



INDIANA UNIVERSITY

IU SIMON CANCER CENTER
Indiana University Melvin and Bren Simon Cancer Center



IUSCC news

April 2017

IU researchers awarded \$2.9 million to study chemotherapy-induced peripheral neuropathy

Indiana University cancer researchers have been awarded \$2.9 million to study the debilitating side effects caused by chemotherapy that affect a significant number of cancer patients.

Mark R. Kelley, PhD, received the grant (1R01CA205166) from the National Cancer Institute to study chemotherapy-induced peripheral neuropathy (CIPN).

Although cancer treatments are becoming more effective and people are consequently surviving cancer in increasing rates, many patients report neuropathy – a nerve problem that causes pain, numbness, tingling, swelling, or muscle weakness. As many as 30 percent to 60 percent of cancer patients say they experience neuropathy.

Neuropathy can become severe enough for some patients that their treatment needs to be reduced or stopped. The effects can also linger well beyond the course of the treatment.

Currently, there are no effective treatments or prevention against neuropathy because researchers don't yet understand all of the mechanisms that lead to it. It is believed that neuropathy develops over time as a cumulative effect of chemotherapy that alters functions in neurons – or nerve cells.

However, in previous work, Dr. Kelley, associate director of basic science research at the IU Simon Cancer Center, and colleagues discovered a clue that may eventually help eliminate or alleviate the effects of neuropathy. They demonstrated both in the lab and in mice that increasing the repair activity of the APE1 protein decreases neurotoxicity.

"We hypothesize that APE1 is a critical protein for protecting neurons from cancer therapies and that augmenting its DNA repair activity will prevent and reverse chemotherapy-induced alterations in sensory neuronal function," Dr. Kelley explained.

The uniqueness of the studies lies in the several distinctive and innovative features combining cellular, biochemical, molecular and physiological approaches and animal models, according to Dr. Kelley. He pointed out that the proposed studies investigate the mechanisms of APE1



Dr. Kelley

function in the neurons following chemotherapy treatment, particularly cisplatin and oxaliplatin. The team will use sophisticated animal models and multiple physiological and behavioral endpoints to dissect out the effects of chemotherapy producing CIPN.

Part of the research includes studying a molecular compound known as APX3330 to see if it will offer cancer patients protection against neuropathy. Thus far, Dr. Kelley's work has shown that APX3330 has been effective in reducing APE1's ability to facilitate

the growth and spread of tumors in mouse models and block CIPN.

APX3330 is a new drug that was developed based on Dr. Kelley's nearly three decades of cancer research and is being developed by Apexian Pharmaceuticals, a company in which Dr. Kelley is the chief scientific founder and officer.

"APX3330 has the potential to be a win-win drug; it blocks tumor cell growth while protecting neurons and reducing or preventing CIPN," Dr. Kelley said. "This could translate into better tumor killing as well as an improved quality of life, both during the cancer treatment period as well as post-treatment."

Dr. Kelley's collaborators are fellow IU Simon Cancer Center researchers from two of the cancer center's research programs: [Jill Fehrenbacher](#), PhD, of [cancer prevention and control](#); and [Millie Georgiadis](#), PhD, and [John Turchi](#), PhD, of [experimental and developmental therapeutics](#). Across disciplines, Dr. Kelley worked with [Theodore Cummins](#), PhD, of the [School of Science](#) at Indiana University-Purdue University Indianapolis (IUPUI).

The National Cancer Institute awarded Dr. Kelley these funds as part of its provocative questions initiative, a program aimed at promoting cancer-related research on important yet understudied areas or research questions that have proven difficult to address.

Before Dr. Kelley submitted his application to the NCI, he received pilot project funding from the IU Simon Cancer Center for its high potential to obtain external funding.

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5th annual Chuckstrong Tailgate Gala raises more than \$1 million for research at IU Simon Cancer Center

April 24, 2017

INDIANAPOLIS – For the second consecutive year, more than \$1 million was raised for cancer research at the Indiana University Melvin and Bren Simon Cancer Center during the fifth annual Chuckstrong Tailgate Gala on April 21.

Hosted by the [Indianapolis Colts](#) and head coach Chuck Pagano at the Indiana Farm Bureau Football Center and presented by Indianapolis-based mechanical and electrical contractor DEEM, the tailgate gala netted \$1.1 million through corporate sponsorships and live and silent auctions as well as \$100,000 that was given by the Jim Irsay family and \$100,000 from the coach and his wife, Tina.

"Blessed to be back for another one, another journey," Coach Pagano, who was diagnosed with acute promyelocytic leukemia nearly five years ago, said. "This is such a great event. It's just a group of people who are

committed to coming together for a cause to find a cure. We might think we're a long ways away. I don't think we are. These doctors and researchers who are here and these people who are here supporting don't believe that. We have the opportunity to come together again as a family, as a community, and raise awareness to finding a cure."

The amount also included \$15,000 that was raised when guests paid \$1,000 for the opportunity to catch a kick from Adam Vinatieri, or "Automatic Adam," while others contributed \$1,000 to toss a memorable pass to wide receiver T.Y. Hilton.

An additional \$17,500 was generated by an Andrew Luck live auction package that promised the quarterback and avid reader would visit a child's school to read a favorite book.

Luck, Vinatieri, and Hilton were among nearly all of the Colts players, Colts coaching staff, and the Colts cheerleaders who joined more than 500 guests at the event.

Funds from the tailgate gala are used to support cancer research projects at the IU Simon Cancer Center that translate laboratory discoveries into improved treatment options for patients. Research leads to advancements to find better ways to prevent, detect, and treat cancer.

Since 2012, the Chuckstrong initiative has raised nearly \$5 million for cancer research at IU.

Top-level "touchdown" sponsors for the event were Anthem Blue Cross and Blue Shield, Bob and Lisa Colver and BJ and Lori Nichols, DairyChem, the Efroymsen Family Fund, Huntington Bank, Lilly Oncology, Sol and Kay Raso, the Throgmartin family, Indiana Knitwear, IU Simon Cancer Center, Markey's Rental & Staging, and the Morales Group.

The IU Simon Cancer Center is one of only 69 National Cancer Institute-designated cancer centers in the nation. NCI-designated cancer centers are recognized for meeting rigorous criteria for world-class, state-of-the-art programs in multidisciplinary cancer research. NCI-designated cancer

centers put significant resources into developing research programs, faculty, and facilities that will lead to better approaches to prevention, diagnosis, and treatment of cancer.

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Nine-year-old Kale Galloway, a cancer patient receiving a drug IU researchers created specifically for his tumor, gets his Andrew Luck jersey signed by the Indianapolis Colts quarterback at the fifth annual Chuckstrong Tailgate Gala on April 21. | PHOTO BY BANAYOTE PHOTO

[Print Quality Photo](#)

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News briefs

Komen Tissue Bank contributes to advances against breast cancer

There's only one in the world. And it's been making a difference in the fight against breast cancer for the past 10 years. The Indianapolis Star takes a look at the [Susan G. Komen Tissue Bank at the IU Simon Cancer Center](#) and its contributions over the past decade. [Read story.](#) (The story has been carried by other newspapers across the country.)

AMPATH oncology hosts international conference

To address research gaps around cervical and other AIDS-related cancers, the AMPATH Oncology Program hosted an international research conference in Eldoret March 22-24. More than 100 individuals from seven countries attended and shared their cutting-edge research on cervical cancer, including the impact of HIV and quality of life for patients with cervical cancer.

Cancer center members in the news



[Mark Kelley](#), PhD, (seen with IUPUI Chancellor Nasser Paydar, left) was the recipient of the 2017 Bantz-Petronio Translating Research Into Practice (TRIP) Faculty Award. Established by former IUPUI Chancellor Charles Bantz and Dr. Sandra Petronio, the award recognizes outstanding faculty research that is interdisciplinary and/or cross-disciplinary, and intentionally directed toward positively impacting people's lives within or beyond the State of Indiana. In addition to generating knowledge through scientific inquiry or humanistic scholarship, the award recognizes faculty who actively endeavor to transform that knowledge into practices or solutions,

demonstrating innovative ways to improve the lives of individuals and the communities in which they live.

The Breast Cancer Research Foundation announced that [Paul Macklin](#), PhD, an associate professor of intelligent systems engineering, will be involved in a new partnership that links computational scientists with biologists. [full story](#)>

[Patrick Loehrer](#), MD, participated in the cancer center directors' panel at the recent [National Association of Cancer Center Development Officers/Public Affairs and Marketing Network](#) (NACCDO/PAMN) annual conference, hosted by the University of Kentucky Markey Cancer Center. The other panelists represented Roswell Park, UAB Comprehensive Cancer Center, University of Kansas Cancer Center, and the University of Kentucky.

[Mahua Dey](#), MD, discussed her Bridging the Gap study, which is researching whether facial recognition can be used as a surrogate for patients filling out a 50-question quality of life survey, with [WTHR-TV](#).

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