



August 2010

From the director

Nearly six months have passed since I became the director of the IU Simon Cancer Center. I have been incredibly honored and humbled to lead our amazing team of physicians and researchers.

I would like to take this opportunity to highlight just a few recent accomplishments among those very researchers.

As you'll read in this month's *IUSCC Research News*, **Bryan Schneider**, MD, received a \$50,000 grant from the Inflammatory Breast Cancer Research Foundation and the Milburn Foundation. Schneider, one of our young investigators, and Milan Radovich, a doctoral student, will study the underlying molecular underpinning of inflammatory breast cancer thanks, in part, to this grant.



Loehrer

Also, a team of both Purdue and IU researchers -- including cancer center members **Liang Cheng**, MD, **Timothy Masterson**, MD, and **Michael Koch**, MD -- published in *Analytical Chemistry* their findings of a potential marker for prostate cancer. The marker may mean the beginning of less invasive testing.

Take a moment to read how the Behavioral and Cancer Control Recruitment Core can help you and make a note of upcoming deadlines for funding opportunities. You'll find both in the "[News briefs](#)" section.

Finally, I encourage you to let us know of story ideas or other suggestions you have for the *IUSCC Research News*. We want this e-letter to serve you -- our members -- well by keeping you up-to-date on news related to the cancer center. Please send your ideas/suggestions to Michael Schug, the editor, at maschug@iupui.edu.

Enjoy the remaining few weeks of summer!

Sincerely,

Patrick Loehrer, MD

Director, IU Simon Cancer Center



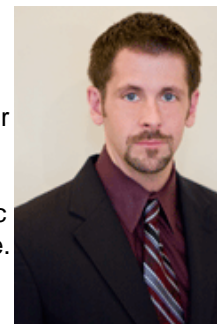
August 2010

IU Simon Cancer Center physician receives funding for rare, aggressive breast cancer research

Women with a relatively rare but aggressive form of breast cancer may benefit from a unique tissue bank of normal breast tissue at the IU Simon Cancer Center.

Bryan Schneider, MD, and doctoral student Milan Radovich will study the underlying molecular underpinning of

inflammatory breast cancer using cutting edge technology called Next Generation Sequencing with the support of a \$50,000 grant from the Inflammatory Breast Cancer Research Foundation and the Milburn Foundation partnership. This work will capitalize on the ability to compare genetic abnormalities against normal breast tissue.



Schneider

"To identify the critical molecular changes that distinguish normal from malignant, and to detect the earliest indication of the transformation, researchers must be able to study normal breast cells," Dr. Schneider, the recipient of the IBC grant, said.

"Since 2005, hundreds of women have donated tissue to the [Susan G. Komen for the Cure Tissue Bank at the IU Simon Cancer Center](#) to make it possible for researchers to identify abnormalities in cells. We are hopeful that the information contained in the bank will direct scientists to cures for the many forms of breast cancer," Dr. Schneider said.

Dr. Schneider and colleagues hope to identify novel drug targets for inflammatory breast cancer, which typically affects the skin. Unlike other forms of breast cancer, inflammatory breast cancer frequently does not develop masses or tumors within the breast which makes detection by mammograms or ultrasound technology difficult. Frequently inflammatory breast cancer is misdiagnosed as mastitis, a benign breast infection.

Even though this form of breast cancer only accounts for 1 percent to 5 percent of breast cancer cases in the United States, it contributes to a high percentage of breast cancer mortality. Few targeted therapies have been developed, which contributes to the relatively low survival rate of 40 percent to 45 percent.

The study of inflammatory breast cancer and its aggressive, metastatic nature are essential to improve diagnosis, treatment and survival, according to Dr. Schneider.

"It is our goal to provide new and advancing information about inflammatory breast cancer," Dr. Schneider said. "In the past we have had to react. We hope this research will inform us on ways to take proactive measures and provide insight on fundamental weaknesses in the disease that may be exploited for successful therapeutics."

The grant will allow Dr. Schneider and his New York University colleague Robert Schneider, PhD, to collect and compare normal breast tissue from the Komen Tissue Bank with other forms of aggressive breast cancer and inflammatory breast cancer.



August 2010

Purdue-IU team uncovers potential prostate cancer marker

Studies by a Purdue University-led team have revealed a potential marker for prostate cancer that could be the starting point for less invasive testing and improved diagnosis of the disease.

The team -- which included IU Simon Cancer Center members **Liang Cheng, MD**, **Timothy Masterson, MD**, and **Michael Koch, MD** -- used a new analysis technique to create a profile of the lipids, or fats, found in prostate tissue and discovered a molecular compound that appears to be useful in identifying cancerous and precancerous tissue. The profile revealed that cholesterol sulfate is a compound that is absent in healthy prostate tissue, but is a major fat found in prostate cancer tumors.

Graham Cooks, Purdue's Henry Bohn Hass Distinguished Professor of Chemistry, and Timothy Ratliff, the Robert Wallace Miller Director of the Purdue Center for Cancer Research, led the team.

"It was surprising to find a single compound that is distinctly present in cancerous tissue and not present in healthy tissue," Cooks, who is co-director of Purdue's Center for Analytical Instrumentation Development, said. "We've been able to differentiate cancerous from healthy tissue using this new method in the past, but the difference was in the amounts of the same chemical compounds found in healthy tissue. There was no single differentiator of which one could say if it was present there was cancerous tissue."

Ratliff said this characteristic makes the compound a potential marker for the disease, which could lead to new blood or urine tests to screen for prostate cancer.

"Aside from skin cancer, prostate cancer is the most common cancer in men and is the second leading cause of cancer-related deaths," Ratliff said. "Unfortunately, the current screening test has a significant number of false positives because it uses a marker that is present with other non-cancerous conditions. As a result, many men have unnecessary biopsies, which are invasive, expensive, and have the potential to cause infection. This new compound appears to be highly specific to prostate cancer cells, which would mean very few false positives."

The current prostate cancer test screens for a protein called prostate-specific antigen, or PSA, that is produced by the cells of the prostate. Elevated levels of PSA in the blood can signify prostate cancer, but non-cancerous conditions such as an enlarged or inflamed prostate also cause an increase in its levels.

The findings of the study, which was funded by the Purdue University Center for Cancer Research and the National Institutes of Health, were published in the journal *Analytical Chemistry*.

The study was performed in collaboration with physician scientists from Indiana University School of Medicine, who co-authored the paper. They also provided the tissue samples and pathological analysis of the samples to check the new technique's results.

The team used a mass spectrometry analysis technique developed by Cooks and co-workers called desorption electrospray ionization, or DESI, to measure and compare the chemical characteristics of 68 samples of normal and cancerous prostate tissue.

Mass spectrometry works by first turning molecules into ions, or electrically charged versions of themselves, so that they can be identified by their mass. Conventional mass spectrometry requires chemical separations, manipulations of samples and containment in a vacuum chamber for ionization and analysis. The DESI technique eliminates these requirements by performing the ionization step in the air or directly on surfaces outside of the mass spectrometers, making the process much simpler, faster and more applicable to medical examination or surgical settings.

Cooks' research team also has developed software that turns the distribution and intensity of selected ions within a sample into a computer-generated image, much like what would be seen from a stained slide under a microscope. This chemical map of the sample can precisely show the location of cancerous tissue and the borders of tumors, Cooks said.

The team is already in the process of performing larger studies and plans to investigate the biological processes responsible for the expression of cholesterol sulfate in cancerous tissue.



August 2010

Core spotlight

Behavioral and Cancer Control Recruitment Core

The Behavioral and Cancer Control Recruitment Core, a developing core of the IU Simon Cancer Center, coordinates and supports accrual of all approved behavioral oncology protocols.

It does so by coordinating accrual across studies and clinics, training, assigning, and overseeing recruiters and helping researchers in the conceptualization of their recruiting protocols. The core also provides help with gaining IRB approval and acting as a liaison between study personnel and clinic staff.

Kim Wagler Ziner, RN,

PhD, the core's director, coordinates all core activities and, depending on the situation, she may act as a recruiter. She interacts with physicians, clinic staff, and study personnel. She visits physicians and nurses, telling them and educating them about various studies, the eligibility requirements, and how prospective patients may fit into those studies.



Ziner

About Dr. Ziner

Kim Wagler Ziner, RN, PhD, is an assistant scientist in the Center for Research and Scholarship at the IU School of Nursing. Dr. Ziner's research experience includes both clinical and behavioral research with a research and scholarship focus on fear of breast cancer recurrence in long-term breast cancer survivors

Dr. Ziner, a former clinical nurse specialist and nurse coordinator at IU's Breast Care and Research Center, screens and trains all recruiters, many of whom have been involved in the breast cancer program.

The Behavioral and Cancer Control Recruitment Core started with recruitment for breast cancer studies. Currently, it has expanded to offer recruitment services for medical oncology and surgical oncology. Dr. Ziner's goal is for the core to eventually work with

and recruitment to behavioral research. She is also a breast cancer survivor who participates in breast cancer advocacy work at local, regional, and national levels.

Contact info

Call 274-4342 or e-mail kwagler@iupui.edu.

assessment.

all of the oncology clinical programs.

The core also provides supervised recruitment through regional social networks, such as Y-ME National Breast Cancer Organization and Sisters Network Indianapolis. In addition, it provides recruiter training, communication with clinical care groups, recruitment material preparation, and ongoing recruitment strategy



August 2010

News briefs

IUSCC request for IUSCC pilot projects: Focus on basic science

The IU Simon Cancer Center is inviting proposals for basic science cancer research pilot projects. Funding is scheduled to begin Nov. 1. [Full details.](#)

CTSI accepting applications for Core Pilot funding

The CTSI Core Pilot funding opportunity is open for applications through Oct. 18. The guidelines and application are available on the Indiana CTSI hub at <https://www.indianactsi.org/grants>. Log in using your university username and password. The proposals are to come from investigators interested in up to \$10,000 in services from one of the CTSI designated cores. Eligible cores are listed at <http://www.indianactsi.org/research/cores> and have the CTSI seal next to the core name. It is acceptable for the investigator and core to be from either the same or different campuses/schools. For additional information, contact Lilith Reeves (lreeves@iupui.edu).

AACR opens award nominations

The American Association for Cancer Research is currently accepting nominations for awards recognizing excellence in cancer research, to be presented at the 102nd AACR Annual Meeting, held in Orlando, Fla., from April 2 to 6, 2011.

Nominations are open for the following awards:

- 2011 AACR-American Cancer Society Award for Research Excellence in Cancer Epidemiology and Prevention
- 2011 AACR Princess Takamatsu Memorial Lectureship
- 2011 Margaret Foti Award for Leadership and Extraordinary Achievements in Cancer Research
- 2011 Lifetime Achievement Award in Cancer Research
- 2011 AACR Team Science Award

For more information on eligibility criteria, the nomination process and other details about these awards, visit www.aacr.org/page21927.aspx. Additional inquiries should be directed to Monique P. Eversley at monique.eversley@aacr.org.

The American Association for Cancer Research also is currently accepting nominations for the prestigious Pezcoller Foundation-AACR International Award for Cancer Research. The award includes an unrestricted grant of €75,000 and a commemorative plaque. For more information on eligibility criteria, the nomination process and other details about the Pezcoller Foundation-AACR International Award for Cancer Research, please visit www.aacr.org/page14329.aspx. Additional inquiries should be directed to Monique P. Eversley at monique.eversley@aacr.org.

Other grants available to researchers

For the latest grant opportunities, visit the [Funding Opportunities](#) page on the IUSCC Web site.

***AccrualNet*: A new NCI online resource to support successful clinical trial patient accrual**

The National Cancer Institute has launched a new online resource, *AccrualNet*, in response to needs expressed by clinical trials professionals and investigators. Despite dedicated clinical trial recruitment efforts, successful accrual remains a challenge -- only 3 percent to 5 percent -- of potentially eligible cancer patients enroll in clinical trials.



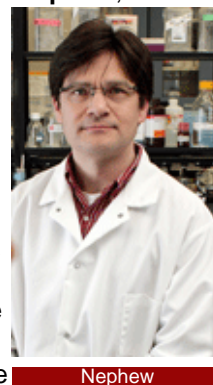
AccrualNet is designed for practicing professionals to support clinical trial accrual needs. The Web site is a repository for literature and other resources and serves as a "community of practice" to encourage dialog and discussion. *AccrualNet* includes:

- Linkable access to existing tools and materials your colleagues are currently using
- A searchable, annotated list of published journal articles on clinical trial recruitment
- A space to ask questions, post tips, share experiences, insight, materials and strategies
- Training opportunities available to orient and educate new staff to successful recruitment strategies

Visit [AccrualNet](#) to learn more about this new online tool.

Cancer center members in the news

- *Epigenetics* published "[Multivalent Epigenetic Marks Confer Microenvironment-responsive Epigenetic Plasticity to Ovarian Cancer Cells](#)," by **Ken Nephew**, PhD, and colleagues **Curt Balch**, PhD, **Robert Bigsby**, PhD, and others.
- Although individual studies have not yet convincingly shown a survival advantage with maintenance chemotherapy in ovarian cancer (OC), a meta-analysis demonstrates that continued chemotherapy after completion of primary therapy for OC improves progression-free and overall survival, according to **Lisa Hess**, PhD, **Patrick Monahan**, PhD, **Daniela Matei**, MD, and colleagues. Benefits are greatest in patients with advanced stage OC who reach complete clinical or pathologic response after primary therapy. The research appears online in the July 27 issue of [Cancer](#).
- "Nutlin's Two Roads Toward Apoptosis," by **Hua Lu**, MD, PhD, appears in the Sept. 15 issue of [Cancer Biology & Therapy](#).
- **George Sledge**, MD, and **Kathy Miller**, MD, will serve as hosts of the Metastatic Breast Cancer Network's 2010 annual conference held Oct. 16 at IUPUI.
- **Kathy Miller**, MD, recently was named one of four Breast Cancer Research Foundation grant recipients through Ann Taylor Stores Corp. The company presented more than \$1 million to the foundation to assist in its efforts to fight breast cancer.
- The following cancer center members served as faculty mentors during this summer's IU Simon Cancer Center's Summer Research Program: **Angelo Cardoso**, MD, PhD; **Jake Chen**, PhD; **Joseph Dynlacht**, PhD; **Betsy Fife**, PhD, MSN; **Noah Hahn**, MD; **Lindsey Mayo**, PhD; **Anna McDaniel**, DNS, RN, FAAN; **Marc Mendonca**, PhD; **Christie Orschell**, PhD; **George Sandusky**, DVM, PhD; **Edward Srour**, PhD; **Attaya**



Nephew



Miller

Suvannasankha, MD; John Turchi, PhD; Clark Wells, PhD; and Qi-Huang Zheng, PhD. Mentors facilitate and guide the students toward completing a research project, encourage students to explore the field of biomedical science, and provide students access to professional networks. Learn more about the [Summer Research Program](#).

- **Christopher Touloukian, MD**, is a recipient of a three-year, \$600,000 [V Foundation Translational Research Grant](#). He was named a grant recipient for his research entitled "The Use of Gene-modified Lymphoid Progenitor Cells for Treatment of Patients with Metastatic Melanoma." Since 1994, The V Foundation has funded nearly 400 grants to the brightest physicians and scientists as they pioneer techniques to make breakthroughs in cancer research.
- A paper by **Sunil Badve, MBBS, MD, FRCPATH**, and colleagues describing the development of a new methodology to improve identification of breast cancer tissue by pathology laboratories has been selected as the best scientific paper in the "bioinformatics and biomedical applications track" by the International Association for Pattern Recognition. The best scientific paper award was presented at the 20th International Conference on Pattern Recognition in Istanbul, Turkey. A total of 2,140 papers from around the world competed in six tracks for best paper designation.



Touloukian



Chie-Schin Shih, MD, (left) accepts a check from Hyundai Hope on Wheels during a presentation and handprint ceremony, which was with Riley cancer patients on Aug. 20. Shih was named a 2010 Hyundai Scholar. The symbol of the Hope on Wheels Tour is a white Hyundai Santa Fe covered with colorful handprints representing childhood cancer patients from all over the country. Every time a new Hyundai vehicle is sold in the United States, \$5 is donated to Hope on Wheels which donates those funds to children's hospitals across the country during the Hope on Wheels Tour. [See other photo](#).

New grants

Christopher Ballas
"Ultra-high-throughput Cellular

Raymond Konger
"Hotspot Imaging for Risk

Manipulation via Massively Parallel
Microinjection"
University of California

Jamie Case

"The Role of Human Circulation Progenitor
Cells (CPSc) in Tumor Progression"
Showalter Trust

Victoria Champion

"Increasing Colorectal and Breast Cancer
Screening in Women"
NIH-NCI

Rebecca Chan

"PI3K Signaling in Juvenile Myelomonocytic
Leukemia"
NIH-NHLBI

Susan Clare

"Virtual Bio Ban Web Application Project"
Komen Cancer Foundation

Alexander Dent

"Control of Regulatory T Cell Activity by
BCL6"
American Heart Midwest

Betsy Fife

"A Brief Family Intervention to Promote
Adaptation to the Stress of Parental BMT"
NIH-NINR

Melissa Fishel

"Investigation of a Novel Target in
Pancreatic Cancer: Redox Signaling
Protein APE1 / Ref-1 and Its Effects on
Proliferation and Metastatic Potential"
Showalter Trust

David Flockhart

"Mechanisms of Aromatase Inhibitor-
induced Musculoskeletal Symptoms"
U.S. Army

Lisa Hess

"Decision Making Among Treatment
Alternatives for Abnormal Uterine Bleeding
(AUB)"
Showalter Trust

Cynthia Hingtgen

"Neurofibromin's Regulation of the
AC/cAMP Cascade is Involved in Sensory
Neuronal Sensitization"
Tumor Foundation

Stratification of Non-melanoma Skin
Cancer in a Pilot Study of
Experimental Photocarcinogenesis"
Purdue University

Raymond Konger

"Tumor Suppression through Oxidized
Glycerophosphocholines"
NIH-NIEHS

Oussama Meroueh

"Targeting ALDH2 for Adjuvant
Treatment of Alcohol Dependence"
NIH-NIAAA

Karen Pollok

"Dual Targeting of DNA Repair and
p53 Pathways for Treatment of Brain
Cancer"
NIH-NCI

Max Schmidt

"Early Detection - Specimen
Collection - Indiana University"
Lustgarten Foundation

Ronald Wek

"Translation and Stress Regulatory
Pathways in Health and Disease"
Showalter Trust

Jian-Ting Zhang

"Therapeutic Targeting of Stratifin
Structure and Function"
NIH-NCI

Zhong-Yin Zhang

"Target Mycobacterium Protein
Tyrosine Phosphatase B for Anti-
Tuberculosis Agents"
NIH-NIAID

Zhong-Yin Zhang

"Small Molecule Inhibitors for the
Oncogenic Protein Tyrosine
Phosphatase SHP2"
NIH-NIAID