share your news with [Michael Schug](#), IUSCC communications manager.

- **Funding opportunities**

For the latest funding opportunities, visit <http://www.cancer.iu.edu/research/funding/>.

Cancer center members in the news

- **Victoria Champion**, PhD, RN, FAAN, is one of 19 nurse researchers to be inducted into the Honor Society of Nursing, Sigma Theta Tau International's (STTI) International Nurse Researcher Hall of Fame during the 24th International Nursing Research Congress in Prague, Czech Republic, in July. Created in 2010, the hall of fame recognizes nurse researchers who have achieved significant and sustained national or international recognition and whose research has improved the profession and the people it serves.
- **Mervin Yoder**, MD, is one of five IU professors to be promoted to distinguished professor. The rank of distinguished professor is the most prestigious academic appointment Indiana University can bestow upon its faculty. The distinguished professorship typically recognizes faculty who have pioneered or substantially transformed their field, garnering international recognition for their work. Dr. Yoder's research has yielded new insight into the way stem cells are generated, fundamentally changing the way researchers think within the field. A secondary research area led to the discovery of a hierarchy of another type of rare cell, which affected the way researchers think about cell analysis for cardiovascular and other diseases. Dr. Yoder has published hundreds of refereed publications, review articles and book chapters, and has mentored postdoctoral fellows, graduate students and undergraduate research students. He owns one patent and founded biotechnology firm EndGenitor Technologies Inc. The new distinguished professors will be recognized formally at an event in April.



Yoder

New members

[Sandeep Batra, MD](#)

Department of Pediatrics

Associate member, [Hematopoiesis, Malignant Hematology, Immunology](#)

[Gregory Cote, MD, MS](#)

Department of Medicine

Associate member, [Tumor Microenvironment and Metastases Research Program](#)

[Crislyn D'Souza-Schorey, PhD](#)

Department of Biological Sciences

University of Notre Dame

Full member, [Breast Cancer](#)

[Xing Jun Li, MD, PhD](#)

Department of Pediatrics

Associate member, [Hematopoiesis, Malignant Hematology, Immunology](#)

[Jie Sun, PhD](#)

Department of Pediatrics

Full member, [Hematopoiesis, Malignant Hematology, Immunology](#)