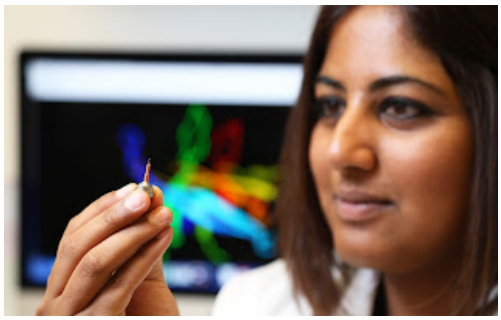
Med School Watercooler

NEWS FROM FREDERICK P. WHIDDON COLLEGE OF MEDICINE AT THE UNIVERSITY OF SOUTH ALABAMA

Thursday, December 17, 2020

USA scientist named council member of international society



Aishwarya Prakash, Ph.D., associate professor of biochemistry and molecular biology, has been named as a council member of the Environmental Mutagenesis and Genomics Society. Prakash was among five members recently elected to serve three-year terms. She joins Natalie Gassman, Ph.D., assistant professor of physiology and cell biology, as the only USA College of Medicine faculty on the council.

The Environmental Mutagenesis and Genomics Society (EMGS) consists of academic, industrial and governmental researchers. It focuses on the study of environmental impact on human health and the role that genetics can play in diseases.

EMGS Council members are responsible for collecting and distributing resources, establishing policies, approving plans within the program, overseeing the society's work, and reporting to other members. Members are nominated to be a potential counselor, and others participate in an online voting process to determine which nominees will join the council.

Prakash initially became a member of EMGS in 2017. Support for junior faculty, she said, drew her to the group: "It's been a great support. It really helped during my first few years because it gave me an opportunity to present my work at annual meetings and meet like-minded scientists," she said.

Prakash was awarded the EMGS Young Scientist Award in 2018. She also is a member of multiple committees within the group, including the Environmental and Molecular Mutagenesis Editor's Choice team. She is the chair of the Young Scientist Award committee and co-chair of the Women in the EMGS committee. In 2020, Prakash was selected as the Young Investigator co-chair for EMGS Annual Meeting, where she participated in organizing and planning the EMGS annual meeting that was held virtually in 2020. She also was elected to be the co-chair of the EMGS DNA Repair Special Interest Group, also a three-year term.

Student's poster on vaccinations wins infographic competition

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Second-year medical student Ian Thompson hopes to dispel some myths about vaccine safety with an infographic poster he designed. As the winner of a recent competition, hosted by the USA College of Medicine's Public Health Interest Group, Thompson will have his work displayed in USA Health facilities.

The competition invited students to submit one-page designs on a number of health topics with the goal of helping USA Health patients make more informed decisions about their health, said Gisella Ward, MPH, a fourth-year medical student and president of the Public Health Interest Group.

Ian Thompson

"Students were able to be creative and marry the art and science of medicine to promote public health," Ward said. "Helping educate our patients in a variety of ways teaches them self-efficacy to inform and improve their own health outcomes. They are more compliant when they understand the risks and benefits of their decisions."

The infographics were judged by a panel of USA and USA Health faculty and physicians.

"I'm incredibly grateful that my work was selected for this honor," said Thompson, who also won a $25 Amazon gift card. "USA Health serves a large and diverse patient population; and while it's admittedly intimidating to know that so many people will see my infographic, it's also nice to know that my efforts may inspire them to take action."

Thompson, who had some experience designing flyers during his undergraduate studies, said he considered a few topics for the infographic competition such as diabetes and handwashing. He settled on vaccinations after realizing how much misinformation there was about them.

"People tend to fear what they don't properly understand; but as we learn more, it becomes easier for us to realize that we actually have nothing to be afraid of," he said. "It is my hope that my infographic will eliminate some common misconceptions about vaccines."

Faculty needed for the USA College of Medicine Primary Care Pathway Program

The pandemic has shed more light on the critical need for physicians with public health and leadership skills in Alabama and beyond. With that in mind, faculty instructors and mentors are now being recruited to help students excel in this new reality as part of the recently launched Primary Care Pathway Program at the USA College of Medicine.

In this pre-pandemic photo, Allen Perkins, M.D., MPH, far right, walks with faculty and medical students.

Training for interested faculty members will begin in January.

The Primary Care Pathway Program provides medical students specialized training in primary care at community health centers in Alabama. The goal is to increase the number of primary care physicians in underserved areas and provide them with the skills necessary to improve the health of the communities.

USA Health faculty who participate will receive:

- Twenty-four hours of continuing education credit following completion of the program

- Faculty development through workshop sessions via Zoom or in person

Faculty will instruct students on topics such as leadership, population health sciences, social determinants of health and opioid and substance abuse screening, which are topics covered in the CME course.

"I strongly encourage all faculty interested in the health of the population, not just primary care faculty, to consider joining this program to better serve our medical students who will be providing care in a post-COVID environment," said Allen Perkins, M.D., MPH, chair of family medicine and principal investigator for the project. "Those who choose to take part will ultimately have a hand in shaping the future of healthcare."

Those interested should contact Emmaline Barnhill, project manager for the Department of Family Medicine, via email at ebarnhill@health.southalabama.edu.

Students are chosen for the Primary Care Pathway Program based on an interest in primary care and a willingness to commit to the practice following residency training.

Wednesday, December 16, 2020

Medical student studies metastatic breast cancer treatment data to improve therapeutic options

With the goal of improving therapeutic options for breast cancer patients, Aidan Gilbert, MPH, a second-year medical student at the USA College of Medicine, recently studied the treatment patterns of nearly 1,700 patients with metastatic breast cancer (MBC).

Using data visualization – graphic representations of information and data – he examined the sequence of treatments and how those patterns related to patient survival.

"Metastatic breast cancer is a debilitating terminal disease that affects thousands of women each year," Gilbert said. "I think it's of the utmost importance for physicians and researchers to continue research in this field in an attempt to improve therapeutic options, whether that is the development of novel treatments, or more in line with what we have done here in trying to understand treatment patterns that may confer survival benefits."

Results from the study, "Utilizing Data Visualization to Identify Survival and Treatment Differences Between Women with *De Novo* and Recurrent Metastatic Breast Cancer," were published in Clinical Breast Cancer, a peer-reviewed bimonthly journal.

De novo is stage IV breast cancer in which the patient has metastatic disease on day one of diagnosis. Recurrent metastatic breast cancer is when the patient presents with early stage (I-III) cancer; receives surgery, chemotherapy or both; and then later develops metastatic disease.

There are three major subtypes of breast cancer: hormone receptor positive and human epidermal growth factor receptor 2 negative (HR+/HER2-); human epidermal growth factor receptor 2 positive (HER2+); and triple negative, meaning HR negative and HER2 negative (TNBC).

"Using data visualization techniques that we developed, our study found that, when stratified by the three major breast cancer subtypes, and *de novo* versus

recurrent metastatic breast cancer, there were observable differences in treatment sequencing and survival," Gilbert said.

The most significant clinical findings were:

- HER2-targeted therapy is used across the continuum of the cancer course in both *de novo* and recurrent disease.
- In HR+/HER2- breast cancer, chemotherapy is administered more often early in the course of disease for patients with *de novo* breast cancer than those with recurrent metastatic breast cancer. So, there is a more aggressive treatment approach up front in *de novo* compared to recurrent.
- Treatment breaks are common amongst patients with long survival in triple negative breast cancer.

The treatment patterns and survival differences between *de novo* and recurrent MBC means there is a distinction between them. Therefore, Gilbert said, "they should be considered that way and not just under the umbrella of metastatic breast cancer."

Gilbert said data visualization techniques, in conjunction with more traditional statistical analyses, can be useful in predicting the success of an entire treatment course from the point of diagnosis rather than the immediate effects of an individual treatment.

This retrospective study evaluated treatment patterns of 1,668 patients with *de novo* and recurrent MBC using the American Society of Clinical Oncology's CancerLinQ Discovery database.

Research aims to improve outlook for Black women with endometrial cancer

Natalie Gassman, Ph.D., assistant professor of physiology and cell biology, and Nathaniel Jones, M.D., assistant professor of gynecologic oncology, collaborate on research at the Mitchell Cancer Institute.

As a gynecologic oncologist, Nathaniel Jones, M.D., treats women with endometrial cancer at the USA Health Mitchell Cancer Institute. As a physician-scientist, Jones wants to know why Black women have worse outcomes from the disease, the most common gynecologic cancer in women in the United States, and what can be done to improve their odds.

Despite recent advancements in care, Black women are 60 percent more likely to die from endometrial cancer – a cancer that develops in the uterus – compared

with women of other races.

As an assistant professor of gynecologic oncology, Jones is beginning a research project to address this difference in Black women. His research will use a new method developed at the MCI to measure DNA damage in the tumors of endometrial cancer patients and determine whether DNA repair defects can predict how patients will respond to immunotherapy. The research is being funded by a two-year mentored grant from the National Institutes of Health.

"Ultimately, I hope our work helps change the way we triage endometrial cancer patients who come to us for treatment," Jones said. "We have a large population of Black women who we treat here, and it is difficult knowing that they will have worse outcomes compared with white women receiving the same treatment. This research really hits close to home for us."

Jones proposes to use Repair Assisted Damage Detection (RADD), a new method of assessing DNA damage in tumor tissue that was developed by cancer researcher Natalie Gassman, Ph.D., assistant professor of physiology and cell biology at the USA College of Medicine.

The RADD method harnesses the specificity of DNA repair enzymes to detect and remove DNA damage, then tags the damage sites with a fluorescent dye to allow for quantification of damage levels on a single cell level. RADD characterizes the unrepaired DNA damage left behind by defective repair machinery to understand the impact of DNA repair defects in cells and in the tumor. The technique can even be employed rapidly by pathology labs, with DNA damage measurements made within 24 hours.

"There is no comparable technology available that can assess DNA damage within tissue samples," Jones said.

He intends to use findings about DNA damage to see whether there is a correlation between damage and survival rates in endometrial cancer patients. He also wants to determine whether patients with significant DNA damage are more responsive to immunotherapy. Immunotherapy is a type of cancer treatment that boosts the body's natural defenses to find and destroy cancer cells.

The technique will allow DNA damage to be assessed on individual patients' tumors so that physicians can make better informed decisions about treatment, such as prescribing immunotherapy prior to the standard regimen of chemotherapy.

Jones wants to take the research a step further by measuring the immune response to therapy among Black women with various percentages of African American genetic makeup. "The study will strive to more completely understand the relationship between DNA damage levels, therapeutic response and disease outcomes for patients stratified by the genetic definition of race," he said. "We intend to provide a novel perspective on uterine cancer health disparities and create models for personalized medicine for minority populations."

MCI operates the largest gynecologic oncology practice in the upper Gulf Coast region and has a reputation for impactful research into cancer health disparities, said Rodney Rocconi, M.D., the Elsie Colle Chair of Oncology Research and associate director for clinical research and professor of gynecologic oncology at MCI.

"Despite the focus to improve cancer outcomes in people of color, unfortunately, our Deep South region has some of the worst cancer inequities in the country," said Rocconi, who will serve as mentor to Jones for the research project. "Our prior work has shown that when controlling for social and treatment factors, even within clinical trials, that a worse survival still exists for Black patients with uterine cancers, including endometrial cancer. This project should improve the treatment for Black women with endometrial cancer and hopefully close the survival gap, so that more women can live longer, healthier lives."

Monday, December 14, 2020

Townsley set to retire at the end of 2020

One of the USA College of Medicine's most consistent faculty and administrative presences is retiring at the end of December.

Mary I. Townsley, Ph.D., senior associate dean for the college and professor of physiology and cell biology and internal medicine, will end a tenure that has lasted more than three decades.

"It has been exhilarating to watch the College of Medicine grow through the years, both with respect to research and to our educational programs," Townsley said. "The community of colleagues, administrators, staff and trainees I've interacted with here have made my time at South extremely rewarding."

Townsley joined the faculty at the USA College of Medicine in 1988, also completing postdoctoral training at USA from 1983 to 1986. A physiologist by training, Townsley served in a number of administrative roles, in addition to being a researcher, instructor and mentor.

"I cannot underestimate the impact Mary has had on the development and growth of our College of Medicine," said. John V. Marymont, M.D., MBA, dean of the USA College of Medicine and vice president for medical affairs. "There are very few areas, if any at all, that Mary has not been involved with during her time here. Her most recent project that she saw to completion was the development of a new medical student center."

After completing her postdoctoral fellowship, Townsley joined the faculty at the Northeastern Ohio University College of Medicine before returning to USA as an assistant professor of physiology. While moving up the ranks as a faculty member, becoming a full professor in physiology in 1995, she also was building her administrative portfolio. She served as the director of graduate studies, director of the interdisciplinary graduate program in basic medical sciences, director of the training program in the Center for Lung Biology, assistant and then associate dean for faculty affairs, and interim chair of physiology and cell biology before taking on her current role, first as interim in 2016 and permanent senior associate dean in 2017.

Townsley is an accomplished researcher, having secured federal funding for much of her scientific career. Her research emphasis has been on understanding the mechanisms associated with acute lung injury.

Please join us Friday, Dec. 18 at 2 p.m. for a virtual retirement celebration. The Zoom link for the celebration is https://southalabama.zoom.us/j/97877576205.

Anyone who wishes to send thoughts and messages to Townsley may do so at mtownsley@southalabama.edu. Those who want to deliver cards or handwritten messages may drop them in the mailbox outside the dean's office or send them to: 5795 USA Drive N, CSAB 170, Mobile, AL 36688.