

The PMI Times

Department of Pathology, Microbiology & Immunology
University of South Carolina ~ School of Medicine
The Communication Source for PMI Faculty, Staff & Students
Department Chair: Dr. Mitzi Nagarkatti, PhD
Editors: Mitzi Nagarkatti, PhD, Angela Murphy, PhD & Nicki Holt



May - August 2023

P Honors & Awards

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I Nicki Holt was honored with the SOM Community Service Award, at the 2023 Alumni and Dean's Distinguished Service Awards Ceremony. Dr. Harmon, SOM Interim Dean, presented the awards at a dinner held to recognize individuals who demonstrate excellence in service, leadership, advocacy, and professional accomplishments. Congratulations Nicki! We are all lucky to have you on the PMI team!



Dr. Carole Oskeritzian received a new NIH/NCI R21 grant as PI, entitled "Novel modalities for prostate cancer screening: mast cells as predictors of disease, disease aggressiveness and marks of disease disparity" for ~\$390,000 with a start date of 06/01/2023.

Dr. Angela Murphy is a Co-Investigator on a newly awarded R21 from the National Cancer Institute to Ciaran Fairman in the Department of Exercise Science titled 'The Feasibility and Acceptability of Resistance Training and Creatine Supplementation to Promote Physical Function in Sarcopenic Colorectal Cancer Survivors'.

Dr. Kandy Velázquez was awarded a Pilot Project from MEDOC-NIH entitled "Benefits of anti-inflammatory diet on biomarkers associated with metabolic dysregulation: dependent or independent of a reduction in calories?"

Dr. James F. Catroppo was awarded the honor of delivering the Pearls of Wisdom address by the students of the University of South Carolina School of Medicine M2 Class of 2025. His address was entitled "Braving Uncertainty... Uncertainty Is The Water We Swim In".



Dr. Kiesha Wilson was presented with the AAI Minority Scientist Travel Award, IMMUNOLOGY2023. American Association of Immunologists (AAI). Washington, DC, May 11 - 15, 2023.

Dr. Carole Oskeritzian serves as main inventor on a US Patent No. US 11,714,088 B2 entitled "Early Detection of Colorectal Cancer" that was issued on August 1, 2023.

Tom Cardaci (Murphy Lab) received a 3-year F31 award from the NCI titled "Impact of Obesity on Chemotherapy-Induced Muscle Mitochondrial Dysfunction". Mentors include Drs. Angela Murphy (PMI), Kandy Velazquez (PMI), Norma Frizzell (PPN) and Espen Spangenburg (East Carolina University).

Dr. Kandy Velázquez was awarded a grant from the South Carolina Opioid Recovery Funds entitled "Development of Ojeok-San as a safe and effective analgesic to treat chronic pain.

Dr. Carole Oskeritzian was invited to serve as a Panelist at the 2023 Academic Leadership and Career Development Workshop organized by the South Carolina IDeA Networks of Biomedical Research Excellence (SC INBRE) held on June 16 in Columbia, SC.

Dr. Kandy Velázquez received as Multi-PI with Dr. Reilly Enos an award to investigate "Isoxanthohumol as a treatment for estrogen-deficient-induced visceral pain" as a supplement of their NIH COBRE on Dietary Supplements and Inflammation awarded to Dr. Prakash Nagarkatti and Dr. Mitzi Nagarkatti.

Dr. Swapan Ray serves as Academic Editor for these peer-reviewed journals: *Cells*, *Brain Sciences*, *Journal of Food Biochemistry*, and *Scientific World Journal*.

Dr. Carole Oskeritzian, Co-Chair of the South Carolina Governor's Awards for Excellence in Science Committee, presided over the award ceremony held at the State Capitol on July 19, in the presence of Governor McMaster.

Dr. Swapan Ray's undergraduate research student Amanda Manea, an Honors College Senior with Mathematics and Biological Sciences double major, received local, state, and national awards based on her undergraduate research in Dr. Ray's lab and published two major papers as the 1st author in the peer-reviewed biomedical journals. She has recently moved to California (CA) as she has been accepted in the MD-PhD dual degree program at the California Institute of Technology (Cal Tech), CA.

Dr. Carole Oskeritzian was elected Vice President of the South Carolina Academy of Science for a two-year mandate.

Tom Cardaci (Murphy Lab) was selected by the USC Office of the Vice President for Research as the limited submissions candidate from USC for a F99/K00 application sponsored by NCI. F99/K00 grants are limited submissions (one per institute) providing two years of pre-doctoral support and 4 years of post-doctoral support if awarded. Tom's mentors include Drs. Angela Murphy (PMI), Kandy Velazquez (PMI), Norma Frizzell (PPN) and Jie Li (Chemistry and Biochemistry).

Drs. Carole Oskeritzian and Angela Murphy were invited to serve as Mentors by the USC Office of the Vice President for Research for the 2023-2024 Propel Research Mentorship Program. Propel Mentors are recruited among tenured faculty with strong records of garnering grant funding from the NSF and/or NIH and experience serving on NSF and/or NIH study sections.

News & Updates

A warm welcome to Dr. Kiesha Wilson who joined the department as an Assistant Professor July 1, 2023. Dr. Wilson completed her B.S. at Clemson University. However, Kiesha is no stranger to the university as she completed both her Ph.D. in Dr. Bert Ely's lab in the Dept. of Biological Sciences and postdoctoral training in Dr. Nagarkatti's labs at USC SOM. During her postdoctoral studies, she was successful in attracting an NIH MOSAIC (Maximizing Opportunities for Scientific and Academic Independent Careers) grant to pursue research focused on understanding the underlying immunological mechanisms of acute respiratory distress syndrome, and how treatments with different phytochemicals might intercept these responses and alleviate exacerbation of disease. Her passion for STEM goes beyond the bench as she strives to promote diversity in biomedical research by volunteering as a mentor in local community organizations and at the university. Dr. Wilson holds many roles, with the most important being a wife and mother of two very active children. For fun, she loves to play sports with her husband and kids, be a sideline coach, gardener, and cook.

We are excited to welcome Dr. Avery K. Dingle, who is joining the Pathology, Microbiology, and Immunological Department as a Clinical Assistant Professor, August 1, 2023. Dr. Dingle received a B.S. Degree in Human Health and Wellness from The Citadel - Military College of South Carolina, a Doctor of Medicine from the Universidad Autonoma de Guadalajara, and is currently a Ph.D. Candidate in Public Health. He has relocated to South Carolina through New Jersey, where he was a Professor at several institutions. Besides inspiring the next generation of health professionals, Dr. Dingle enjoys spending quality time with his wife (Traci) and son (Baszol).

Bhargav Shreevatsa K.S, M.Sc., a visiting scientist from Mysuru, Karnataka, India, joined the Nagarkatti lab in August for 6 months while working on his thesis. He was selected through a competitive award provided by the JSS Academy of Higher Education and Research to support him during the visit. He specializes in performing in silico computational analysis examining receptor-ligand interactions in neurological diseases. His primary focus is on researching bioactives for targeted therapy against Parkinson's disease.

Drs. Mitzi and Prakash Nagarkatti were interviewed by [Dylan Bailey, M.S., R.D., F.A.N.D.](#) from Forbes Health titled, "Anti-Inflammatory Supplements Backed By Science", published May 15, 2023. <https://www.forbes.com/health/body/anti-inflammatory-supplements/>

Dr. Miti Nagarkatti and Dr. Prakash Nagarkatti were featured in The Conversation titled, "Pivotal points in the COVID-19 pandemic – 5 essential reads. This was published May 17, 2023. <https://theconversation.com/pivotal-points-in-the-covid-19-pandemic-5-essential-reads-205722>

Dr. Carole Oskeritzian was the guest speaker at the USC SOMC Research Center for Transforming Health Emerging Physician Scientist Faculty Fellowship Program, on May 23. Dr. Oskeritzian discussed grantsmanship.

Dr. Prakash Nagarkatti was interviewed August 23, 2023, by David Robson, award winning science writer and author, for a forthcoming article about the endocannabinoid system in *New Scientist*, the UK's most popular science magazine.

Dr. James F. Catroppo attended the following faculty development sessions:

- International Association of Medical Science Educators (IAMSE) roundtable discussion "A Framework for Flourishing in Medicine" (2 May 2023)
- International Association of Medical Science Educators (IAMSE) roundtable discussion "Overcommitment" (16 May 2023)
- Association of Pathology Chairs (APC)/Undergraduate Medical Educators Section (UMEDS) webinar discussion session "Getting Ready To Use ERAS Program Signaling For Pathology Programs" (9 June 2023)
- USC educational session "Understanding Student Disabilities" presented in partnership with the USC ADA Coordinator's Office and the USC Student Disabilities Resource Center (SDRC) (19 July 2023)
- International Association of Medical Science Educators (IAMSE) roundtable discussion "Tips for Getting Students to Buy in to Active Learning" (1 August 2023)

Dr. Swapan Ray served as a reviewer for the Ralph E Powe Junior Faculty Award Applications, which were administered by the Oak Ridge Associated Universities (ORAU) Government Services (OGS). These awards are intended for the future of scientific research that rewards ambitious young faculty at ORAU member universities and supports their professional development.

Dr. Swapan Ray has been appointed as a member of the Liaison Committee on Medical Education (LCME) Faculty Committee by Gerald E. Harmon, MD, Interim Dean, USC SOMC. The Committee has started a self-study process in preparation for our LCME accreditation site visit in February 2025. The committee will be in place through fall 2024.

Dr. Kandy Velázquez participated in the NCI Clinical and Translational Cancer Research (ZC1 TCRB-V (01)) Study Section. June 22, 2023.

Dr. James F. Catroppo attended the Association of Pathology Chairs (APC)/Undergraduate Medical Educators (UMEDS) 2023 Annual Meeting, July 17-19.

Nicole Joven joined the Murphy Lab as a Research Assistant in July 2023. Nicole brings expertise in animal research and benchwork. Welcome Nicole!

Alea Browne, a student from the PREP Program, joined the Velazquez Lab.

Angela Murphy served as a reviewer for NIH/NCI Transition to Independence awards on June 6-7, 2023. Dr. Prakash Nagarkatti was a featured speaker: EPSCoR Distinguished Lecture Series at the 2023 NSF EPSCoR PI Meeting, "Jurisdictional Transformation: Embracing the Future of NSF EPSCoR", Alexandria, VA, May 15-17, 2023.

Publications

Holloman BL, Cannon A, Wilson K, Singh N, Nagarkatti M, Nagarkatti P. Characterization of Chemotaxis-Associated Gene Dysregulation in Myeloid Cell Populations in the Lungs during Lipopolysaccharide-Mediated Acute Lung Injury. *J Immunol.* 2023 Jun 15;210(12):2016-2028.

Older EA, Zhang J, Ferris ZE, Xue D, Zhong Z, Mitchell MK, Madden M, Wang Y, Chen H, Nagarkatti P, Nagarkatti M, Fan D, Ellermann M, Li YX, Li J. Biosynthetic Enzyme-guided Disease Correlation Connects Gut Microbial Metabolites Sulfonolipids to Inflammatory Bowel Disease Involving TLR4 Signaling. *bioRxiv.* 2023 May 2:2023.03.16.533047.

Mohammed AD, Ball RAW, Kubinak JL. The interplay between bile acids and mucosal adaptive immunity. *PLoS Pathog.* 2023 Jun 22;19(6):e1011356. doi: 10.1371/journal.ppat.1011356. PMID: 37347728; PMCID: PMC10286976.

Cunningham P, Unger CA, Patton E, Aiken A, Browne A, James E, Aladhami A, Hope MC 3rd, VanderVeen BN, Cardaci TD, Murphy EA, Enos RT, Velázquez KT. Platelet status in cancer cachexia progression in *ApcMin/+* mice. *Frontiers in Immunology.* 2023 Aug 28;14:1253587.

Presentations

Aladhami AK, Wilson KM, Carter T, Nagarkatti P, Nagarkatti M. Administration of delta-8-tetrahydrocannabinol improves pulmonary functions and attenuates immune cells infiltration in acute respiratory distress syndrome. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Kulangara VK, Nagarkatti P, Nagarkatti M. Characterization of gene alterations during Macrophage Activation Syndrome associated with central nervous system disorders. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Palrasu M, Kakar K, Aladhami AK, Carter T, Wilson KM, Zhong Y, Yang X, Singh NP, Busbee PB, Nagarkatti PS, Nagarkatti M. Indol-3-Carbinol ameliorates colitis in mice by AhR-mediated production of antimicrobial peptides and mucins. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Hamida H, Kakar K, Nagarkatti P, Nagarkatti M. Effect of delta-8-tetrahydrocannabinol (&[Delta]8-THC) in modulating immune response and gut microbial dysbiosis in concanavalin-induced acute liver injury. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Saxena A, Mitchell C, Staley S, Bogdan R, Roark K, Hailey M, Nagarkatti M, Nagarkatti PS, Busbee PB. Aryl hydrocarbon receptor regulates genes in colonic epithelial cells to mitigate colitis severity in the DSS-induced murine model. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Mitchell C, Saxena A, Hailey M, Roark K, Bogdon R, Staley S, Nagarkatti M, Nagarkatti PS, Busbee PB. Investigation of the aryl hydrocarbon receptor's role in colitis as it relates to observed disease-specific sex differences. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.


Staley S, Davis K, Pena M, Nagarkatti M, Nagarkatti P, Busbee PB. Role of Bacteroides acidifaciens in gut inflammation during colitis. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Bogdon R, Roark K, Saxena A, Mitchell C, Hailey M, Staley S, Busbee PB. Depressive-like behavior associated with colitis is altered after treatment with aryl hydrocarbon receptor ligand. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023.

Velazquez KT. Biomedical Research Seminar on Cachexia. Columbia Veterans Affairs Health Care System, South Carolina. June 28, 2023.

Wilson K, Nagarkatti PS, Nagarkatti M. Role of CCR2 in Staphylococcus Enterotoxin B-induced Acute Respiratory Distress Syndrome. American Association of Immunologists Annual Meeting, Washington DC, May 11-15, 2023. AAI Minority Scientist Travel Award.

Bawazir M, Amponnawarat A, Hui Y, Oskeritzian CA, Ali H. Inhibition of MRGPRX2 but not FceRI or MRGPRB2-mediated mast cell degranulation by a small molecule inverse receptor agonist. Joint European Mast Cell and Basophil Research Network - European Histamine Research Society Webinar, May 31, 2023.



Cardaci TD, VanderVeen BN, McDonald SJ, Bullard BM, Velazquez KT, Murphy EA. Obesity accelerated tumorigenesis and did not protect against murine cancer cachexia. Annual Meeting of the American College of Sports Medicine. Denver, CO, May 30 – June 2, 2023.

VanderVeen BN, Cardaci TD, Cunningham P, McDonald SJ, Bullard BM, Fan D, Murphy EA, Velázquez KT. Quercetin improved muscle mass and mitochondrial content with cancer and chemotherapy-induced cachexia. Annual Meeting of the American College of Sports Medicine. Denver, CO, May 30 – June 2, 2023.