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IU cancer researchers play role in FDA approval of drug for treating people after radiation exposure

July 14, 2015

INDIANAPOLIS – An [Indiana University Melvin and Bren Simon Cancer Center](#) researcher played a role in the recent Food and Drug Administration approval of a drug to treat people exposed to potentially lethal doses of radiation.

[Christie M. Orschell](#), Ph.D., a senior research professor at the [Indiana University School of Medicine](#) and a researcher at the cancer center, and colleagues performed preclinical work that contributed to the approval of Neupogen (filgrastim) to treat adult and pediatric patients exposed to myelosuppressive doses of radiation. Such exposure may happen in a radiation nuclear event.

Radiation destroys the bone marrow, resulting in loss of blood cells and increasing the risk of infection and uncontrolled bleeding, according to Dr. Orschell. Neupogen can help patients by facilitating recovery of bone marrow cells that develop into neutrophils, white blood cells that help fight off infections.

"The approval of Neupogen is an important step in advancing medical countermeasures for radiation," Dr. Orschell said. "Still, we're continually investigating new drugs that are easier to administer and perhaps only require a single injection."

Neupogen is the first radiation countermeasure approved under the FDA's Animal Rule, which was drafted to guide the development of drugs when human efficacy studies cannot ethically be performed. In March 2015, the FDA approved Neupogen for use following an acute exposure to a radiation dose capable of causing severe loss of bone marrow cells.

Dr. Orschell and her lab of nine researchers developed a mouse model to test medical countermeasures against radiation as part of a consortium of investigators working together to find drugs to treat irradiated people. Data from the Orschell lab contributed to the understanding of how Neupogen may work in humans.

Dr. Orschell explained that a mouse model is used to mimic a disease in humans. "Our mouse model of acute radiation syndrome has become one of the standard models to test medical countermeasures under the Animal Rule," Dr. Orschell said.

In 2005, the National Institute of Allergy and Infectious Diseases awarded a federal contract to the University of Maryland School of Medicine, which established the consortium of institutions to facilitate the development of medical countermeasures that could be used in an emergency mass casualty situation involving radiation injuries. IU was an integral part of that consortium.

Dr. Orschell's ongoing work recently earned her \$750,000 in funding from the Department of Defense to study drugs for civilians or first responders who report to a site following radiation exposure. "In the case of first responders, you would have an opportunity to administer the drug to them before they are exposed at the site," she said.

PRINT SHARE



Christie M. Orschell, Ph.D.

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Dr. Christie Orschell, seated, and her laboratory team

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Center for Pancreatic Cancer Research earns Signature Center status

By Diane Brown

Accomplishments in the first three years of their collaboration to fight pancreatic cancer have earned the scientists at the Center for Pancreatic Cancer Research designation as an IUPUI Signature Center.

Researchers predict that the disease, which takes 40,000 lives in the United States each year, will be the second-leading cause of cancer deaths in the nation within 15 years.

In a multi-approach, multi-university effort headquartered at the Indiana University Melvin and Bren Simon Cancer Center on the Indiana University-Purdue University Indianapolis campus, about 50 research scientists have geared up to fight the deadly malignancy.

The Signature Center designation from the IUPUI Office of the Vice Chancellor for Research also recognizes the center's potential to sustain efforts the researchers hope will lead to increased survival rates and better quality of life among pancreatic cancer patients.

"This is a well-deserved recognition of a center that is making significant impact on the understanding and treatment of pancreatic cancer, and I am delighted that it is attracting national and international recognition for its work," said Kody Varahramyan, IUPUI vice chancellor for research.

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— KODY VARAHRAMYAN, IUPUI VICE CHANCELLOR
FOR RESEARCH.

The **Pancreatic Cancer Signature Center** is composed of multiple interdisciplinary

partnerships among the team of basic, translational and clinical researchers working at sites on the IU Bloomington, Purdue University, Notre Dame University and IUPUI campuses.

The center's researchers are engaged across the continuum of disease research from the biological/molecular investigation of pancreatic tumor development in the laboratory stage, to pre-clinical trials with mouse models, to clinical trials pursuing improved therapies for pancreatic cancer patients

"Our center combines the strengths of senior investigators working on basic cancer mechanisms and potential therapeutic interventions, with the strengths of mid-level and junior faculty using novel technologies and collaborating with the senior investigators to further our overall understanding of pancreatic cancer genesis, progression, tumor microenvironment and metastasis, and coordinating these advances to devise novel diagnostic biomarkers and novel combinatorial therapeutic approaches," said Murray Korc, M.D., director of the Pancreatic Cancer Signature Center, a researcher at the IU Simon Cancer Center and the Myles Brand Professor of Cancer Research at IU School of Medicine.

Under the IUPUI Signature Centers Initiative Grant Program sponsored by the Office of the Vice Chancellor for Research, the cancer research center received \$300,000 in seed money in 2011, which has paid for the infrastructure to support the multi-site collaborations and the mentoring program that pairs younger researchers with veteran scientists.

"The origination award has allowed us to forge collaborations," Dr. Korc said. "This Signature Center designation will encourage those collaborations to continue to flourish. We are working simultaneously on securing more grants to make us more sustainable in the long run."

Researchers at the Center for Pancreatic Cancer Research leveraged the seed money from the origination award into an additional \$9.2 million in research grants during the past three years, according to Dr. Korc.

"Receiving the official Signature Center designation underscores our potential to continue team science in a sustainable and high-impact manner and helps us honor the memory of former IU President Myles Brand and philanthropist Mel Simon, both of whom succumbed to pancreatic cancer on Sept. 16, 2009," Dr. Korc said.

Dr. Korc also thanked Patrick Loehrer, M.D., the director of the IU Simon Cancer Center, and Mark Kelley, Ph.D., associate director of the Pancreatic Cancer Signature Center, for coordinating the groundwork that led to the successful creation of the Center for Pancreatic Cancer Research.



Dr. Murray Korc heads the Center for Pancreatic Cancer Research



INDIANA UNIVERSITY

IU SIMON CANCER CENTER

Indiana University Melvin and Bren Simon Cancer Center



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July 2015

News briefs

IUSCC participates in Indiana Black Expo's health fair

During this month's INShape Indiana Black & Minority Health Fair at the Indiana Black Expo, the cancer center's [Office of Health Disparities and Community Engagement](#) provided clinical trials education information. Hands-on demonstrations were provided to interested health fair attendees to locate active trials from the IU Simon Cancer Center, the NCI, and the NIH. Cancer clinical trials education information also was distributed during the health fair. Also, **Lisa Carter-Harris**, PhD, conducted a survey of men and women ages 55 and older who either currently smoke cigarettes or had quit within the past 15 years. This survey assessed the thoughts and opinions about lung health and lung screening. Finally, Cervical Cancer Free-Indiana, in conjunction with **Monica Kasting**, PhD, conducted a survey of women between the ages of 18 and 35. The survey assessed women's awareness of the connection between HPV vaccination and cervical cancer screening as well as knowledge of current cervical cancer screening guidelines. Kasting's team was able to survey more than 300 African American women.

Cachexia center receives development funding

The Center for Cachexia Research Innovation and Therapy, led by **Teresa Zimmers**, PhD, has been awarded development funding from the IUPUI Signature Centers Initiative Program. The center's focus will support development of interdisciplinary, multi-investigator collaborations through meetings, a research retreat, and the development of a regional consortium with Ohio State University. The center will invest in a thematic research program on cardiopulmonary effects in tobacco-associated cancer cachexias. The IUPUI Signature Centers Initiative fosters the development of centers that are unique to IUPUI and that can lead the way in world-class research and creative activities, and make a difference in the lives of people. The initiative provides each selected center with initial funding for a period of one to three years. The centers are re-evaluated at the end of three years and if approved, receive a five-year designation as an IUPUI Signature Center.



Zimmers

Meet the Hester Fellowship recipients

Recipients of the IU Simon Cancer Center's Marilyn Hester Fellowship for the 2015-16 academic year are Derek Logsdon and Stefan Tarnawsky, both IU School of Medicine students. [full story](#)>



Despite heavy rains and strong winds, the cancer center's 24 Hours of Booty cycling team, Pedaling Cures, was the runner-up in total funds raised during the June 26-27 event. The team raised \$17,175. Overall, more than \$127,000 was raised for both the IU Simon Cancer Center and the Livestrong Foundation during the third annual 24 Hours of Booty Indianapolis event. Thank you, booty riders!

Cancer center members in the news

Hal Broxmeyer, PhD, **Mircea Ivan**, MD, PhD, **Louis Pelus**, PhD, **Reuben Kapur**, PhD, **Edward Srouf**, PhD, and colleagues wrote "Enhancing Hematopoietic Stem Cell Transplantation Efficacy by Mitigating Oxygen Shock," which was published in [Cell](#)."

Indra Das, PhD, has earned the Dr. Ramaiah Naidu Memorial Oration Award from the Association of Medical Physicists of India for his "valuable contributions in the field of medical physics." It is the highest award in India presented to those in the medical physics field.

Sunil Badve, MD, has been named the Joshua Edwards Professor of Pathology and Laboratory Medicine. Dr. Badve also retains his title as professor of medicine at IU School of Medicine. The Edwards Chair was established in 2011 by the Indiana Pathology Endowment Inc. to honor the memory and recognize the contributions of Joshua L. Edwards, MD, former chair of the IUSM Department of Pathology.

Liang Cheng, MD, has been named the Virgil Moon Professor of Pathology. Dr. Cheng will retain his title of professor of pathology and laboratory medicine and professor of urology at IU School of Medicine. This chair was established in 2011 by the Indiana Pathology Endowment Inc. to honor the memory of Virgil H. Moon, MD, and his contributions to his profession and to Indiana University. Dr. Moon joined the IUSM faculty in 1914, was appointed acting head of the pathology department that same year, and served as chair until 1927. The earliest autopsy on record in the IUSM Department of Pathology was performed by Dr. Moon on a 22-year-old man who died in Long Hospital in 1914 of acute infectious endocarditis and whose physician was Dr. Charles P. Emerson, later became dean of IUSM.



Cheng

Douglas Rex, MD, has been appointed a councilor with the American Society of

Gastrointestinal Endoscopy.

4 researchers earn ACS Institutional Research grants

Four Indiana University researchers are recipients of a 2015 American Cancer Society Institutional Research Grant. Funds from the grant are designed to provide seed money to support junior faculty members with an interest in cancer research who do not have national grant support of their own or have not received prior support from the IRG. For many investigators, support from the ACS-IRG pilot projects represents their first, independent research grant. Awards are made for a one-year project period and the maximum amount awarded is \$40,000 (\$30,000 from ACS and \$10,000 in matching funds from the IU Simon Cancer).

The recipients and their projects are: (cancer center members appear in bold)

- Raghuvveer Mali, "Cooperation Between Genetic and Epigenetic Mutations in Acute Myeloid Leukemia (AML)"
- Zhiyong Tan, "Role of Neuronal KCNQ Channels in Pain Associated with Chemotherapy-induced Peripheral Neuropathy"
- **Rebecca Silbermann**, "Targeting p62 to Reverse Osteoblast Suppression in Myeloma"
- **Safi Shahda**, "Cardiopulmonary and Functional Assessment for Patients with Pancreatic Cancer Cachexia"

Last year, four researchers were awarded a total of \$160,000 (ACS, \$120,000; IUSCC, \$40,000). [Learn more about the grant.](#)

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