

Med School Watercooler

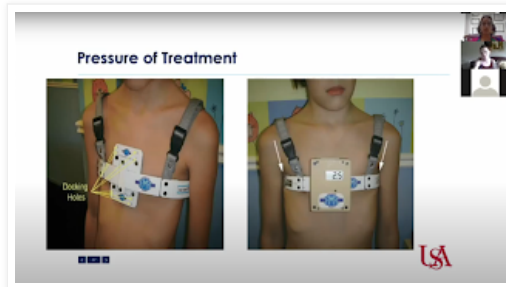
NEWS FROM FREDERICK P. WHIDDON COLLEGE OF MEDICINE
AT THE UNIVERSITY OF SOUTH ALABAMA

Thursday, August 27, 2020

Med School Café video online: 'Chest Wall Reconstruction'

USA Health hosted the first-ever virtual Med School Café on Aug. 21.

Hanna Alemayehu, M.D., assistant professor of surgery and pediatrics at the University of South Alabama College of Medicine and a pediatric surgeon at USA Health, discussed chest wall reconstruction treatments provided by the USA Health pediatric surgery department.



Watch the recording of the event at <https://youtu.be/9998ujxAaeY>.

Posted by Med School Watercooler at [12:04 PM](#) No comments:

Menger answers the call to treat patients in COVID-19 hotspot



As a lieutenant commander in the U.S. Navy Reserve Medical Corps, Richard Menger, M.D., assistant professor of neurosurgery at the USA College of Medicine, was deployed to Bellevue Hospital in New York City as part of the Navy Medicine Support Team.

In early April, when the number of people getting sick and dying from the novel

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coronavirus was skyrocketing, Richard Menger, M.D., got a call and had to make a choice. Just 36 hours later, leaving behind his wife, young children and a new medical practice, he fulfilled his oath as both a military and medical professional and headed to treat COVID-19 patients in New York City, which quickly was becoming the epicenter for the virus in the United States.

"This is the entire purpose of military service in the reserves: to step up at the time you are needed most and to go forward and make a difference," said Menger, assistant professor of neurosurgery at the University of South Alabama College of Medicine. "It was intense and impactful, and I'm honored to have had the opportunity to play a small part."

As a lieutenant commander in the U.S. Navy Reserve Medical Corps, Menger, who is also chief of complex spine surgery at USA Health, was deployed to Bellevue Hospital as part of the Navy Medicine Support Team (NMST) with Operation Gotham.

Menger ran a COVID-19 intensive care unit at Bellevue and most of his time was spent housed in an endoscopy suite that had been converted into an overflow intensive care unit. Normally, Bellevue Hospital has 18 medical ICU beds and 54 total ICU beds, but 150 patients needed ICU care when Menger arrived.

Menger worked with pediatricians, obstetricians, eye doctors, residents, nurse practitioners and physicians assistants that were all doing their part outside of their primary specialty to care for the large number of coronavirus patients. For 84 days from April to June, Menger had more than 300 patient encounters while the entire deployment cadre of the NMST treated approximately 31,000 patients. In April alone, New York City averaged upwards of 5,000 daily cases and now has had more than 200,000 reported cases in the five boroughs.

Menger sees his time in New York as also fulfilling the mission of service that those in academic medicine work for every day and said he is thankful for the support of his partners, Anthony Martino, M.D., and W. George Rusyniak, M.D., in neurosurgery at USA Health in taking extra call, performing extra cases and caring for his patients while he was deployed to New York.

"This was in line with the values of USA Health and its academic calling to service to the community," Menger said.

With three small girls at home and another (this time, a boy) on the way, Menger said he also is thankful for the sacrifice made by his wife and family. "Without her, I wouldn't be able to do any of this. Her sense of duty and service are incredible," he said.

With Menger's deployment, four generations of the Menger family have now served New York City as physicians. Louis C. Menger, M.D., practiced otolaryngology in Brooklyn from 1910 to 1947. Harold C. Menger, M.D., practiced otolaryngology in Queens from 1951 to 2005, and Peter Menger, M.D., has been practicing ophthalmology in Queens and Long Island since 1988.

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Mark your calendar: Upcoming grand rounds

Mark your calendar for the following grand rounds:

Surgery Grand Rounds

"Optimization of Cirrhotic Patients Prior to Elective Procedures"

Phillip Henderson, D.O., Associate Professor of Internal Medicine, USA College of Medicine

7 to 8 a.m. Friday, Aug. 27

Zoom: <https://usahealthsystem.zoom.us/j/95556985343>

Contact: Tyronda Rogers at 251-445-8230 or

tmrogers@health.southalabama.edu

OB-GYN Grand Rounds

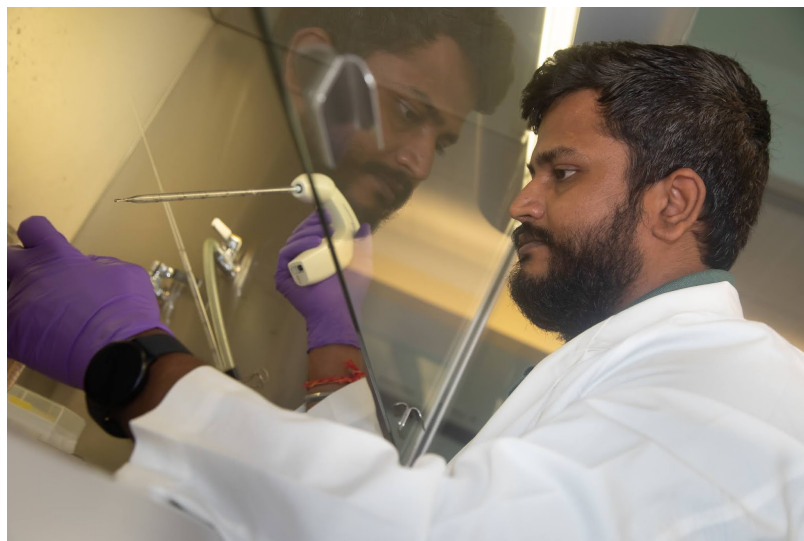
"Introduction: The New ASCCP Guidelines and Primary HPV Screening"

Jennifer Young Pierce, M.D., Professor of Oncology
Stephen Varner, M.D., Associate Professor of Obstetrics and Gynecology
7:30 to 8:30 a.m. Friday, Aug. 27
Zoom: https://southalabama.zoom.us/meeting/register/tJUuf-Gsrz0oH9PNDQgKTE4Fh6h_j4keBDJL
Contact: Nichelle Bradley at 251-415-1566 or
nbradley@health.southalabama.edu

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Wednesday, August 26, 2020

USA researchers study significance of RAB genes in pancreatic cancer



Shashi Anand, Ph.D., a postdoctoral fellow in pathology, is the lead author of a study on the potential prognostic significance of RABs in pancreatic cancer.

A group of researchers and physician-scientists from the USA Health Mitchell Cancer Institute along with University of South Alabama College of Medicine faculty in the Department of Pathology and Department of Biochemistry and Molecular Biology are studying how certain genetic abnormalities affect the progression of pancreatic cancer. They recently published a research article titled "Comprehensive Analysis of Expression, Clinicopathological Association and Potential Prognostic Significance of RABs in Pancreatic Cancer" in the International Journal of Molecular Sciences.

According to the National Cancer Institute, pancreatic cancer is the third leading cause of cancer-related death in the United States. "Poor clinical outcome of pancreatic cancer is mostly due to its late diagnosis and lack of effective therapies, emphasizing the need to identify novel biomarkers and therapeutic targets for effective disease management," said Shashi Anand, Ph.D., a postdoctoral fellow in pathology and the lead author of the article. "Several genetic aberrations have been identified in pancreatic cancer that drive its malignant progression. However, we have not succeeded in translating the existing information into effective therapies."

Thus, finding novel differentially expressed genes in pancreatic cancer and understanding their role in biology holds the potential to improve pancreatic cancer diagnosis, prognosis and treatment, Anand said.

Ajay Singh, Ph.D., professor of pathology and senior author of the study, explained that all human cells are comprised of various membrane-bounded compartments that interact with the cells' surroundings. Cells release their internally synthesized biomaterial into the extracellular matrix via exocytic pathways, or they internalize the material from the environment to the inside of the cell via endocytic pathways.

"This bi-directional communication between the cells and their external

environment is crucial for optimal tissue and organ functions," Singh said. "A specific set of closely related proteins, named RAB GTPases, controls this vesicle trafficking by acting as regulatable switches in response to the cellular needs and external cues. The abnormal function of RAB proteins, resulting from genetic changes and aberrant transcriptional activation, can cause a disease state including the promotion of carcinogenesis."



Shashi Anand, Ph.D., left, works in the lab of Ajay Singh, Ph.D., right, at the Mitchell Cancer Institute.

In the published study, Anand analyzed the expression of 62 RAB genes in hundreds of pancreatic cancer patients using The Cancer Genome Atlas database. The study identified 10 RAB genes that exhibited significant differences in expression between normal and cancerous pancreatic tissues. In addition, differential RAB expression was also correlated with patient's race, drinking habits, and prior diagnosis of diabetes and pancreatitis. A significant association of transcript levels of some of the RAB genes with the survival predictability of pancreatic cancer patients was also recorded. Additionally, Anand identified low-frequency genetic mutations, amplifications and deletions of RAB genes in pancreatic cancer.

"These are very important early findings suggesting the potential diagnostic and prognostic significance of RABs in pancreatic cancer," said Moh'd Khushman, M.D., a medical oncologist at the Mitchell Cancer Institute and a co-author of the article. "Further investigations on their functions and underlying mechanisms can also provide important leads for the development of mechanism-based therapies."

The work outlined in the research paper was supported by the National Institutes of Health grant funding and internal support from the Mitchell Cancer Institute.

Anand is a postdoctoral fellow in the laboratory of Singh, who leads the cancer biology program at the Mitchell Cancer Institute. He received his graduate degree from CSIR-Institute of Microbial Technology, India. He is the recipient of a senior research fellowship from the Council of Scientific and Industrial Research, a federal research agency in India.

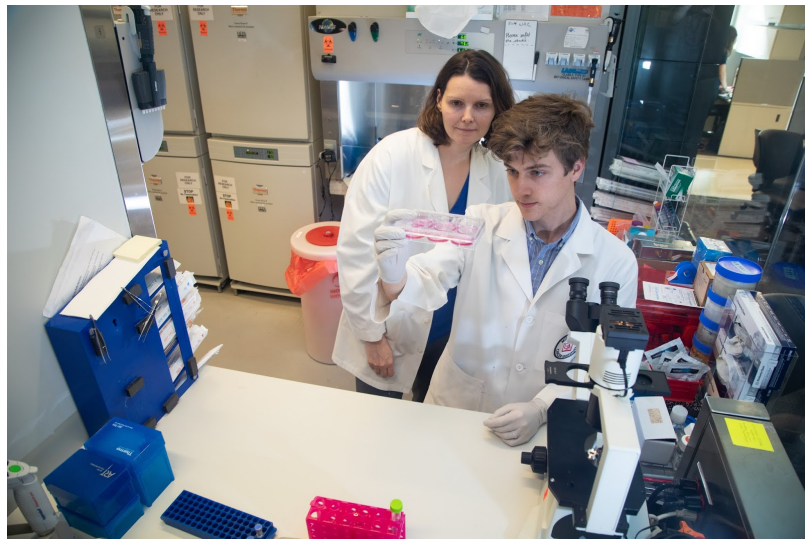
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Bander Award supports e-cigarette research

Natalie Gassman, Ph.D., assistant professor of physiology and cell biology at the University of South Alabama College of Medicine and a cancer researcher at USA Health Mitchell Cancer Institute, recently received the 2020 USA Center for Lung Biology Murray Bander Faculty Development Award. The award, which is given each year, seeks to foster innovative discoveries in pulmonary research and promote faculty development.

As a member of the USA Center for Lung Biology, her research seeks to answer questions about how electronic cigarettes cause lung injury and offer new information about the potentially compromised immune function in electronic cigarette users.

"Unfortunately, we don't yet understand what causes the lung damage or how it manifests so quickly," Gassman said. "Electronic cigarette use has grown exponentially in adolescents and young adults, and reports of lung injury and compromised lung function among electronic cigarette users have also increased dramatically."



In this pre-COVID-19 photo, Natalie Gassman, Ph.D., left, assistant professor of physiology and cell biology, works with Griffin Wright, a student in the Basic Medical Sciences Graduate Program, in her lab at the Mitchell Cancer Institute.

According to Gassman, her work examines dihydroxyacetone (DHA) – a small molecule produced by electronic cigarettes. “We have shown that DHA exposure causes cell injury and impairs cell function, which may contribute to lung damage,” she said. “We have identified a protein, triose kinase/FMN cyclase (TKFC) that is critical to the incorporation of DHA into cells and their metabolic pathways.”

The Bander Award will allow Gassman and her lab to examine if DHA, through TKFC, promotes lung injury by changing lung cell function and altering immune responses.

Gassman said her research has far-reaching potential to impact patient care. “There is a pressing need to understand how electronic cigarettes damage the lungs in order to develop treatment strategies for users and regulations to restrict dangerous ingredients and/or electronic cigarette use,” she said. “This research will answer questions about how electronic cigarettes cause lung injury and offer new information about the potentially compromised immune function in electronic cigarette users.”

Murray Bander, a World War II veteran who moved from New York to Mobile to operate a clothing shop, died from complications of pneumonia in 2001. He left his estate to the USA College of Medicine in 2003, and the Murray Bander Endowment for the Center for Lung Biology was established to support scholarly activities in lung biology.

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