

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



January - April 2024

P Honors & Awards

M Dr. Angela Murphy received the 2024 Distinguished Research Service Award from the office of the VPR.

I Dr. Christian Unger and Dr. Angela Murphy received an administrative supplement associated with NCI funded U01 project - A Transdisciplinary Approach to Investigating Metabolic Dysregulation in Obese Parent and Child Dyads and Risk of Colorectal Cancer. The award totaling 502K started March 1, 2024, and will end June 30, 2027.

Dr. Taylor Carter, a Postdoctoral Fellow in Nagarkatti lab was one of the winners of the Drug Discovery Toxicology Specialty Section (DDTSS) Postdoctoral Poster Competition at the Society of Toxicology Annual Meeting, Salt Lake City, UT, March 10-14, 2024. Carter TH, Nagarkatti M, Nagarkatti PS. Delta-9-Tetrahydrocannabinol attenuates macrophage differentiation through downregulation of intra-cellular Reactive Oxygen Species.

Chloe Weyer-Nichols, a grad student in the Nagarkatti lab was awarded the Regulatory and Safety Evaluation Specialty Section Graduate Student Excellence Award at the Society of Toxicology Annual Meeting, Salt Lake City, UT, March 10 -14, 2024. Weyer C, Aladhami A, Carter T, Nagarkatti P, Nagarkatti M. Single-cell RNA Sequencing Reveals Mechanisms of TCDD-mediated Attenuation of Acute Respiratory Distress Syndrome Through Down-regulating Chemokines and Their Receptors on Myeloid Cells in the Lungs.

Dr. Swapan Ray's undergraduate research student, Ahalya Muraleedharan, currently an Honors College Senior, has been awarded the "2024 Dwight Camper Outstanding Undergraduate Research Award" (only one award per year in the State of South Carolina) at the Annual Meeting of the South Carolina Academy of Science on March 23, 2024, Charleston, SC.

Dr. Philip Brandon Busbee received the Patriot Award from the South Carolina Employer Support of the Guard and Reserve (ESGR) on March 20, 2024.

Dr. Carole Oskeritzian served as a grant reviewer (R01s and R21s) for the NIH/NIAID/NHLBI Hypersensitivity, Allergies and Mucosal Immunology (HAMI) - ZRG1 IIDA-F (57) virtual study section on February 8, 2024.

Dr. Carole Oskeritzian was invited to serve as a grant reviewer (R01s and U2Cs) for two NIH/NIAID/NEI/NIEHS Special small Emphasis Panels, ZES1 LWJ-D CA 1 and ZES1 LWJ-D CP, entitled "*Chemical Threat Agent-induced Pulmonary and Ocular Pathophysiological Mechanisms (R01 Clinical Trial Not Allowed)*" and a new NOFO ([ES23-009](#)) establishing a Coordinating Core entitled: *Chemical Threat Agent Exposure Resource and Coordination Core (ExRC) (U2C Clinical Trial Not Allowed)*", on February 21-22.

Dr. Angela Murphy served as a reviewer for NIH/NCI Transition to Independence awards on February 15-16, 2024.

Dr. Archana Saxena, a postdoc in Dr. Busbee's lab, accepted a Research Instructor position at the Warren Alpert Medical School of Brown University working in the research laboratory of Dr. Alexander Raufi. Congratulations Archana!

Dr. Christian Unger won First Place at the 2024 USC Discover Day, Postdoctoral Scholarship Awards, “Estrogen and its Receptor in Male Liver Glucose Metabolism: A Balancing Act in Diet-Induced Obesity” USC Discover Day, Columbia, SC, April 19, 2024.

Dr. Rohan Gupta (Nagarkatti lab) won Second Place at the 2024 USC Discover Day, Postdoctoral Scholarship Awards, “Integrative Bioinformatic Analysis of Diagnostic and therapeutic Markers of Post-Traumatic Stress Disorders and Associated Comorbidities”, USC Discover Day, Columbia, SC, April 19, 2024.

Dr. Taylor Carter (Nagarkatti lab) won First Place at the 2024 USC Discover Day, Postdoctoral Scholarship Awards, “Delta-9-Tetrahydrocannabinol Attenuates Macrophage Differentiation through Downregulation of Intra-Cellular Reactive Oxygen Species”, USC Discover Day, Columbia SC, April 19, 2024.

Congratulations to Ray Bogdon, (Busbee lab) for winning a Graduate Student Award at the 2024 USC Discover Day, Columbia, SC, April 19, 2024.

Dr. Prakash Nagarkatti provided testimony April 23, 2024, to the House Medical Cannabis Committee, on their research involving Cannabis over the past 25 years. The testimony provided support for the “Compassionate Care Act” aimed at legalizing medical cannabis for SC patients suffering from debilitating diseases, against which there is no effective treatment.

Dr. Angela Murphy delivered a lighting talk of her research program at the Annual Meeting of the NCI funded MeDOC (Metabolic Dysregulation Obesity Cancer) Consortium, Salt Lake City, UT April 24-26, 2024.

Dr. Mitzi Nagarkatti was an invited presenter at the International Drug & Alcohol Research Society Conference, Rio de Janeiro, Brazil, April 29 – May 3, 2024. The presentation title was “Role of anandamide in the attenuation of acute respiratory distress syndrome through induction of epigenetic pathways and regulation of dysbiosis”.

Dr. Prakash Nagarkatti was an invited presenter at the International Drug & Alcohol Research Society Conference, Rio de Janeiro, Brazil, April 29 – May 3, 2024. The presentation title was “Delta-8-tetrahydrocannabinol Attenuates Experimental Multiple Sclerosis Through Modulation of Gut Microbiota”.

Dr. Prakash Nagarkatti chaired the session on Cannabinoids and Endocannabinoids at the International Drug & Alcohol Research Society Conference in Rio de Janeiro, Brazil, April 29-May 3, 2024.

P. Nagarkatti, M. Nagarkatti and S. Buch. Editors: Substance abuse and the microbiome. *Adv Drug Alcohol Res.* March 6, 2024.

Dr. Deepak Bhere was highlighted in University of South Carolina Breakthrough Research “Targeting Tumors” March 5, 2024. https://sc.edu/uofsc/posts/2024/03/breakthrough_targeting_tumors.php.

Brooke Bullard, graduate student in Angela Murphy’s lab received an F31 Award from the National Center of complementary of Integrative Health. Brooke was featured in USC announcements. https://sc.edu/study/colleges_schools/medicine/research/research_news/brooke_bullard_announcement.php

News & Updates

Chandani Mitchell, a Ph.D. graduate student in Dr. Busbee’s lab, successfully defended her thesis on February 28, 2024. Congratulations Dr. Mitchell!

Patrice Cunningham, a Ph.D. graduate student in Dr. Velazquez’s lab, successfully defended her thesis on March 20, 2024, “Exploring the Immune System’s Impact on Cancer Cachexia”. Congrats Dr. Cunningham!

Congratulations to Alex Huss (MS student in the Murphy lab) for successfully defending his MS Thesis on ‘The effects of high fat diet induced obesity on lipid deposition in skeletal muscle’. Alex will be attending medical school in the fall.

Stacey Oxendine, IBS PhD Candidate, was a rotation student in the Oskeritzian Lab from 01/03/24 to 03/08/24.

Dr. Swapan Ray is serving as a member of the Liaison Committee on Medical Education (LCME) Faculty Committee, which is by Gerald E. Harmon, MD, Interim Dean, USC SOMC. Dr. Ray is specifically serving in the LCME Standard 4 Committee. This committee will continue its work through the fall 2024. The Committee has met several times and started self-study process in preparation for our LCME accreditation site visit in February 2025.

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

Together with the USC SOMC Women in Science and Medicine (WiSaM) Committee, Interim Dean Harmon, Vice Dean Jeff Perkins, Kasie Roark (IBS PhD Candidate) and Dr. Carole Oskeritzian (WiSaM Committee Chair), launched the Carolina Closet at SOM, in partnership with the Gamecock CommUnity Shop. The Closet provides business casual and professional attire for job interviews and conference season. Hosted in Cocky's Cupboard in Building 3, Room 345.

Dr. Swapan Ray has reviewed a new eBook proposal 'Botanical Remedies for Neurological Wellness: Exploring the Therapeutic Potential of Plant Secondary Metabolites' for the Bentham Science Publisher.

Michael Madden, IBS PhD Candidate, was a rotation student in the Oskeritzian Lab from 03/11/24 to 05/03/24.

Dr. Swapan Ray has acted as the Editor of a new book "*Neuroprotection*" (ISBN: 978-1-0716-3661-9) published by the Springer Nature/Humana Press, New York, NY.

The Annual 2024 NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting was held in-person March 22, 2024, at the Columbia Metropolitan Convention Center. The attending COBRE EAC committee members were Theresa Whiteside, Cliff Lowell, Roger Markwald and Sandeep Prabhu. Presentations were given from the following PMI faculty: Prakash Nagarkatti, Jason Kubinak, P. Brandon Busbee, Kandy Velázquez, Carole Oskeritzian, Xiaoming Yang, Reilly Enos and Kiesha Wilson. The meeting had 100 attendees.



Congratulations to the following award winners from PMI:

PDF Awards:

- Dr. Varsha Kulangara, a Postdoc in the Nagarkatti's lab, was awarded 2nd Place for Postdoc Presentations at the NIH Center for Dietary Supplements and Inflammation – COBRE External Advisory Committee Meeting, Columbia, SC, March 22, 2024. Kulangara V K, Nagarkatti M, Nagarkatti P. Impact of altered gut microbiome composition and colonic gene expression in a murine model of Macrophage Activation Syndrome.
- Dr. Urmi Halder, a Postdoc in the Nagarkatti's lab, was awarded 3rd Place for Postdoc Presentations at the NIH Center for Dietary Supplements and Inflammation – COBRE External Advisory Committee Meeting, Columbia, SC, March 22, 2024. Halder U, Kakkar K, Wilson K, Carter T, Weyer C, Mohammed A, Kaul M, Nagarkatti P, Nagarkatti M. Cannabis component attenuates neurodegeneration through downregulation of microglial cell activation, astrocytosis and by reversing gut dysbiosis in GFAP-gp120 Tg Mice.

Graduate Student Awards:

- Hamida, a graduate student in the Nagarkatti lab, was awarded 1st Place Graduate Student Poster Award winner at the NIH Center for Dietary Supplements and Inflammation – COBRE External Advisory Committee Meeting, Columbia, SC, March 22, 2024. Hamida, Kulangara V, Marudamuthu A, Palrasu M, Nagarkatti P, and Nagarkatti M. miR-199a-3p and miR-100-5p regulate mTOR pathway and inhibit Concanavalin-induced autoimmune hepatitis in mice treated with $\Delta 8$ -THC.

- Chloe Weyer-Nichols, a graduate student in the Nagarkatti lab was awarded 2nd Place for Graduate Student Presentations at the NIH Center for Dietary Supplements and Inflammation – COBRE External Advisory Committee Meeting, Columbia, SC, March 22, 2024. Weyer C, Aladhami A, Carter T, Nagarkatti P, Nagarkatti M. Single-cell RNA Sequencing Reveals Mechanisms of TCDD-mediated Attenuation of Acute Respiratory Distress Syndrome Through Down-regulating Chemokines and Their Receptors on Myeloid Cells in the Lungs.

Undergraduate & Masters Student Awards:

- Zannatul Mauya, an undergraduate student from Dr. Kiesha Wilson's lab was awarded 1st Place Student Poster Award winner at the NIH Center for Dietary Supplements and Inflammation – COBRE External Advisory Committee Meeting, Columbia, SC, March 22, 2024. Mauya Z, Jean-Louis A, Carter T, Nagarkatti P, Nagarkatti M, and Wilson K. Evaluating the Effects of Staphylococcal Enterotoxin B (SEB) and Cannabidiol (CBD) on Alveolar Macrophage Functioning in Acute Respiratory Distress Syndrome.
- Taylor Jannusch an undergrad student in the Nagarkatti lab was awarded 2nd place Undergraduate Student Poster winner at NIH Center for Dietary Supplements and Inflammation – COBRE External Advisory Committee Meeting, Columbia, SC, March 22, 2024. Jannusch TT, Nagarkatti M, Nagarkatti PS. Differential effects of aryl hydrocarbon receptor (AhR) ligands on gut microbiota.

The following PMI faculty served as judges for the NIH COBRE for Dietary Supplements and Inflammation - Phase 2 External Advisory Committee Meeting:

- Avery Dingle, MD
- Angela Murphy, PhD
- Deepak Bhere, PhD
- Ioulia Chatzistamou, MD, PhD
- Swapan Ray, PhD

Dr. Carole Oskeritzian, the South Carolina Academy of Science (SCAS) Vice President, served as Co-Organizer of the 96th South Carolina Junior Academy of Science Annual/SCAS Joint Meeting held on March 23, 2024, at the College of Charleston, Charleston, South Carolina.

Dr. Carole Oskeritzian was invited to the SCbio Women Leaders in Life Science breakfast at the South Carolina Hospital Association, Columbia, SC on 03/28/24.

The WiSaM committee chaired by Dr. Carole Oskeritzian hosted a lunch-and-learn conversation with Dr. Carol McMahon, recently retired USC SOMC 2021 Luminary Leader In Medicine and Science, Associate Dean for Diversity and Inclusion and PMI Clinical Associate Professor on April 17 in the B1 classroom. The event was attended by over 40 SOMC and Prisma Health students, staff, and faculty members.

Dr. Carole Oskeritzian served as a judge for Graduate Students poster presentation at the 2023 Discover USC Research Day, held on April 19.

James F. Catroppo, M.D. attended the following faculty development workshops:

- International Association of Medical Science Educators (IAMSE) roundtable discussion "Effect of Curricular Refresh and Renewal on Students" (16 April 2024)
- International Association of Medical Science Educators (IAMSE) roundtable discussion "Effect of Curricular Reform on Faculty" (9 April 2024)
- Association of Biochemistry Educators (ABE) webinar "CBME: A Common Foundation with Infinite Building Blocks" (14 March 2024)
- International Association of Medical Science Educators (IAMSE) roundtable discussion "It Isn't 'Self-Directed' Anymore If You Have To Direct It, Or Is It?" (5 March 2024)
- Association of Biochemistry Educators (ABE) webinar "Back to Basics: The Role of Foundational Sciences in CBME" (22 February 2024)
- Association of Biochemistry Educators (ABE) webinar "Competency-Based Medical Education (CBME) in Pre-Clerkship Education" (25 January 2024)

Class of 2024 students Lauren Blackmon and Radhika Patel achieved successful matches into Pathology Residency programs in the 2024 National Resident Matching Program (NRMP) Match. Lauren at East Carolina University Brody School of Medicine and Radhika at the University of Alabama at Birmingham Heersink School of Medicine. This is now the 4th consecutive year in which graduates of USCSOMC have matched into pathology residency programs:

Class of 2021

Caroline Stanek

University of Alabama at Birmingham Heersink School of Medicine
(PGY-3, Chief Resident-Elect in Clinical Pathology)

Class of 2022

Alyssa Lee

University of Alabama at Birmingham Heersink School of Medicine
(PGY-2, Resident Leader in Communications)

Class of 2023

Ryan Bragiel

University of Alabama at Birmingham Heersink School of Medicine (PGY-1)

Amber Prete

Virginia Commonwealth University School of Medicine (PGY-1)

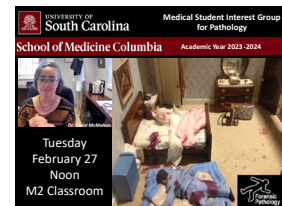
The Medical Student Interest Group for Pathology held the following lunch meetings:

27 February 2024

Carol McMahon, M.D., My Career as a Medical Examiner.



Dr. McMahon pictured here with faculty advisor to the interest group, Dr. Catroppo and interest group class officers M2 students Dillon Spires (President), Gannett Loftus (Vice-President), Sydney Thomas (Secretary), and Nelson Gonzalez (Treasurer).



2 April 2024

Virginia Commonwealth University School of Medicine PGY-1 Anatomic and Clinical Pathology Resident Amber Prete returned for the second time this year for a Zoom meeting to give the students an update on her “day in the life of a first-year path resident” with a glimpse into her rotations on the transfusion medicine (AKA “blood banking”), hematopathology, and autopsy services.

23 April 2024

Video presentation “From Medical Student to Practicing Pathologist” by Dr. Michael Prystowsky (Albert Einstein College of Medicine).

Publications

Muraleedharan A, Ray SK. Epigallocatechin-3-gallate and genistein for decreasing gut dysbiosis, inhibiting inflammasomes, and aiding autophagy in Alzheimer’s disease. *Brain Sci.* 2024 Jan 19;14(1):96.

Mohammed AD, Ball RAW, Jolly A, Nagarkatti P, Nagarkatti M, Kubinak JL. Studying the cellular basis of small bowel enteropathy using high-parameter flow cytometry in mouse models of primary antibody deficiency. *bioRxiv [Preprint]*. 2024 Jan 29:2024.01.25.577009.

VanderVeen BN, Cardaci TD, Bullard BM, Huss AR, McDonald SJ, Muhammed AD, Kubinak JL, Fan D, Murphy EA. The complex heterogeneity of the immune cell signatures across wasting tissues with C26 and 5 fluorouracil induced cachexia. *American Journal of Physiology-Cell Physiology.* 2024 Feb 1;326(2):C606-C621.

Cardaci TD, VanderVeen BN, Bullard BM, McDonald SJ, Unger CA, Enos RT, Fan D, Velázquez KT, Frizzell N, Spangenburg EE, Murphy EA. Obesity worsens mitochondrial quality control and does not protect against skeletal muscle wasting in murine cancer cachexia. *Journal of Cachexia, Sarcopenia, and Muscle.* 2024 Feb;15(1):124-137.

Cannon AS, Holloman BL, Wilson K, Miranda K, Nagarkatti PS, Nagarkatti M. 6-Formylindolo[3,2-b]carbazole, a potent ligand for the aryl hydrocarbon receptor, attenuates concanavalin-induced hepatitis by limiting T-cell activation and infiltration of proinflammatory CD11b+ Kupffer cells. *J Leukoc Biol.* 2024 Feb 16. (In Press)

Saxena A, Mitchell C, Bogdon R, Roark K, Wilson K, Staley S, Hailey M, Williams MC, Rutkovsky A, Nagarkatti P, Nagarkatti M, Busbee PB. Aryl Hydrocarbon Receptor Regulates Muc2 Production Independently of IL-22 during Colitis. *Int J Mol Sci.* 2024 Feb 18;25(4):2404.

dos Santos Azeredo, P, Fan D, Murphy EA, Carver W. Potential of plan-derived compounds to prevent and reverse organ fibrosis: underlying mechanisms. *Cells.* 2024 Feb 28;13(5):421.

Varsha KK, Nagarkatti M, and Nagarkatti P. Role of Gut Microbiota in Cannabinoid-Mediated Suppression of Inflammation. *Adv Drug Alcohol Res.* 2024 Mar 6;4:12734.

Varsha KK, Yang X, Cannon AS, Zhong Y, Nagarkatti M, Nagarkatti P. Identification of miRNAs that target Fcy receptor-mediated phagocytosis during macrophage activation syndrome. *Front Immunol.* 2024 Mar 15;15:1355315.

Holloman BL, Wilson K, Cannon A, Nagarkatti M, Nagarkatti PS. Indole-3-carbinol attenuates lipopolysaccharide-induced acute respiratory distress syndrome through activation of AhR: role of CCR2+ monocyte activation and recruitment in the regulation of CXCR2+ neutrophils in the lungs. *Front Immunol.* 2024 Mar 26;15:1330373.

Chaki S, Amponnawarat A, Levenstein B, Hui Y, Oskeritzian C, Ali H. Glatiramer acetate induces mast cell degranulation via MRGPRX2, implications for local and systemic adverse reactions. *Allergy.* 2024 Mar;79(3):758-761.

Kase BE, Liese AD, Zhang J, Murphy EA, Zhao L, Steck SE. The Development and Evaluation of a Literature-Based Dietary Index for Gut Microbiota. *Nutrients.* 2024 Apr 3;16(7):1045.

Braunstein PW, Horovitz DJ, Hampton AM, Hollis F, Newman LA, Enos RT, McQuail JA. Daily fluctuations in blood glucose with norma aging are inversely related to hippocampal synaptic mitochondrial proteins. *Aging Brain.* 2024 Apr 5:5:100116.

Ray SK. TUNEL-n-DIFL method for detection and estimation of apoptosis specifically in neurons and glial cells in mixed culture and animal models of central nervous system diseases and injuries. *Methods Mol Biol.* 2024:2761:1-26.

Ray SK, Dasgupta S. Chromatographic separation and quantitation of sphingolipids from the central nervous system or any other biological tissue. *Methods Mol Biol.* 2024:2761:149-157.

Presentations

Oskeritzian C. Local Frenemies: Mast Cells in Inflammation and Cancer. USC SOMC Seminar Series, Columbia, South Carolina, January 29, 2024.

Cardaci TD, VanderVeen BN, Fairman CM, Murphy EA. Visualizing Skeletal Muscle: Assessing Skeletal Muscle Health Using Micro-Muscle Biopsies & Electron Microscopy. American College of Sports Medicine Southeast Chapter, Greenville, SC, February 22-24 2024.

Kakar K, Nagarkatti M, and Nagarkatti P. Delta-8-THC Attenuates Experimental Multiple Sclerosis Through Suppression of Neuroinflammation Involving Epigenetic Pathways and Gut Microbiota-Brain Axis. Newton Symposium, Columbia, SC, March 8, 2024.

Carter TH, Nagarkatti M, Nagarkatti PS. Delta-9-Tetrahydrocannabinol attenuates macrophage differentiation through downregulation of intra-cellular reactive oxygen species. Society of Toxicology, Salt Lake City, UT, March 10-14, 2024. **Award associated with this presentation: winner of the DDTSS Postdoctoral Poster Competition.**

Garcia-Sanchez J, Nagarkatti M, Nagarkatti PS. Delta-8-Tetrahydrocannabinol ameliorates colitis through suppression of inflammatory myeloid cells. Society of Toxicology, Salt Lake City, UT, March 10-14, 2024.

Jannusch TT, Singh, NP, Nagarkatti M, Nagarkatti PS. Differential effects of aryl hydrocarbon receptor (AhR) ligands on gut microbiota. Society of Toxicology, Salt Lake City, UT, March 10-14, 2024.

Weyer C, Aladhani A, Carter T, Nagarkatti P, Nagarkatti M. Single-cell RNA Sequencing Reveals Mechanisms of TCDD-mediated Attenuation of Acute Respiratory Distress Syndrome Through Down-regulating Chemokines and Their Receptors on Myeloid Cells in the Lungs. Society of Toxicology, Salt Lake City, UT, March 10-14, 2024. *Award associated with this presentation: **SOT Regulatory and Safety Evaluation Specialty Section Graduate Student Excellence Award.***

Huss AR, Cardaci TD, VanderVeen BN, Bullard BM, Joven N, Price RL, Murphy EA. Impact of Obesity Induced by High Fat Diet on Lipid Accumulation in Skeletal Muscle. The 2nd Annual IRF Research Core Fair, Columbia, SC, March 15, 2024.

Bullard BM, McDonald SJ, Cardaci TD, VanderVeen BN, Mohammed AD, Kubinak JL, Pierre JF, Chatzistamou I, Fan D, Hofseth LJ, Murphy EA. Panaxynol improves crypt and mucosal architecture, suppresses colitis-enriched microbes, and alters the immune response to mitigate colitis. The 2nd Annual IRF Research Core Fair, Columbia, SC, March 15, 2024.

Unger CA, Hope MC, VanderVeen BN, Socia CE, Rice BC, Cotham WE, Murphy EA, Enos RT. Estrogen and its Receptor in Male Liver Glucose Metabolism: A Balancing Act in Diet-Induced Obesity. The 2nd Annual IRF Research Core Fair, Columbia, SC, March 15, 2024.

Cardaci TD, Huss AR, VanderVeen BN, Bullard BM, Joven N, Price R, EA Murphy. Cancer cachexia increases skeletal muscle lipid deposition and decreases lipid droplet-mitochondrial contact. The 2nd Annual IRF Research Core Fair, Columbia, SC, March 15, 2024.

Khadija Kakar, (graduate student Nagarkatti lab) presented at the USC SOM graduate student seminar series, "Mechanisms Underlying Delta-8-THC Mediated Amelioration of Neuroinflammation in Experimental Multiple Sclerosis", Columbia, SC, on March 20, 2024.

Bullard BM, McDonald SJ, Cardaci TD, VanderVeen BN, Mohammed AD, Kubinak JL, Pierre JF, Chatzistamou I, Fan D, Hofseth LJ, Murphy EA. Panaxynol improves crypt and mucosal architecture, suppresses colitis-enriched microbes, and alters the immune response to mitigate colitis. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Gupta R, Nagarkatti P, Nagarkatti M. A bioinformatic analysis to identify potential diagnostic and therapeutic biomarkers in inflammatory bowel disease. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Jannusch TT, Nagarkatti M, Nagarkatti PS. Differential effects of aryl hydrocarbon receptor (AhR) ligands on gut microbiota. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. *Award associated with this presentation: **2nd place in the undergraduate category.***

Cardaci TD, Huss AR, VanderVeen BN, Bullard BM, Joven N, Price R, Murphy EA. Cancer cachexia increases skeletal muscle lipid deposition and decreases lipid droplet-mitochondrial contact. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

VanderVeen BN, Cardaci TD, Bullard BM, Huss AR, Joven N, Fan D, Murphy EA. The impact of obesity on chemotherapy-induced cytotoxicity. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Muraleedharan A, Ray SK. Bioflavonoids for inhibiting neuroinflammation and promoting autophagy for neuroprotection in AD cell culture model exposed to oligomeric A β 42 and gut dysbiotic neurotoxin LPS. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Mauya Z, Jean-Louis A, Carter T, Nagarkatti P, Nagarkatti M, and Wilson K. Evaluating the Effects of Staphylococcal Enterotoxin B (SEB) and Cannabidiol (CBD) on Alveolar Macrophage Functioning in Acute Respiratory Distress Syndrome. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. **1st Place award for Undergraduate Student Presentations.**

Rayala N, Al-Sammarraie N, Ray SK. Noggin inhibited bone morphogenetic protein 4 (BMP4) and promoted autophagy to prevent apoptosis in motoneurons in cell culture model of acute spinal cord injury (SCI). External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Weyer C, Aladhami A, Carter T, Nagarkatti P, Nagarkatti M. Single-cell RNA Sequencing Reveals Mechanisms of TCDD-mediated Attenuation of Acute Respiratory Distress Syndrome Through Down-regulating Chemokines and Their Receptors on Myeloid Cells in the Lungs. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. **2nd Place award for Graduate Student Presentations.**

Oskeritzian CA. Molecular Mechanisms of Resveratrol in Skin Inflammation. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Carter TH, Nagarkatti M, Nagarkatti PS. Delta-9-Tetrahydrocannabinol attenuates macrophage differentiation through downregulation of intra-cellular Reactive Oxygen Species. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Kakar K, Halder, U, Nagarkatti M, and Nagarkatti P. Protective Effects of Delta-8-THC Against EAE-Induced Enteric Neuropathy and Neuroinflammation through Regulation of miRNA-Mediated Signaling Networks. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Kulangara V K, Nagarkatti M, Nagarkatti P. Impact of altered gut microbiome composition and colonic gene expression in a murine model of Macrophage Activation Syndrome. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. **2nd Place award for Postdoc Presentations.**

Hamida, Kulangara V, Marudamuthu A, Palrasu M, Nagarkatti P, and Nagarkatti M. miR-199a-3p and miR-100-5p regulate mTOR pathway and inhibit Concanavalin-induced autoimmune hepatitis in mice treated with $\Delta 8$ -THC. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. **1st Place award for Graduate Student Presentations.**

Halder U, Kakkar K, Wilson K, Carter T, Weyer C, Mohammed A, Kaul M, Nagarkatti P, Nagarkatti M. Cannabis component attenuates neurodegeneration through downregulation of microglial cell activation, astrogliosis and by reversing gut dysbiosis in GFAP-gp120 Tg Mice. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. **3rd Place award for Postdoc Presentations.**

Jannusch TT, Nagarkatti M, Nagarkatti PS. Differential effects of aryl hydrocarbon receptor (AhR) ligands on gut microbiota. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024. **2nd Place award for Undergraduate Student Presentations.**

Garcia-Sanchez J, Nagarkatti M, Nagarkatti PS. Delta-8-Tetrahydrocannabinol ameliorates colitis through suppression of inflammatory myeloid cells. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Marudamuthu A, Palrasu M, Hamida H, Thada S, Gupta R, Nagarkatti PS, Nagarkatti M. Aryl hydrocarbon receptor activation ameliorates acute respiratory distress syndrome through regulation of antimicrobial peptides. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Bogdon R, Roark K, Saxena A, Mitchell C, Hailey M, Staley S, and Busbee, PB. Depressive-like behavior associated with colitis is altered after treatment with aryl hydrocarbon receptor ligand. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Staley S, Saxena A, Roark K, Bogdon R, Williams J, Nagarkatti M, Nagarkatti P, Busbee PB, and Wilson K. The Role of *Bacteroides acidifaciens* in Colitis and Acute Respiratory Distress Syndrome. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Ball, R. Mohammed, A. Jolly, A. Kubinak, J.L. Gluten free diet limits outgrowth of pathobionts and ameliorates SI enteropathy in IgA deficient mice. External Advisory Committee Meeting, COBRE (Center for Dietary Supplements and Inflammation), Columbia, SC, March 22, 2024.

Jannusch TT, Singh NP, Carter T, Nagarkatti M, Nagarkatti PS. Investigation of aryl hydrocarbon receptor (AhR) ligands on MDSCs generation and thymic development. SC Academy of Science (SCAS) 95th Annual Meeting, Charleston, SC, March 23, 2024.

Muraleedharan A, Ray SK. Apigenin and naringenin for preventing persistent neuroinflammation and neurodegeneration due to gut pathobiont metabolite in a murine cell culture model of Alzheimer's disease. SC Academy of Science (SCAS) 95th Annual Meeting, Charleston, SC, March 23, 2024.

Rayala N, Ray SK. Noggin for inhibition of bone morphogenetic protein (BMP) signaling for promoting autophagy flux and neuroprotection in zebrafish model of spinal cord injury. SC Academy of Science (SCAS) 95th Annual Meeting, Charleston, SC, March 23, 2024.

Muraleedharan A, Ray SK. Mouse neuronal cell culture model of Alzheimer's disease in an environment mimicking gut dysbiosis for comparing efficacy of ursolic acid and donepezil in inhibiting neuroinflammation and promoting autophagy for neuroprotection. South Carolina (SC) branch of the American Society for Microbiology (ASM) at Coastal Carolina University, Conway, SC, April 6, 2024.

Rayala N, Ray SK. Rat neuronal cell culture model of acute spinal cord injury in a gut dysbiosis setting for comparing neuroprotective efficacy of the selective inhibitor of NLRP3 inflammasome and methylprednisolone. South Carolina (SC) branch of the American Society for Microbiology (ASM) at Coastal Carolina University, Conway, SC, April 6, 2024.

Huss AR, Cardaci TD, VanderVeen BN, Bullard BM, Joven N, Price RL, Murphy EA. The Effects of High Fat Diet Induced Obesity on Lipid Deposition in Skeletal Muscle. USC Discover Day, Columbia, SC, April 19, 2024.

Cardaci TD, Huss AR, VanderVeen BN, Bullard BM, Joven N, Price R, Murphy EA. Cancer cachexia increases skeletal muscle lipid deposition and decreases lipid droplet-mitochondrial contact. USC Discover Day, Columbia, SC, April 19, 2024.

Unger CA, Hope MC, VanderVeen BN, Socia CE, Rice BC, Cotham WE, Murphy EA, Enos RT. Estrogen and its Receptor in Male Liver Glucose Metabolism: A Balancing Act in Diet-Induced Obesity. USC Discover Day, Columbia, SC, April 19, 2024. **First place Postdoctoral Scholarship Award morning session.**

Bullard BM, McDonald SJ, Cardaci TD, VanderVeen BN, Mohammed AD, Kubinak JL, Pierre JF, Chatzistamou I, Fan D, Hofseth LJ, Murphy EA. Panaxynol improves crypt and mucosal architecture, suppresses colitis-enriched microbes, and alters the immune response to mitigate colitis. USC Discover Day, Columbia, SC, April 19, 2024.

Weyer C, Aladhami A, Carter T, Nagarkatti P, Nagarkatti M. Single-cell RNA Sequencing Reveals Mechanisms of TCDD-mediated Attenuation of Acute Respiratory Distress Syndrome Through Down-regulating Chemokines and Their Receptors on Myeloid Cells in the Lungs. USC Discover Day, Columbia, SC, April 19, 2024.

Carter TH, Nagarkatti M, Nagarkatti PS. Delta-9-Tetrahydrocannabinol attenuates macrophage differentiation through downregulation of intra-cellular Reactive Oxygen Species. USC Discover Day, Columbia, SC, April 19, 2024. **Award associated with this presentation: First place Postdoctoral Scholarship Award afternoon session.**

Gupta R, Nagarkatti P, Nagarkatti M. Integrative bioinformatic analysis of diagnostic and therapeutic markers of post-traumatic stress disorders and associated comorbidities. USC Discover Day, Columbia, SC, April 19, 2024. **Second place Postdoctoral Scholarship Award morning session.**

Bogdan R, Roark K, Saxena A, Mitchell C, Hailey M, Staley S, Nagarkatti P, Nagarkatti M, Busbee PB. Aryl hydrocarbon receptor ligand supplementation impacts colitis-associated depressive-like behavior. USC Discover Day, Columbia, SC, April 19, 2024. **Graduate Student poster award winner.**

Gandy H, Kunkel D, Oxendine S, Madden M, Hui Y, Nagarkatti P, Nagarkatti M, Oskeritzian C. Pathogenic mechanisms of eczema: regulatory roles of mast cells and resveratrol. USC Discover Day, Columbia, SC, April 19, 2024.

Muraleedharan A, Ray SK. Resveratrol and pterostilbene for inhibiting NLRP3 inflammasome and promoting autophagy flux in human SH-SY5Y cell culture model of Alzheimer's disease in a context of gut dysbiosis. USC Discover Day, Columbia, SC, April 19, 2024.

Rayala N, Ray SK. Melatonin for suppression of PANoptosis and promotion of autophagy for neuroprotection in rat VSC4.1 motoneuron cell culture model of acute spinal cord injury in a milieu of gut dysbiosis. USC Discover Day, Columbia, SC, April 19, 2024.

Unger CA, Hope MC, VanderVeen BN, Socia CE, Rice BC, Cotham WE, Murphy EA, Enos RT. Adipose tissue specific aromatase overexpression improves metabolic dysfunction and adipose tissue inflammation in obese male mice. Annual Meeting – MeDOC (Metabolic Dysregulation Obesity Cancer) Consortium, Salt Lake City, UT April 24-26, 2024.

Bullard BM, McDonald SJ, Cardaci TD, VanderVeen BN, Mohammed AD, Kubinak JL, Pierre JF, Chatzistamou I, Fan D, Hofseth LJ, Murphy EA. Panaxynol improves microbial and immune dysregulation in colitis, aimed at reducing cancer risk. Annual Meeting – MeDOC (Metabolic Dysregulation Obesity Cancer) Consortium, Salt Lake City, UT April 24-26, 2024.

VanderVeen BN, Bullard BM, Cardaci TD, Joven N, Murphy EA. The impact of diet induced obesity and liver dysfunction on murine tumor development and progression. Annual Meeting – MeDOC (Metabolic Dysregulation Obesity Cancer) Consortium, Salt Lake City, UT April 24-26, 2024.

Cardaci TD, VanderVeen BN, Bullard BM, Velazquez KT, Murphy EA. Obesity Alters the Tumor Microenvironment, Accelerates Tumorigenesis, and Dysregulates Skeletal Muscle Lipid Metabolism in Murine Cancer Cachexia. Annual Meeting – MeDOC (Metabolic Dysregulation Obesity Cancer) Consortium, Salt Lake City, UT April 24-26, 2024.