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MARKEY *quarterly*

SEASONAL NEWS FOR
MARKEY CANCER CENTER
FACULTY AND STAFF

MARKEY AND THE MOONSHOT

WHAT A \$1 BILLION INITIATIVE MEANS TO KENTUCKY'S ONLY NCI-DESIGNATED CANCER CENTER

In his 2016 State of the Union Address, President Obama introduced the National Cancer Moonshot to eliminate cancer as we know it. Led by Vice President Biden, this \$1 billion initiative will bring together multiple federal agencies, from the National Institutes of Health (NIH) and Food and Drug Administration to the Department of Veterans Affairs and Department of Energy, to provide the funding necessary for researchers to accelerate the development of new cancer detection and treatments. The research acceleration of this initiative aims to bring about a decade's worth of advances in five years, making more therapies available to more patients, while also improving the ability to prevent cancer and detect it at an early stage. In addition to increased funding from federal agencies, this effort will break down barriers to progress by enhancing data access, and facilitating collaborations with researchers, doctors, philanthropies, patients, patient advocates, and biotechnology and pharmaceutical companies.

The initiative began with \$195 million in new cancer activities at the NIH in fiscal year 2016. The fiscal year 2017 budget will propose \$755 million in mandatory funds for new cancer-related research activities at both NIH and the Food and Drug Administration.

"I am very encouraged by the possibility of bringing in more funding to enhance the current collaborative research efforts at the Markey Cancer Center," says David Gosky, MA, MBA, Associate Director for Administration. "In addition, it is exciting to make these new advances and further accelerate our efforts to make more treatment options available to our patients.

Within the Department of Health and Human Services, these investments will provide a number of opportunities in prevention and cancer vaccine development, early cancer detection, cancer immunotherapy and combination therapy, genomic analysis of tumor and surrounding cells, enhanced data sharing and pediatric cancer."

Discussed at a national level with a billion dollar investment, the Moonshot is a high-reaching initiative. Fortunately, institutions like Markey are experiencing exciting times with new discoveries that can contribute to and benefit from such ambitions. "Increased funding opens the possibilities for cutting-edge transdisciplinary research collaborations to elucidate the linkage between obesity and cancer, overcome health disparities in Kentucky, and support ongoing precision medicine projects that provide individualized cancer care to every cancer patient," says Vivek Rangnekar, PhD, Associate Director for Transdisciplinary Collaboration, Markey Cancer Center. "Such projects aim at radical solutions through transdisciplinary teamwork, internally at Markey and the College of Medicine, as well as with other nationally known cancer centers and biomedical institutions."

MARKEY BY THE NUMBERS

Initiative dollars to jumpstart National Cancer Moonshot...	1,000,000,000
Number of Markey Cancer Center Affiliate Network sites	16

FROM THE DIRECTOR

B. MARK EVERS, MD, DIRECTOR, MARKEY CANCER CENTER

Initiatives like the \$1 billion National Cancer Moonshot are important because they showcase the importance of research and emphasize the need for collaboration. The prevention, treatment and cure for cancer will not be discovered by a single researcher or a single clinical trial. It will not come as the result of funding by a single agency or a single donor. It will require the dedicated, on-going efforts of everyone who researches, prevents, treats has been impacted by the disease, all working together for a common goal.



Here at Markey, we are committed to a single goal. It is our mission, to reduce cancer mortality in our state and region through a comprehensive program of cancer research, treatment, education, and community engagement with a particular focus on the underserved population of Appalachian Kentucky. Our research programs span the entire spectrum of cancer epidemiology and etiology, molecular expression and regulation, cancer prevention, early detection and treatment.

Every day, our researchers are making advances in the understanding of the disease. Whether it is publishing study results that show the possibility of creating a three-dimensional model system to investigate how breast cancer cells invade lung tissue; being awarded a grant to investigate how communication networks influence Appalachians' lung cancer screening behaviors; or serving as the lead in a national network seeking to eliminate tobacco-related health disparities in underserved or high-risk populations, the Markey community is at the front of cancer research.

As you hear more about initiatives like the Moonshot, I invite you to learn about the work we are doing at Markey. As Kentucky's only NCI-designated cancer center, we intend to make the most of every opportunity before us in our fight against cancer.

MARKEY CANCER FOUNDATION CONNECTS INDIVIDUAL PASSION TO GREATER CAUSE

For Michael Delzotti, CFRE, CSPG, president and chief executive officer of the Markey Cancer Foundation, initiatives like the National Cancer Moonshot can lead to more informed conversations about research with donors. "The Moonshot puts research in the public dialogue," he says. "And because it's aspirational, we aren't limited to incremental changes. We can talk about a cure."

Through talking, Delzotti is able to uncover an individual's passion and connect that to a cause greater than themselves. "That is what fundraising is about," he says. "People write their moral narrative with philanthropy," he says. "How can you make the world a better place?"

At Markey, it begins with vision. Personalized medicine and cancer prevention are priorities for B. Mark Evers, MD, director of the UK Markey Cancer Center. "The Markey Cancer Foundation supports the cancer center by connecting donors to that vision," says Delzotti.

"As an NCI-designated cancer center, Markey is among the top five percent of cancer centers in the United States. Achieving Comprehensive Cancer Center status would put Markey in the top two percent," says Delzotti. "When considering a center for Comprehensive status, one thing the NCI looks for is a robust fundraising program. Fortunately for the Foundation, Kentuckians have a world-class center right here that changes lives everyday."

Grateful patients and their loved ones may ask healthcare providers how to give back. "Philanthropy is an act of control," says Delzotti. By simply asking if the patient's name can be referred to the Markey Cancer Foundation, healthcare providers are able to recognize the individual's role as more than a patient. Those referrals then allow the foundation to begin cultivating donors to support the center's vision.

"Research can be confusing to people," says Delzotti. Exposure to the value of research, whether it is through news of the Moonshot or knowing someone who participated in a clinical trial, breaks down the barriers that come with confusion and contribute to advances in the prevention, treatment and cure for cancer.

MEET A MARKEY MOVER

CHERI TOLLE, MAED, CHES, ADMINISTRATIVE DIRECTOR, UK MARKEY CANCER CENTER AFFILIATE NETWORK.

This quarter, Markey Quarterly introduces you to Cheri Tolle, Administrative Director, UK Markey Cancer Center Affiliate Network.

Good morning, Cheri. Thank you for talking with us today. To begin, please tell us where you are from and how you ended up at Markey.

My childhood was spent in Rockville, Maryland, but I moved to Kentucky as a teenager when my dad was transferred with IBM. My background is in health education. In 1988, I answered a newspaper ad for an Information Specialist and Outreach Coordinator position with Markey's Cancer Information Service, a National Cancer Institute-funded contract. That first position established a career path for me, and I've been with Markey ever since. Every position I've held at Markey was a brand new position I helped to create. I've been able to build upon each role and then move on to the next, including my current role as the Administrative Director for the UK Markey Cancer Center Affiliate Network.

What should other employees know about the Markey Affiliate Network?

Our purpose is to provide high-quality cancer care close to home. Markey works with community hospitals to provide care near a patient's support system. Our quality standard is the American College of Surgeons Commission on Cancer, and we help affiliates achieve or maintain accreditation. Most cancer patients don't need to travel great distances because our affiliates provide that care in communities throughout Kentucky. We offer programs and services for our affiliates such as professional education and training, accreditation support, co-branding and marketing, community outreach and screening opportunities. I'm highly protective of the Markey brand, and it's important that our affiliates match our high quality of care.

For patients with highly complex cancers that can't be treated at a community hospital, Markey offers choices that keep patients in Kentucky. As an NCI-designated site, we are competing with incredible institutions like Vanderbilt in Tennessee and Washington University in Missouri. We want patients to know they don't have to travel out-of-state for comprehensive cancer care.

All of our network partnerships started with a relationship. Some of those relationships began with an outreach clinic staffed by a Markey medical oncologist. Interest also comes from local hospitals looking for a partnership with an academic center. The NCI-designation was a game changer in that regard, and more hospitals have pursued an affiliation with Markey. In 2006 we started with three sites. Ten years later, we have 16, and will most likely have 20 by the end of 2016.

What do you like best about your job?

I've been extremely fortunate throughout my career at Markey. Part of that is because of the people. I've never had a bad boss, and every one of them encouraged me to be more prepared for my next role. The people I've worked with have given me the flexibility to succeed at work while also making it possible for me to be a good mom at home.



Cheri Tolle.

It seems everyone here has a personal story about how cancer has affected them. My dad was diagnosed with multiple myeloma when he was 63, and although it was a terminal diagnosis, he had ten weeks of a high-quality life until his death. Seven years later, my mom was diagnosed with early stage breast cancer. She underwent successful treatment at Markey and just celebrated her 80th birthday.

When you work at Markey, you become the cancer expert in your family. I enjoy knowing that everyone here cares about the work they do, it matters. I'm fortunate to work with so many who share that understanding

How do you spend time outside of work?

My son is married with a newborn, and my daughter just graduated from Denison University in Ohio. My husband is a cyclist and I enjoy riding our tandem bike with him. I'm also a singer in two groups. Les Jongleurs is a small vocal ensemble that sings sacred, pop and classical music. SisterSound is a community chorus focused on music that is by, for or about women. We are celebrating 20 years of singing together this year!

Have you read any good books, or seen any good movies or shows lately?

I'm currently reading *Being Mortal: Medicine and What Matters in the End* by Atul Gawande. It's a book that asks, "When do we treat too much?" by exploring the death of the author's father, palliative care and hospice.

My secret shame is binge watching the fourth season of *House of Cards*.

WHO SHOULD BE OUR NEXT MARKEY MOVER?

Email the Research Communications Office at mccrco@uky.edu with your idea for the next Markey Mover.

NOTEWORTHY

WELCOME

Beverly Authur, MCC Affiliate Network
Patrick Baker, CESB
Yanan Cao, She Laboratory
Zachary Haas, CRO
Vernitta Hensley, CRO
Marie Higginson-Rollins, KY LEADS
James Hunsucker, KY Community Cancer Program
Rani Jayswal, BB SRF
Kai Jiang, Jia Laboratory
Woo-Young Kang, CSEB
Carey Kebodeaux, BSTP SRF
Lili Liu, Chen/O'Connor Laboratory
Yang Liu, CESB
Xinlan Lu, Zhou Laboratory
Pratheeshkumar Poyil, Shi Laboratory
Emily Reed, KY Community Cancer Program
Susan Reffett, MCC Affiliate Network
Elizabeth Rush, CRO
Michael Spencer, CESB
Jonathan Sudkamp, CESB
Chunyan Wang, CESB
Lei Wang, Shi Laboratory
Yang-An Wen, Gao Laboratory
Leonard Yenwong Fai, Zhang Laboratory
Cuiping Zhang, Liang Laboratory

PRESENTATIONS & PUBLICATIONS

Markey authors were responsible for 192 manuscripts and publications in journals from January through March 2016. Notable publications include the following.

Dickerson M, Howerton B, Bae Y, Glazer EC. Light-sensitive ruthenium complex-loaded cross-linked polymeric nanoassemblies for the treatment of cancer. *Journal of Materials Chemistry B* 2016;4:394-408.

Yu T, Chen X, Zhang W, Liu J, Avdiushko R, Napier DL, Liu AX, Neltner JM, Wang C, Cohen D, Liu C. Klf4 regulates adult lung tumor-initiating cells and represses k-ras-mediated lung cancer. *Cell Death Differ* 2016;23:207-215.

Berg C, Stratton E, Esiashvili N, Mertens A, Vanderpool RC. Providers' perspectives of survivorship care for young adult survivors of childhood cancer. *J Cancer Educ* 2016;31:31-38.

Goretsky T, Bradford EM, Ryu H, Tahir M, Moyer MP, Gao TY, Li LH, Barrett TA. A cytosolic multiprotein complex containing p85 alpha is required for beta-catenin activation in colitis and colitis-associated cancer. *J Biol Chem* 2016;291:4166-4177.

Martin SK, Pu H, Penticuff JC, Cao Z, Horbinski C, Kyprianou N. Multinucleation and mesenchymal-to-epithelial transition alleviate resistance to combined cabazitaxel and antiandrogen therapy in advanced prostate cancer. *Cancer Res* 2016;76:912-926.

Smith AJ, Wen YA, Stevens PD, Liu JP, Wang C, Gao TY. Phlpp negatively regulates cell motility through inhibition of akt activity and integrin expression in pancreatic cancer cells. *Oncotarget* 2016;7:7801-7815.

GRANTS

Daret St. Clair, PhD, was awarded National Cancer Institute funding for "Distinct Redox Mechanism in Normal and Cancer Cells as a Novel Therapeutic Target."

Chi Wang, PhD, and Hunter Moseley, PhD, were awarded National Cancer Institute funding for "Statistical Detection and Biochemical Classification of Cancer Driver Mutation Patterns in Biological Networks."

Roberto Caradelli, DO, MPH, was awarded Association of American Medical Colleges funding for "Reducing the Lung Cancer Burden in Northeast Kentucky through an Academic Community Partnership: A Terminate Lung Cancer (TLC) Study."

Jennifer Knight, DrPH, was awarded Patient Advocate Foundation funding for "Lung Cancer Prevention, Control, and Survivorship with Business and Community Engagement."

AWARDS, RECOGNITIONS & SELECTIONS

Robert DiPaola, MD, has been named dean of the University of Kentucky College of Medicine. Dr. DiPaola has extensive experience in translational research, clinical operations, education and leadership. His accomplishments in the area of translational research are underscored by grants from the National Institutes of Health, Department of Defense and private foundations, as well as his publications in prominent journals including the *New England Journal of Medicine*, *JAMA*, *Cell*, *Clinical Cancer Research* and the *Journal of Clinical Oncology*. He earned a bachelor's of science degree and his medical degree at the University of Utah; completed an internship and residency in Internal Medicine at Duke University Medical Center; and completed a Fellowship in Hematology-Oncology at the University of Pennsylvania Hospital in Philadelphia.

Shannon Weil, RN, BSN, is the new Patient Care Manager for the second floor Markey Cancer Center in-patient unit.

3-D Models of Spreading Tumors May Help Fight Cancer

University of Kentucky researchers Ren Xu and Gaofeng Xiong at the Markey Cancer Center and the Department of Pharmacology and Nutritional Sciences show it is possible to create a three-dimensional (3-D) model system to investigate how breast cancer cells invade lung tissue in a study that was featured on the front cover of the journal, *Integrative Biology*.

Advanced breast cancer tumors shed cells that can colonize other tissues in a process known as metastasis. If physicians detect malignant breast tumors early, they can remove tumors before they metastasize. After tumors gain the ability to traverse the bloodstream, they become much more difficult to treat. In order to develop treatments targeting metastatic cancers, researchers need new models that more accurately reflect cancers physicians treat in the clinic.

Xu's laboratory created the 3-D lung tissue matrix by removing the cells from the tissue while preserving the extracellular matrix (ECM) that make up the tissue's structural components. The researchers then showed breast cancer cells could colonize in the lung matrix in a manner resembling metastasizing breast cancer in patients in the clinic.

Xu believes the 3-D model may help develop drugs that inhibit breast cancer progression.

Public Health Researcher Awarded Grant to Examine Lung Cancer Screening Behaviors in Appalachia

University of Kentucky College of Public Health researcher Kate Eddens received a grant from the Kentucky Lung Cancer Research Program to investigate how social ties and communication networks influence Appalachians' lung cancer screening behaviors.

Eddens, an assistant professor in the Department of Health Behavior, will examine the social models and communication networks that inform Appalachian residents' attitudes toward lung cancer screening and cancer screening behaviors. The \$150,000 grant will support the research and subsequent interventional efforts to promote discussions about lung cancer with health care providers.

According to Eddens, Appalachians rely on strong social and community networks to obtain and disperse information. In addition to measuring knowledge and attitudes about lung cancer screening and intention to screen, the study will describe community and social support networks Appalachians use to formulate attitudes and make decisions about lung cancer screening.

"Through this project, we hope to create effective, translational interventions that we can then implement through the natural advice and discussion networks that already exist in Eastern Kentucky communities to promote shared decision-making regarding lung cancer screening," Eddens said. "Ultimately, this will reduce the tremendous burden of lung cancer death in Appalachian Kentucky among those at greatest risk of lung cancer."

SelfMade Health Network Partners with UK College of Public Health to Reduce Tobacco-Related Cancer

To address tobacco-related health disparities in Appalachia, the Centers for Disease Control and Prevention (CDC) has designated a coalition based at the University of Kentucky College of Public Health as the newest member of the SelfMade Health Network (SMHN). The CDC's SMHN is a national network of dedicated professionals, organizations and communities seeking to eliminate tobacco-related health disparities in underserved or high-risk populations. The UK College of Public Health, in coordination with the Kentucky Cancer Program and the Kentucky Cancer Consortium, will serve as a Regional Resource Lead Organization (RRLO) within the SMHN.

The UK-based RRLO, in partnership with the Kentucky Cancer Program at the University of Louisville, will lead efforts to increase early lung cancer screening, treatment and survivorship in Appalachia. The coalition will work to enhance tobacco cessation support among male populations, including uninsured, low-income employees and unemployed adult tobacco users residing in primarily rural and medically underserved areas.

"With among the highest rates of tobacco-related illnesses, including cancer, in the U.S., Kentucky must be a leader in the elimination of this deadly and costly disease that causes the suffering of so many," Nancy Schoenberg, associate dean for research in the UK College of Public Health, said.

MARKEY DIFFERENCE MAKERS

Congratulations to the following Markey Difference Makers for the first quarter of 2016.

Dianne Bogie	Gay McGarey
Farrah Cates	Janki Patel
John Dixon	Renee Rainey
Garretson Epperly	Catherine Rainwater
Miranda Hatfield	Caltha Turner
Brittany Hatton	Sandra Vice
Gerhard Hildebrandt	Edna Ware
Melanie Hunter	Kimberly Willis
Crystal Kendrick	Jessica Zehnder

Do you know a Markey Difference Maker?

Nominations are now accepted online.