



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: Dr. Angela Murphy, PhD & Nicki Holt

September - December 2019

P Honors & Awards

M Dr. Ioulia Chatzistamou was promoted to Clinical Associate Professor. Congratulations Dr. Chatzistamou!

I Drs. Mitzi and Prakash Nagarkatti received a 5-year R01 grant in the amount of \$2.5 million to study "Epigenetic Mechanisms in Transgenerational Effects of an Environmental Pollutant". This is the 10th R01 grant that has been funded to Drs. Nagarkatti since joining the SOM, approximately 15 years ago.

Dr. Carole Oskeritzian is the recipient of a Pilot Project entitled "Regulatory Roles of Resveratrol in Skin Inflammation." Dr. Oskeritzian serves as Pilot Project Principal Investigator (PI) for this one-year award from NIH/NIGMS COBRE (Center of Biomedical Research Excellence) on Dietary Supplements and Inflammation funded to Drs. Prakash and Mitzi Nagarkatti who serve as Co-PIs.

Dr. Angela Murphy and Dr. Lorne Hofseth (School of Pharmacy) received an R01 grant from the National Cancer Institute in the amount of \$1.8 million on "Harnessing the power of p53 with Panaxynol from American Ginseng to suppress colitis and prevent colon cancer".

Dr. Traci Testerman was awarded a Research Development Award from the Department of Veterans Affairs and UofSC SOM, entitled "Identification of novel enterohepatic Helicobacter species in the Veteran population".

Dr. Mitzi Nagarkatti serves as a Co-I on a 5-year R01 grant entitled "Control of Facial Amphiphilicity to Tune Macromolecular Interactions with Bacteria." The PI is Dr. Chuanbing Tang from the College of Arts and Sciences.

Dr. Carole Oskeritzian serves as PI of a four-year NIH/NIAID R01 sub-award entitled "Regulation of gene expression in the anaphylactic pathway" for collaborative work with Dr. Hua Huang from National Jewish Health.

Dr. Angela Murphy serves as a Co-Investigator of a new R01 from the National Cancer Institute in the amount of \$3.6 million to study "Role of Circadian Factors in Inflammation and Colorectal Adenoma Risk". Dr. Jim Burch (Epidemiology) is the PI on this award.

Dr. Narendra Singh received an *American Association of Immunologists Travel Award* to attend the 17th International Congress of Immunology Meeting, held in Beijing, China, October 19-23, 2019.

Dr. Catroppo was elected Chair of the SOM Library Committee for the 2019-2020 term.

For the sixth consecutive year, the SOM Medical Student Interest Group (MSIG) for Pathology (Faculty Advisor Dr. Catroppo; Co-Student Presidents M2 Students Sheena Amin, Julie Flugel, and George Birsic) was awarded an Intersociety Council for Pathology Information (ICPI) Margaret Grimes, MD Grant for the 2019-2020 Academic Year.



Dr. Swapan Ray has edited a new book in the Methods in Molecular Biology book series and it has recently been published: *Retinoid and Reginoid Signaling - Methods and Protocols* (ed. Ray SK), volume 2019, Springer Nature/Humana Press, New York, NY.

Madison Ryan, Pre-Med USC Capstone Scholar who joined the Oskeritzian Lab in February, was awarded a Magellan grant from the Office of Research in December to pursue her research on the effects of microRNA-34a on mouse and human mast cell functions.

A recent article in the UofSC Times highlighted the research accomplishments of Drs. Prakash and Mitzi Nagarkatti. The Nagarkattis have attracted over \$100 million in funding since joining the UofSC SOM.

News & Updates

Dr. Catroppo attended the University of South Carolina Center for Teaching Excellence (CTE) workshop "Addressing Common Violations", a required session for a certificate of completion in Fostering Proactive Learning Environments.

Dr. Swapan Ray served as a Scientist Reviewer for the grant applications submitted to the Congressionally Directed Medical Research Programs (CDMRP) for the fiscal year 2019 Brain Cancer Panel of the Peer Reviewed Cancer Research Program (PRCRP), Reston (a suburb of Washington, DC), November 17-19.

Dr. Prakash Nagarkatti hosted the 2019 26th NSF EPSCoR National Conference held at USC, October 27-30. The theme of the conference was "Science and Partnerships Across Disciplinary Boundaries". This meeting was attended by over 400 attendees from across the nation.

Dr. Carole Oskeritzian served as a grant reviewer for the NIH/NIAID Special Emphasis Panel- Atopic Dermatitis Research Network-Leadership Centers (UM1) held on December 5 in Potomac, MD.

Dr. Angela Murphy served as a reviewer for NIH/NCI Transition to Independence grants (K22) on November 19.

Dr. Mitzi Nagarkatti participated in the SmartState, SC Centers of Economic Excellence, Review Board Meeting November 10-11, 2019 in Greenville, SC.

Dr. Catroppo attended the University of South Carolina Center for Teaching Excellence (CTE) workshop "Living Your Best Teacher Life: Ideas for Invigorating, Engaging and Inspiring".

Dr. Angela Murphy served as a reviewer for NIH/NCI Transition to Independence (K99/R00) grants on October 23-24 in Washington DC.

Elisabeth M. Caldwell, a first year Master's student in Biomedical Science Applied Biotechnology Concentration, joined the Oskeritzian Lab in November to study the mechanism of action of resveratrol on mast cell activation.

Dr. Angela Murphy served as a reviewer a NIH/NCCIH Special Emphasis Panel, ZAT1 AJT (12) R, on September 25-26.

Dr. Prakash Nagarkatti presented at the SmartState, SC Centers of Economic Excellence, Review Board Meeting November 10-11, 2019 in Greenville, SC.

Dr. Carole Oskeritzian served as a grant reviewer for the NIH/NIAID Special Emphasis Panel- Atopic Dermatitis Research Network-Clinical Research Centers (U01) held on December 6 in Potomac, MD.

Dr. Mitzi Nagarkatti continues to serve as a regular member of NIH Systemic Injury by Environmental Exposure (SIEE) Study Section for reviewing grants. The last grant review meeting was on October 23-26, 2019 in San Francisco, CA.

Dr. Angela Murphy served as a Reviewer for an NIH/NCI Special Emphasis Panel (R01 and R21 grants) on October 7.



The PMI Department hosted a festive celebration for the annual Halloween potluck luncheon, October 31st. There were many delicious international dishes served and some very creative costumes. The annual potluck event was enjoyed by all.



The PMI Department joined together for the Annual Recognition & Appreciation Celebration Luncheon December 4th. The Columbia Museum of Art was the location of the celebration where everyone enjoyed a delicious lunch. Next on the agenda was the captivating Van Gogh Exhibit. All were enlightened and educated by the historic exhibit. PMI is a place where laughter is a constant, friendships are strong, and we always enjoy our time together.

Publications

Alrafas HR, Busbee PB, Nagarkatti M, Nagarkatti PS. Resveratrol Downregulates miR-31 to Promote T Regulatory Cells during Prevention of TNBS-Induced Colitis. *Mol Nutr Food Res*. 2020 Jan;64:e1900633.

Sarkar S, Alhasson F, Kimono D, Albadrani M, Seth RK, Xiao S, Porter DE, Scott GI, Brooks B, Nagarkatti M, Nagarkatti P, Chatterjee S. Microcystin exposure worsens nonalcoholic fatty liver disease associated ectopic glomerular toxicity via NOX-2-MIR21 axis. *Environ Toxicol Pharmacol*. 2020 Jan;73:103281.

Al-Ghezi ZZ, Singh N, Mehrpouya-Bahrami P, Busbee PB, Nagarkatti M, Nagarkatti PS. AhR Activation by TCDD (2,3,7,8-Tetrachlorodibenzo-p-dioxin) Attenuates Pertussis Toxin-Induced Inflammatory Responses by Differential Regulation of Tregs and Th17 Cells Through Specific Targeting by microRNA. *Front Microbiol*. 2019 Oct 18;10:2349.

Kimono D, Sarkar S, Albadrani M, Seth R, Bose D, Mondal A, Li Y, Kar AN, Nagarkatti M, Nagarkatti P, Sullivan K, Janulewicz P, Lasley S, Horner R, Klimas N, Chatterjee S. Dysbiosis-Associated Enteric Glial Cell Immune-Activation and Redox Imbalance Modulate Tight Junction Protein Expression in Gulf War Illness Pathology. *Front Physiol*. 2019 Oct 14;10:1229.

Yang X, Bam M, Nagarkatti PS, Nagarkatti M. Cannabidiol Regulates Gene Expression in Encephalitogenic T cells Using Histone Methylation and noncoding RNA during Experimental Autoimmune Encephalomyelitis. *Sci Rep*. 2019 Oct 31;9(1):15780.

Feng M, Kim J, Field K, Reid C, Chatzistamou I, Shim M. Aspirin ameliorates the long-term adverse effects of doxorubicin through suppression of cellular senescence. *FASEB BioAdvances*. 2019 1:579-590.

Mohammed AD, Khan W, Chatzistamou I, Chamseddine D, Williams-Kang K, Enos RT, Murphy EA, Gomez G, Oskeritzian CA, Jolly A, Chang Y, He S, Pan Z, Kubinak JL. Gut Antibody Deficiency in a Mouse Model of CVID Results in Spontaneous Development of a Gluten-Sensitive Enteropathy. *Frontiers in Immunology*. 2019 10:2484

Dasgupta S, Ray SK. Ceramide and sphingosine regulation of myelinogenesis: Targeting serine palmitoyltransferase using microRNA in multiple sclerosis. *Int J Mol Sci*. 2019 20:5031.

Ray SK. Nonradioactive and radioactive telomerase assays for detecting diminished telomerase activity in cancer cells after treatment with retinoid. *Methods Mol Biol*. 2019 257-273.

Almurshidi B, Carver W, Scott G, Ray SK. Roles of miRNAs in spinal cord injury and potential therapeutic interventions. *Neuroimmunol Neuroinflammation*. 2019 6:11.

Presentations

Dr. Traci Testerman presented a poster entitled “New models for studying pseudomyxoma peritonei in mice and in vitro” at the National Organization for Rare Diseases conference in Washington, D.C. in October.

Dr. Catroppo was the invited speaker at the USC SOM Medical Student Interest Group lunch meeting of 3 October 2019, offering a talk entitled “What Do Pathologists Do? The Role of the Pathologist in Modern Healthcare and a Career as ‘the Doctor’s Doctor’”.

Dr. Mitzi Nagarkatti was an invited speaker at the 7th Meeting of the International Drug Abuse Research Society (IDARS) Conference, September 2-6, 2019 in Casablanca, Morocco. The title of her presentation was “Is there a cross-talk between cannabinoids and microbiota that regulates inflammation.”

A video presentation by Dr. Michael Prystowsky, Chair of the Association of Pathology Chairs, Undergraduate Medical Education Committee and Professor and Chair of the Department of Pathology at the Albert Einstein College of Medicine, entitled “Pathology Education: From Medical School to Practicing Pathologist”, was offered at the USC SOM Medical Student Interest Group lunch meeting of 21 October 2019.

On 19 November 2019, in celebration of International Pathology Day, Dr. Robert Startz delivered a lunch talk entitled “The Business of Pathology (AKA ‘Show Me The Money!’): Pathology as a Career Choice” to the USC SOM Medical Student Interest Group for Pathology.

Dr. Prakash Nagarkatti was also an invited speaker at the 7th Meeting of the International Drug Abuse Research Society (IDARS) Conference, September 2-6, 2019 in Casablanca, Morocco. The title of his presentation was “Epigenetic Regulation of Immune Response by Marijuana Cannabinoids.”

Dr. Narendra Singh presented the paper titled “Resveratrol ameliorates lupus through differential generation of Tregs and Th17 cells by epigenetic modifications of FoxP3 and IL-17 genes” at the 17th International Congress of Immunology Meeting, held in Beijing, China, October 19-23, 2019. The authors were Narendra Singh, Udai Singh, Mitzi Nagarkatti and Prakash Nagarkatti. Dr. Singh was the recipient of AAI Travel Award.

Zhang Y, Lim C, Chatzistamou I, Kiaris H. Variations of Unfolded Protein Response in Deer Mouse Fibroblasts Indicate Susceptibility to Metaflammation. 26th NSF EPSCoR National Conference, Columbia SC, October 27-30, 2019.

Soltanmohammadi E, Kaza V, Chatzistamou I, Kiaris H. Regulation of the unfolded protein response during aging in short-living and long-living species of deer mice. 26th NSF EPSCoR National Conference, Columbia SC, October 27-30, 2019.