



# 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

January - April 2020

## **P** Honors & Awards

**M**

Dr. Reilly Enos received a K01 award from the National Center for Integrative and Complementary Health (NCCIH) titled: 8-Prenylningerinin: a natural therapy for estrogen deficiency in obesity (1K01AT010348). This is a 5-year award for over \$700K. Congratulations Dr. Enos!

**I**

Dr. Lorne Hofseth (Pharmacy) and Dr. Angela Murphy received a Multi PI R01 grant from the National Cancer Institute (NCI) titled: Harnessing the power of p53 with Panaxynol from American Ginseng to suppress colitis and prevent colon cancer (R01CA246809). This is a 5-year award in the amount of \$1,733,990.

Alkeiver Cannon, Nagarkatti lab, was awarded a Research Supplement for graduate studies from the National Institute of Allergy and Infectious Diseases (NIAID), NIH. The grant is titled: AhR ligands in epigenetic dysregulation of T cells. Congrats Alkeiver!

Dr. Philip Brandon Busbee received the 2020 AAI Early Career Faculty Travel Grant to attend the American Association of Immunologists (AAI) meeting in Honolulu, Hawaii for his abstract entitled "Indole-3-carbinol prevents colitis and regulates microbial dysbiosis by induction of anti-microbial peptides and mucins in an IL-22 dependent manner" on May 7-12, 2020.

Dr. Brandon VanderVeen (Murphy Lab) received a postdoctoral ASPIRE award from the UofSC Office of VPR. Brandon's grant is titled: Emodin as a complementary dietary therapy targeting chemotherapy-induced wasting.

Alex Sougiannis (Murphy Lab) received the Experimental Pathologist-in-Graduate-Training (EPIGT) Merit Award 2020 from the American Society for Investigative Pathology.

Dr. Angela Murphy and colleagues received an ASPIRE Integration award from the Office of the VPR for \$100,000. The grant is titled: Mechanisms of early onset colorectal cancer (EOCRC).

Dr. Traci Testerman was awarded the UofSC COVID-19 Research Initiative, titled "Assessing efficacy and toxicity of misty plasma systems for disinfecting personal protective equipment".

Dr. Mitzi Nagarkatti was a Co-I on a UofSC Big Data Health Science Center grant for 2 years to Drs. Guoshuai Cai and Dr. Feifei Xiao from School of Public Health for their pilot project titled "Big Genomics Data Analysis to characterize TME methylation expression regulatory axis in Colorectal Tumors.

Dr. Mitzi Nagarkatti was also a Co-I on a grant through UofSC COVID-19 Research Initiative with Dr. Guoshuai Cai and Dr. Feifei Xiao from School of Public Health for their grant titled "COVID-19 severe progression prediction with artificial intelligence approaches from multi-dimensional data."

Yvone Shametaj (Velázquez Lab), Baccalaureus Artium et Scientiae-MD honor student was awarded a Magellan grant to study the "Involvement of macrophage-produced tumor necrosis factor alpha on the initiation of tumor burden in a mouse model of colorectal cancer". Yvone will be mentored by Dr. Velázquez.

Nour Shams (Velázquez Lab), Biochemistry and Molecular Biology honors student, was awarded a Magellan grant to study the "Involvement of macrophage-produced tumor necrosis factor alpha on the progression of tumor burden in a mouse model of colorectal cancer". Nour will be mentored by Dr. Velázquez.

Dr. Kathryn Miranda, PhD, (Nagarkatti lab) received the 2020 Society of Toxicology (SOT) Postdoctoral Excellence Award from the Ethical, Legal, Forensics, and Societal Issues Specialty Section, Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. Kathryn Miranda, Prakash S. Nagarkatti, and Mitzi Nagarkatti, Mechanisms of Cannabidiol-induced immunosuppression mediated by myeloid-derived suppressor cells

Dr. Kathryn Miranda, PhD (Nagarkatti lab) received the Best Manuscript Award, from the Society of Toxicology (SOT) Occupational and Public Health Specialty Section March 2020. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. Miranda K, Mehrpouya-Bahrami P, Nagarkatti PS, Nagarkatti M. Cannabinoid Receptor 1 Blockade Attenuates Obesity and Adipose Tissue Type 1 Inflammation Through miR-30e-5p Regulation of Delta-Like-4 in Macrophages and Consequently Downregulation of Th1 Cells. *Front Immunol.* 2019;10:1049. Published 2019 May 10. doi:10.3389/fimmu.2019.01049

Dr. Kathryn Miranda, PhD (Nagarkatti lab) received the Postdoctoral Representative Award, from the Society of Toxicology, (SOT) Mechanisms Specialty Section, March 2020. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Congratulations to Drs. Chris Shidal, Narendra Singh, Prakash Nagarkatti and Mitzi Nagarkatti for their paper titled "MicroRNA-92 Expression in CD133 + Melanoma Stem Cells Regulates Immunosuppression in the Tumor Microenvironment via Integrin-Dependent Activation of TGFβ" 2019 Jul 15;79(14):3622-3635. doi: 10.1158/0008-5472.CAN-18-2659. Epub 2019 Apr 23 which was selected for "Paper of the Year Award" by the Drug Discovery Toxicology Specialty Section, Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Bryan Holloman, PhD student Nagarkatti lab, was awarded the UofSC Graduate Civic Scholarship Program (GCSP).

Congratulations to Dr. Philip Brandon Busbee for being selected by the M2 Medical Student Class as the 2020 Teacher of the Year.

Congratulations to Alex Sougiannis (Murphy Lab) for receiving a Breakthrough Scholar Award from the Office of the VPR.

Congratulations to Alkeiver Cannon, PhD student in Nagarkatti lab, Keivy was the Biomedical Sciences aspiring scientist chosen for an article "Through Their Lens". This article was in the Garnet Microscope Newsletter, Jan 2020.

Dr. Hasan Alghetaa, PDF Dr. Nagarkatti's lab, was selected to be Chairperson of the Neurotoxicity session, Society of Toxicology, Anaheim, CA, March 15-19, 2020.

Dr. Hasan Alghetaa, PhD, (Nagarkatti lab) received a recognition and appreciation plaque from the Arab Toxicologist Association Special Interest Group (ATA-SIG) for being instrumental in founding this group in 2019 at the Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. Dr. Alghetaa was also elected as President of ATA for 2020-2021 year.

Dr. Courtney Culpepper received the AAI Trainee Abstract Award to attend the Annual AAI Meeting. Authors include: Culpepper CD, Miranda K, Wilson K, Nagarkatti PS, Nagarkatti M. The title of the presentation is as follows: Epigenetic regulation of C-Kit<sup>1</sup> FcER1a+ mast cells by cannabidiol during staphylococcal enterotoxin B-induced liver injury. The American Association of Immunologist Annual Meeting, Honolulu, HI, May 7-12, 2020.

Emma Patton (Velázquez Lab), Biology student, was awarded a Magellan grant to study the "Effects of Ojeok-san on pain-like behaviors in a mouse model of colitis". Emma will be mentored by Dr. Velázquez.

Michael Keller (Chatzistamou Lab), an undergraduate student in Exercise Science, was awarded a Magellan grant from the USC Office of Research to pursue his research on polymorphisms in unfolded protein response-associated genes. Michael will be mentored by Dr. Chatzistamou.

Alex Sougiannis received a travel award to attend the 2020 Experimental Biology Meeting, San Diego CA.

Muthanna Sultan, graduate student in Dr. Nagarkatti's lab, was awarded the 2020 Graduate Student Achievement Award, Biotechnology Specialty Section of Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. Sultan M, Prakash Nagarkatti P, Nagarkatti M. Endocannabinoids (Anandamide) attenuate Staphylococcal enterotoxin B (SEB)-mediated acute lung injury through regulation of micro-RNA that target the induction of Myeloid Derived Suppressor Cells and T regulatory cells.

Muthanna Sultan, graduate student (Nagarkatti lab) is the SOT Graduate Student Representative for Biotechnology Specialty Section (BTSS) of Society of Toxicology 2019 - present.

Muthanna Sultan graduate student, (Nagarkatti lab) was the session chair for Immunotoxicology poster session at Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Muthanna Sultan, graduate student, (Nagarkatti lab) hosted the Graduate Student Leadership Committee (GSLC) at the Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Muthanna Sultan, graduate student, (Nagarkatti lab) served on the Proposal Review Committee, Biotechnology Specialty Section (BTSS) at Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Congratulations to the following award winners at the Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on Feb 12, 2020:

**PDF Awards:**

Dr. Hasan Alghetaa, Dr. Nagarkatti's lab, 1<sup>st</sup> place poster award winner. Hasan also was the recipient of \$100.00 award.

Dr. Kathryn Miranda, Dr. Nagarkatti's lab, 3<sup>rd</sup> place poster award winner. Kathryn also was the recipient of \$75.00 award.

**Graduate Student Awards:**

Alexander Sougiannis, graduate student from Dr. Angela Murphy's lab, 1<sup>st</sup> place graduate student poster award winner. Alexander was the recipient of \$100.00 award.

Osama Abdulla, graduate student from Dr. Nagarkatti's lab, 2<sup>nd</sup> place graduate student poster award winner. Osama was the recipient of \$75.00.

Alkeiver Cannon, graduate student from Dr. Nagarkatti's lab, 3<sup>rd</sup> place graduate student poster award winner. Alkeiver was the recipient of \$50.00.

Dr. Courtney Culpepper received the Mechanisms Specialty Section Postdoctoral Student Travel Award to attend the Annual SOT Meeting. Authors include: Culpepper CD, Miranda K, Wilson K, Nagarkatti PS, and Nagarkatti M. The title of the presentation is as follows: Cannabidiol regulated microRNAs promote mast cell signaling via peroxisome proliferator-activated receptor- $\gamma$  to protect against staphylococcal enterotoxin B-induced liver injury. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Alex Sougiannis (Murphy lab) received the Dean Barnhart award from the School of Medicine.

Dr. Hasan Alghetaa received a recognition and appreciation plaque from the Arab Toxicologist Association Special Interest Group (ATA-SIG) as part of the Society of Toxicology for being instrumental in founding this group in 2019. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Dr. Hasan Alghetaa, PDF in Dr. Nagarkatti's lab, was elected by ~97% of the Arab Toxicologist Association (ATA) members to be President of Arab Toxicologist Association Special Interest Group (ATA – SIG) for 2020/2021.

Amira Mohammed, graduate student in Dr. Nagarkatti's lab, received a recognition and appreciation plaque from the Arab Toxicologist Association Special Interest Group (ATA-SIG) as part of Society of Toxicology for being part of founding this group in 2019. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. She was elected as Councilor of ATA for 2nd year 2020-2021.

Congratulations to Alkeiver Cannon, graduate student Nagarkatti lab, who received the SOT Graduate Student Travel Support Award. Authors include: Cannon A, Nagarkatti PS, and Nagarkatti M. The title of the presentation is as follows: Treatment with AhR Ligands Modulates Concanavalin-Induced T Cell-Mediated Liver Injury by miRNA Dysregulation. Society of Toxicology, Anaheim, CA, March 15-19, 2020.

Alkeiver Cannon, graduate student (Nagarkatti lab) also received the Toxicologists of African Origin (TAO) Endowment Fund Award from the Society of Toxicology, (SOT), March 2020. Society of Toxicology, Anaheim, CA, March 15-19, 2020.

Alkeiver Cannon, graduate student (Nagarkatti lab) also received the Drug Discovery Toxicology Specialty Section Student Competition - 3rd Place from the Society of Toxicology, (SOT), March 2020. Society of Toxicology, Anaheim, CA, March 15-19, 2020.

Alex Sougiannis (Murphy Lab) received the Dr. William M. McCord Medical Scholarship and the Alumni Loyalty Award to attend medical school at MUSC in the fall of 2020. Congratulations Alex!

Alex Sougiannis (Murphy lab) received an Andrew Sorseson Scholarship from the Center for Colon Cancer Research. Jackie received \$5,000 with this award.

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## **News & Updates**

Dr. Prakash Nagarkatti, PhD, was featured in USA Today titled 'Early success of COVID-19 vaccine candidates fuels optimism, but experts warn 'a lot has to go right'. USA TODAY created a panel of experts to estimate how far we are from when a COVID-19 vaccine will be available to all Americans. <https://www.usatoday.com/in-depth/news/health/2020/07/23/covid-vaccine-race-early-success-fuels-cautious-optimism-panel-finds/5480173002/>

Dr. Prakash Nagarkatti, PhD, was also featured in Charleston City Paper, titled 'A coronavirus vaccine is in the works, but will people take it?' Getting the Shot, By Lindsay Street. Dr. Prakash Nagarkatti is a leading expert in the COVID vaccine research. <https://www.charlestoncitypaper.com/charleston/a-coronavirus-vaccine-is-in-the-works-but-will-people-take-it/Content?oid=31988673>

Drs. Prakash and Mitzi Nagarkatti organized the Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Tina Akers, Business Manager of PMI announced her pending retirement for July 5, 2020. Tina has worked in the PMI department for 8 years. Tina has worked for the state for 23 years. She will be greatly missed.

Shanieka Staley, a former employee at Nephron Pharmaceuticals, recently joined the lab of Dr. Philip Brandon Busbee as a lab technician. Shanieka received her undergraduate degree from Winthrop University and was an NIH-funded PREP scholar at the University of South Carolina. Welcome Shanieka to the PMI Department!

Dr. Carole Oskeritzian served as a grant reviewer for the United States-Israel Binational Science Foundation, held on March 14, 2020, Jerusalem, Israel.

Dr. Angela Murphy served as a grant reviewer for NIH/NIDDK Nutrition and Obesity Research Centers on March 9 and 10, 2020.

Drs. Mitzi and Prakash Nagarkatti authored an article titled "What does 'Survival of the fittest' mean in the coronavirus pandemic? Look to the immune system". This article was featured on The Conversation April 29, 2020 and metrics indicate there were 63,438 readers with 5<sup>th</sup> highest readership of articles published by investigators from UofSC.

Dr. Velázquez was selected to serve as Faculty Advisor for the Postdoctoral Association Jan-May 2020.

Dr. James F. Catroppo attended University of South Carolina Center for Teaching Excellence (CTE) workshops on "Communicating Expectations and Remote Teaching Etiquette", "Deliver: Teaching An Online Course", "Develop: Building An Online Course", "Design: Planning An Online Course", and "Developing A Syllabus In This New Reality" (January–April 2020).

Chandani Mitchell, a Ph.D. graduate student, joined the lab of Dr. Philip Brandon Busbee in April 2020. Chandani's research will be on investigating the host immune response to altered gut microbiome in colitis and colorectal cancer. Welcome Chandani to the PMI Department!

Dr. James F. Catroppo attended University of South Carolina Center for Teaching Excellence (CTE) workshops on "Promoting Academic Integrity In The Online Environment", "Recognizing And Reporting Hazing", "Dealing With Unexpected Classroom Disruptions", "Promoting Academic Integrity and Responding to Student Disruptions", and "Setting Classroom Expectations and Creating a Sense of Belonging", toward satisfying the requirements for a certificate of completion in Fostering Proactive Learning Environments (January–April 2020).

On March 4, the Medical Student Interest Group for Pathology hosted a lunch presentation given by Dr. Christopher Sullivan, a first-year resident in the MUSC Pathology Residency Program, who discussed his experiences as a pathology resident as well as the NRMP Match process.

Dr. Angela Murphy served as a reviewer for NIH/NCI Transition to Independence K99/R00 applications on February 20 and 21, 2020.

Dr. James F. Catroppo was accepted for admission into the competitive University of South Carolina Center for Teaching Excellence (CTE) Communities of Practice distributed asynchronous online course "Getting Started Teaching Online At UofSC: Best Practices For Teaching In An Asynchronous Online Environment" (May 11–June 7, 2020), upon successful completion of which the enrollee will receive a \$500 spending grant and certificate of completion.

Dr. Velázquez attended the University of South Carolina for Teaching Excellence (CTE) workshop "New Faculty Academy: Research and Teaching Services at University Libraries" on February 13, 2020.

Dr. Mitzi Nagarkatti reviewed grants for the NIH Systemic Injury by Environmental Exposure (SIEE) Study Section as a standing member from February 20-21, 2020 in Alexandria, VA.

Dr. James F. Catroppo was elected to serve a three-year term (Summer 2020-2023) on the University of South Carolina Committee on Libraries.

Dr. Velázquez served as a reviewer for the *Journal of Carcinogenesis*, March 2020.

Dr. Velázquez served as a reviewer for the *Journal of Pharmacology and Experimental Therapeutics*, January 2020.

Dr. Carole Oskeritzian and Dr. John Fuseler, together with several current and past members of the Oskeritzian laboratory and Dr. Frank Berger, have filed a US patent application entitled: "Early Detection of Colorectal Cancer" - Application No.: 16/720,309.

Dr. Paul J Wisniewski, PhD, has joined Dr. Nagarkatti's lab. PJ is an exercise physiologist who received his Ph.D. in Kinesiology and Applied Physiology from Rutgers University in New Jersey. His doctoral work focused on the anti-inflammatory aspects of endurance exercise in the preservation of colon health in the context of diet-induced obesity. As such, he is most passionate about promoting intestinal health and treating intestinal disorders through lifestyle interventions.

The following PMI faculty served as judges for the poster presentations at the Annual CAM (Center for Epigenetic Regulation of Inflammation) and COBRE (Center for Dietary Supplements and Inflammation) External Advisory Committee Meeting, Wednesday, February 12, 2020.

- Angela Murphy, PhD
- Alexa Gandy, PhD
- Ioulia Chatzistamou, MD, PhD
- Kandy Velázquez, PhD
- Swapam Ray, PhD

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## **Publications**

Steck SE, Murphy EA. Dietary Patterns and Cancer Risk. *Nature Reviews Cancer*. 2020 Feb;20(2):125-138.

Busbee PB, Menzel L, Alrafas HR, Dopkins N, Becker, W, Miranda K, Tang C, Chatterjee S, Singh U, Nagarkatti M, Nagarkatti PS. Indole-3-carbinol prevents colitis and associated microbial dysbiosis in an IL-22-dependent manner. *JCI Insight*. 2020 Jan16;5(1).

Shidal S., Singh NP, Nagarkatti P., Nagarkatti M. MicroRNA-92 Expression in CD133 + Melanoma Stem Cells Regulates Immunosuppression in the Tumor Microenvironment via Integrin-Dependent Activation of TGFβ. 2019 Jul 15;79(14):3622-3635. doi: 10.1158/0008-5472.CAN-18-2659. Epub 2019 Apr 23.

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(1):e1900633.

Alkarkoushi RR, Hui Y, Singh U, Mohammed A, Nagarkatti P, Nagarkatti M, Alrafas H, Bam M, Chatzistamou I, Testerman T. *Helicobacter muridarum* infection induces a similar immune, histological, and microRNA response to that induced by dextran sulfate sodium but does not alter the response to indole-3-carbinol. *World J Gastro*. 2020; In press.

Lawson PA, Patel NB, Smith P, Moore ERB, Lo AS, Sardi A, Davis JM, Mohammed A, Hui Y, Testerman TL. *Parapseudoflavitalea muciniphila* gen. nov., sp. nov. a member of the family *Chitinophagaceae* isolated from a human peritoneal tumor. Reclassification of *Pseudobacter ginsenosidimutans* as *Pseudoflavitalea ginsenosidimutans* comb. nov. *IJSEM*. 2020; In press.

Xavier JB, Young VB, Skufca J, Ginty F, Testerman T, Pearson AT, Macklin P, Mitchell A, Shmulevich I, Xie L, Caparoso JG, Crandall KA, Simone NL, Godoy-Vitorino F, Griffin TJ, Whiteson KL, Gustafson HH, Slade DJ, Schmidt TM, Walther-Antonio MRS,

- Korem T, Webb-Robertson BJ, Styczynski MP, Johnson WE, Jobin C, Ridlon JM, Koh AY, Yu M, Kelly L, Wargo JA. The Cancer Microbiome: Distinguishing Direct and Indirect Effects Requires a Systemic View. *Trends in Cancer*. 2020; 6(3): 192-204.
- Rahman MA, Jui MS, Bam M, Cha Y, Luat E, Alabresm A, Nagarkatti M, Decho AW, Tang C. Facial Amphiphilicity-Induced Polymer Nanostructures for Antimicrobial Applications. *ACS Appl Mater Interfaces*. 2020 Jan 15; In Press.
- 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.
- Zhang Y, Chatzistamou I, Kiaris H. Identification of frailty-associated genes by coordination analysis of gene expression. *Aging*. 2020;12(5):4222-4229.
- Khathayer F, Taylor MA, Ray SK. Synergism of 4HPR and SAHA increases anti-tumor actions in glioblastoma cells. *Apoptosis*. 2020;25: 217-232.
- Ray SK. Modulation of autophagy for neuroprotection and functional recovery in traumatic spinal cord injury. *Neural Regen Res*. 2020;15:1601-1612.
- Al-Sammarraie N, Ray SK. Bone morphogenic protein signaling in spinal cord injury. *Neuroimmunol Neuroinflammation*. 2020; In press.
- Callahan BN, Kammala AK, Syed M, Yang C, Occhiuto CJ, Nellutla R, Chumanevich AP, Oskeritzian CA, Das R, Subramanian H. Osthole, a natural plant derivative inhibits MRGPRX2-induced mast cell responses. *Front Immunol*. 2020 Apr 24;11:703.
- Turner-McGrievy G, Wilcox S, Frongillo E, Murphy EA, Hutto B, Williams K, Crimmarco A, Wilson M, Davey M. The Nutritious Eating with Soul (NEW Soul) Study: Study design and methods of a two-year randomized trial comparing culturally adapted soul food vegan vs. omnivorous diets among African American adults as risk for heart disease. *Contemporary Clinical Trials*. 2020 Jan;88:105897.
- Wirth MD, Robinson CM, Murphy EA, Shivappa N, Hebert JR. The Dietary Inflammatory Index is Associated with Gastrointestinal Infection Symptoms in the National Health and Nutrition Examination Survey. *International Journal of Food Sciences and Nutrition*. 2020 Feb;71(1):106-115.
- Zheng J, Tabung FK, Zhang J, Murphy EA, Shivappa N, Ockene JK, Caan B, Kroenke CH, Hébert JR, Steck SE. Post-cancer diagnosis dietary inflammatory potential is associated with survival among women diagnosed with colorectal cancer in the Women's Health Initiative. *Eur J Nutr*. 2020 Apr;59(3):965-977.
- Adams SA, Babatunde O, Truman S, Sercy E, Murphy EA, Khan S, Hurley TG, Wirth MD, Choi SK, Johnson H, Hebert JR. The Impact of a Randomized Dietary and Physical Activity Intervention on Chronic Inflammation among Obese African-American Women. *Women and Health*. 2020 Apr 5;1-14.

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## **Presentations**

Dr. Velázquez was the invited speaker at the Postdoctoral Association Seminar Series on March 11, 2020. Title of the presentation was "How to prepare for a faculty position interview?"

Culpepper CD, Miranda K, Wilson K, Nagarkatti PS, Nagarkatti M. Epigenetic regulation of C-Kit<sup>int</sup> FcεR1<sup>int</sup> mast cells by cannabidiol during staphylococcal enterotoxin B-induced liver injury. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Al-Sammarraie N, Ray SK. The interplay between calcium signaling and autophagy in spinal cord injury. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Khathayer F, Ray SK. The isotype-selective histone deacetylase inhibitor mocetinostat (MGCD0103) suppressed growth and induced apoptosis in C6 and T98G glioblastoma cells. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Mohammed A, Alghetaa H, Nagarkatti M, Nagarkatti PS. Protective effects of sodium butyrate resulted from reconstruction of altered gut microbiota mediated by SEB-induced acute lung injury. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Wilson K, Miranda K, Kaul M, Nagarkatti PS, Nagarkatti M. Single cell profiling illustrates down-regulation of GM42031 in macrophages and microglia as a potential mechanism of neuroinflammation in transgenic GFAP-gp120 mice. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Vanderveen BN, Sougiannis AT, Murphy EA. The effects of low dose chemotherapeutic 5FU on skeletal muscle immune cell population in male C57BL/6 mice. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Sougiannis AT, Vanderveen BN, Kelly B, Velazquez KT, Enos RT, Chatzistamou I, Pena MM, Nagarkatti M, Fan D, Murphy EA. Emodin, a natural anthraquinone, may help protect gastrointestinal health during chemotherapy treatment. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Oskeritzian CA. Regulatory Roles of Resveratrol in Skin Inflammation. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Alghetaa H, Mohammed A, Nagarkatti M, Nagarkatti P. Resveratrol-induced FoxP3—regulatory T cell subset, Th3, alleviates acute lung injury induced by Staphylococcal enterotoxin-B (SEB). Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Neamah, W., Rutkovsky, A., Nagarkatti, P. and Nagarkatti, M. Resveratrol inhibits TCDD-mediated induction and functions of myeloid-derived suppressor cells. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Miranda, K., Culpepper, C., Wilson, K., Nagarkatti, P., and Nagarkatti, M. Cannabidiol alters macrophage differentiation resulting in accumulation of immunosuppressive myeloid cells and dendritic cells. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Mohammed AD., Chatzistamou I., Roland M., Jolly A., Schoettmer L., Mohammed Z., Nagarkatti M., Nagarkatti P., and Kubinak JL. Does Dysbiosis Drive CVID Enteropathy by Enhancing Bile Acid Cytotoxicity? Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Cannon, A., Nagarkatti, P. and Nagarkatti, M. Treatment with AhR Ligands Modulates Concanavalin-Induced T Cell-Mediated Liver Injury by miRNA Dysregulation. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Holloman B., Nagarkatti P., and Nagarkatti M. Treatment with natural AhR ligand leads to amelioration of LPS-induced acute lung injury by decreasing microRNA 29b-2-5p expression targeting increased IL-22 production. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Dopkins N., Wilson K., Miranda K., Nagarkatti P. and Nagarkatti M. CBD treatment in EAE shapes the immune response of myeloid cells within the CNS. Annual NIH CAM Center for Epigenetic Regulation of Inflammation & NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting on February 12, 2020.

Culpepper CD, Miranda K, Wilson K, Nagarkatti PS, Nagarkatti M. Cannabidiol regulated microRNAs promote mast cell signaling via peroxisome proliferator-activated receptor- $\gamma$  to protect against staphylococcal enterotoxin B-induced liver injury. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. **Postdoctoral Student Travel Award.**

Alghetaa H, Mohammed A, Wilson K, Nagarkatti M, Nagarkatti P. Single cell RNA Sequencing reveals metabolic cell reprogramming in inflammatory cells in SEB-induced acute lung injured mice treated with resveratrol via Ahr-miR-100-axis. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020.

Cannon A, Nagarkatti PS, Nagarkatti M. Treatment with AhR Ligands Modulates Concanavalin-Induced T Cell-Mediated Liver Injury by miRNA Dysregulation. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. **Selected for Platform Presentation. Graduate Student Travel Award**

Mohammed AK, Alghetaa H, Wilson K, Nagarkatti PS, Nagarkatti M. Single cell RNA sequencing and mouse transcriptome analysis show amelioration of SEB-induced lung injury via altering metabolomes of THC-treated mice. Society of Toxicology, Anaheim, CA, March 15-19, 2020.

Alghetaa H, Mohammed A, Nagarkatti M, Nagarkatti PS. Gut Dysbiosis and Immunological Profile in Endometriosis. Discover USC Day, Columbia, SC, April 17, 2020.

Sougiannis AT, Vanderveen BN, Kelly B, Velazquez KT, Enos RT, Chatzistamou I, Pena MM, Nagarkatti M, Fan D, Murphy EA. Natural Anthraquinone Emodin May Protect Immune and Gastrointestinal Health During Chemotherapy Treatment. Experimental Biology, San Diego CA, April 4-7, 2020.

Sougiannis AT, Vanderveen BN, Cranford TL, Enos RT, Velazquez KT, McDonald S, Chatzistamou I, Fan D, Murphy EA. Weight Cycling Creates an Obesogenic Memory in Adipose Tissue Which Exacerbates the Inflammatory Response to Obesity. Experimental Biology, San Diego CA, April 4-7, 2020.

Bernhart JA, Turner-McGrievy G, Eustis S, Wilcox S, Frongillo E, Murphy EA, Wilson M, Hutto B. Relationships between objectively measured physical activity and cardiovascular disease risk factors in African Americans in The Nutritious Eating with Soul study. Clyburn Lecture Series, Columbia, SC, April 2020.

Shidal S., Singh NP, Nagarkatti P., Nagarkatti M. MicroRNA-92 Expression in CD133 + Melanoma Stem Cells Regulates Immunosuppression in the Tumor Microenvironment via Integrin-Dependent Activation of TGF $\beta$ . Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. **Paper of the Year Award**

Miranda K, Nagarkatti P, and Nagarkatti M. Mechanisms of Cannabidiol-induced immunosuppression mediated by myeloid-derived suppressor cells. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. **Postdoctoral Excellence Award.**

Miranda K, Mehrpouya-Bahrami P, Nagarkatti PS, Nagarkatti M. Cannabinoid Receptor 1 Blockade Attenuates Obesity and Adipose Tissue Type 1 Inflammation Through miR-30e-5p Regulation of Delta-Like-4 in Macrophages and Consequently Downregulation of Th1 Cells. Front Immunol. 2019;10:1049. Published 2019 May 10. doi:10.3389/fimmu.2019.01049, Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. **Best Manuscript Award.**

Sultan M, Prakash Nagarkatti P, Nagarkatti M. Endocannabinoids (Anandamide) attenuate Staphylococcal enterotoxin B (SEB)-mediated acute lung injury through regulation of micro-RNA that target the induction of Myeloid Derived Suppressor Cells and T regulatory cells. Society of Toxicology Annual Meeting, Anaheim, CA, March 15-19, 2020. **Graduate Student Achievement Award.**