



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

2018 January - April

P Honors & Awards

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Dr. Angela Murphy and Dr. Daping Fan from the Dept. of Cell Biology and Anatomy (CBA) received a Multiple PI R01 grant from the National Cancer Institute to study emodin as a chemopreventive agent for breast cancer. This is a five year award in the amount of \$1,751,198.

Alex Sougiannis, Ph.D. student (Murphy Laboratory) received an F31 award from the National Institute for Complementary and Integrative Health. Alex's award will focus on "Enhancing the efficacy of 5 fluorouracil using emodin as a complementary strategy". The award is for 3 years and in the amount of \$98,000. Alex will be co-mentored by Dr. Angela Murphy, Dr. Mitzi Nagarkatti, and Dr. Janelle Arthur (UNC Chapel Hill).

Jackie Bader, Ph.D. student (Murphy Laboratory) received an F31 award from the National Cancer Institute for three years in the amount of \$98,000. Jackie's award will focus on "Macrophage-Microbiota Interactions in Colorectal Cancer". Jackie will be co-mentored by Dr. Angela Murphy, Dr. Mitzi Nagarkatti and Dr. Janelle Arthur (UNC Chapel Hill).

Tina Akers, the departmental Business Manager received her 20 years of State Service pin at a recognition ceremony on April 23rd at the Russell House Ballroom. The pins were presented by President Harris and Patricia Pastides.

Congratulations to Dr. Mitzi Nagarkatti, who was presented the Breakthrough in Research Leadership Award. Each spring, the Office of Research USC honors a group of the most outstanding researchers and scholars. The Breakthrough award has been carefully designed to recognize the best and brightest faculty for these awards.

Ross Tanis, a rising fourth year medical student at USC SOM, was awarded the 2018 AQA Carolyn L. Kuckein Student Research Fellowship for a human study conducted in Dr. Carole Oskeritzian's laboratory on skin remodeling in asymptomatic atopic dermatitis, in collaboration with Palmetto Health-USC Medical Group and the USC SOM Research Center for Transforming Health.

Dr. Angela Murphy received a grant from the American Institute for Cancer Research for work that will focus on sex-specific differences in obesity-enhanced colorectal cancer. The award is for two years and in the amount of \$150,000.

Nabihah I. Kumte, a junior majoring in Public Health from the Honors College at USC and Magellan Scholar in Dr. Carole Oskeritzian's laboratory was the recipient of Second Place Sigma Xi Award in recognition of Outstanding Research in the Cellular, Molecular and Microbiology I session at the 91st Annual Meeting of the South Carolina Academy of Science (SCAS) held at the Presbyterian College, Clinton, SC on April 1, 2018. She also won Second Place at the Discover USC, Biology and Biomedical Sciences session on April 20, Columbia, SC. Nabihah was also invited to give a three-minute poster talk at the Center for Colon Cancer Annual Retreat held on January 11, 2018, Columbia, SC for her poster presentation entitled "Could mast cells be early diagnostic markers of colorectal cancer?".

Dr. Angela Murphy received an ASPIRE I grant from the Office of the VP for Research. The funded study will focus on "Targeting Macrophages to Increase Efficacy of 5-Fluorouracil Chemotherapy in Colorectal Cancer".

Kenneth Frederick (Murphy Laboratory) was selected as one of three trainees on the Susan G. Komen "Interdisciplinary Graduate Training Program in Cancer Disparities". This grant will support Kenneth's training and stipend for one year.

Dr. Hasan Alghetaa was the “Postdoctoral Fellow Award Winner” at USC Discovery Day, April 20, 2018 for his poster presentation, *Resveratrol inhibits metabolism of SEB-activated T lymphocytes by epigenetic dysregulation*, coauthored by Amira Mohammed, Mitzi Nagarkatti and Prakash Nagarkatti.

Dr. Naidu Chitrala was also the “Postdoctoral Fellow Award Winner” at USC Discovery Day, April 20, 2018 for his poster presentation, *Impact of deleterious single nucleotide polymorphisms in Catechol O-Methyltransferase conferring risk to Post-traumatic stress disorder*, coauthored by Prakash Nagarkatti and Mitzi Nagarkatti.



USC Discovery Day Postdoctoral Fellow Award Winners Hasan Alghetaa and K. Naidu Chitrala are second and third from left.

Nicholas Dopkins, graduate student in the Nagarkatti lab, was the Graduate Student Award Winner at USC Discovery Day, Columbia, SC, April 20, 2018 for his poster presentation entitled, *Role of gut microbial metabolite tryptamine in the amelioration of Experimental Autoimmune Encephalomyelitis*, coauthored by Prakash Nagarkatti and Mitzi Nagarkatti.

Wurood Neamah, graduate student in the Nagarkatti lab, was presented the Graduate Student Award Winner at USC Discovery Day, Columbia, SC April 20, 2018 for her poster presentation entitled, *2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) induces immune tolerance by altering the gut microbiome*, coauthored by Prakash Nagarkatti and Mitzi Nagarkatti.

William Becker, graduate student in the Nagarkatti lab, was selected for a Platform Presentation at the Society for NeuroImmune Pharmacology and International Society for NeuroVirology, Chicago, IL. April 10-14, 2018. His presentation was entitled, *Cannabinoid receptor activation induces unique changes in the murine gut microbiome associated with the induction of anti-inflammatory myeloid-derived suppressor cells and T regulatory cells* and coauthored by Mitzi Nagarkatti and Prakash Nagarkatti.

Marpe Bam, PhD in the Nagarkatti lab, was selected for a Platform Presentation at the Annual Meeting of Society of Toxicology, San Antonio, TX, March 11-15th, 2018. His presentation was titled, *Dysregulated WNT signaling in PTSD patients correlates with altered epigenetic marks and elevated inflammation*, coauthored by Mitzi Nagarkatti, Prakash Nagarkatti and Xiaoming Yang.

Muthanna Sultan, a graduate student in the Nagarkatti lab, was presented the Graduate Student Achievement Award from the Biotechnology Specialty Section and Honorable Mention from Molecular and System Biology Specialty Section at the Annual Meeting of Society of Toxicology, San Antonio, TX. March 11-15, 2018. His presentation, *Endocannabinoids attenuated Staphylococcus Enterotoxin B (SEB)-mediated acute lung injury through regulation of microRNA that target the induction of myeloid derived suppressor cells and T regulatory cells*, was coauthored by Prakash Nagarkatti and Mitzi Nagarkatti.

News & Updates

Dr. Mitzi Nagarkatti served as a grant reviewer for the NIH Systemic Inflammation and Environmental Exposures Study Section meeting held in February 28-March 1, 2018, in Alexandria, VA.

Dr. Kandy Velázquez (Murphy Laboratory) was invited to give a talk in the Department of Physiological Sciences Seminar Series at the University of Florida. Dr. Velázquez's talk was titled “Is inflammation the link between colon cancer progression and initiation of cancer pain?”

Dr. Angela Murphy served as a reviewer for the National Cancer Institute Special Emphasis Panel on Metabolic Reprogramming to Improve Immunotherapy on February 21st, 2018.

Dr. Carole Oskeritzian served as a judge in the Medicine/Pharmacology/Public Health session, while Ahmed Aladhami, Ph. D. student in Dr. Oskeritzian's laboratory, judged the oral and poster presentations in the Cellular, Molecular and Microbiology sessions at the 2018 South Carolina Academy of Sciences Meeting on April 14, 2018 at Presbyterian College, Clinton, SC.

Dr. James Catroppo attended the January 31, 2018 University of South Carolina Center for Teaching Excellence (CTE) workshop “So You Think You Need To Lecture?”

Dr. Mitzi Nagarkatti was honored to participate in the SmartState Council of Chairs Forum, April 11-13, 2018, at Clemson University and in Greenville, SC.

Dr. Angela Murphy was invited to give a talk on “Effect of 5FU on Colon Inflammation, Gut Microbiota and Adverse Physiological Outcomes” at the Center for Colon Cancer Annual Retreat, January 11, 2018, Columbia, SC.

Dr. Carole Oskeritzian served as a reviewer for American Heart Association (AHA) USC Medical Student Cardiovascular Research Experience Program, March 12, Columbia, SC.

On 10 and 11 April, in celebration of Medical Laboratory Professionals Week, sponsored by the American Society for Clinical Pathology (ASCP), and with support and effort of the USCSOM Medical Student Interest Group for Pathology, “SWAG” (promotional items) and literature from the American Society for Clinical Pathology and the Intersociety Council for Pathology Information (ICPI) were offered to all of our “rising M3s” who attended a “mini-vademecum” (introductory guide to aspects of laboratory medicine) hosted by three of their future attendings. They included Dr. Roy Mathew (Division of Nephrology at the Wm. Jennings Bryan Dorn VA Medical Center) who spoke on renal function testing, Dr. Allan Brett (the Orlando Benedict Mayer Professor of Medicine at USC, Director of the Division of General Internal Medicine, and Vice Chair of the Department of Medicine) who spoke on serum enzyme testing, and Dr. Andy Sides (Assistant Professor of Clinical Internal Medicine, Primary Care Physician in the USC Internal Medicine Faculty Clinic, Director of the M3 Internal Medicine Clerkship, and Associate Director of the Internal Medicine Residency) who spoke on the CBC.



“Rising M3” student Nicole Carey, interest group class officer, baked “blood cell” cookies for everyone to “identify”... and enjoy!

Dr. Carole Oskeritzian served as a reviewer for the ASPIRE-II competition, USC Office of Research, Columbia, SC.

Zinah Al-Ghezi, a graduate student in the Nagarkatti lab, served as a reviewer for undergraduate student poster session on topics in Biology and Biomedical Sciences at USC Discovery Day, Columbia, SC. April 20, 2018.

Dr. Angela Murphy served as a reviewer for the National Cancer Institute ZRG1 F09A-R (20) Fellowships: Oncology Special Emphasis Panel on March 12-13th, 2018.

Dr. Carole Oskeritzian served as a grant reviewer for the NIH/NIAID ZRG1 IMM-R(10) Innovative Immunology Special Emphasis Panel held on March 22-23, Potomac, MD.

Congratulations To The

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Dr. Ioulia Chatzistamou served as a reviewer of Magellan Scholar applications on March 17th 2018 and as a reviewer of Aspire I Track -1 applications on April 11th 2018.

Dr. Carole Oskeritzian was invited to give a talk on “Mast cell-based non-invasive screening for colorectal cancer” at the Center for Colon Cancer Annual Retreat, January 11, 2018, Columbia, SC.

Class of 2018 graduating student Matthew Augustine received the Stefan Mironescu Memorial Award for Excellence in Pathology at the USCSOM Senior Banquet on 25 April. The \$200 annual award is given each year to the graduating student who had the highest grade average in the second year Medical Pathology course. Matthew will be continuing on to a preliminary surgery residency at Palmetto Health-USCSOM and afterwards an interventional radiology residency at the Mayo Clinic College of Medicine and Science.

Dr. Carole Oskeritzian and Ahmed Aladhmi served as judges for poster presentations at Discover USC, April 20, Columbia, SC.

On 21st February faculty advisor Dr. James Catroppo gave a lunch talk on the role of today's pathologist in health care – “What Do Pathologists Do???” – to the Medical Student Interest Group for Pathology. Informational brochures on a career in pathology were distributed.

Dr. Lucia Pirisi-Creek served on an NIH/NCI SPORE review panel in February, 2018.

Dr. Carole Oskeritzian was a Nominee for USC Distinguished Undergraduate Research Mentor of the Year.

Dr. Mitzi Nagarkatti was invited as a Session Chair of a workshop and presented a talk titled, “Environmental Chemical-Microbiome Interactions in Disease Susceptibility” at the 57th Annual Meeting of the Society of Toxicology (SOT), San Antonio, TX, March 11-15, 2018.

On March 5th Dr. Robert Startz gave a lunch talk on a career as a practicing pathologist to the Medical Student Interest Group for Pathology. Informational brochures on a career in pathology were distributed and lunches were provided for all those who attended.

Dr. Carole Oskeritzian was invited to give a seminar entitled “Mast cells and sphingosine-1-phosphate signaling: new nemeses of eczema pathogenesis”, at Palmetto Health-USC Medical Group, Immunology Center, Infectious Diseases Scientific Meeting, January 10, 2018, Columbia, SC.

Publications

Miranda K, Yang X, Bam M, Murphy EA, Nagarkatti PS, Nagarkatti M. MicroRNA-30 modulates metabolic inflammation by regulating Notch signaling in adipose tissue macrophages. *International Journal of Obesity*. 2018 (In press).

Becker W, Nagarkatti M, Nagarkatti PS. miR-466a Targeting of TGF- β 2 Contributes to FoxP3+ Regulatory T Cell Differentiation in a Murine Model of Allogeneic Transplantation. *Front Immunol*. 2018 Apr 9;(9):688.

Kaza V, Farmaki E, Crossland J, Chatzistamou I, Kiaris H. Growth of Human Breast Cancers in *Peromyscus*. *Dis Model Mech*. Jan 17;11 (1) 2018.

Woappi Y, Hosseinipour M, Creek KE, Pirisi L. Stem Cell Properties of Normal Human Keratinocytes Determine Transformation Responses to HPV16 DNA. *Journal of Virology*, 2018 (In press).

Khathayer F, Ray SK. Anti-tumor effects of HDAC inhibitors: Novel strategies for enhancing anti-tumor efficacy of the HDAC inhibitor SAHA for controlling growth of glioblastoma. *In: Horizons in Neuroscience Research* (ed., Costa A and Villalba E). 2018 Vol. 35, Nova Science Publishers, New York, NY, p. 1-50.

Bader JE, Enos RT, Velázquez KT, Carson MS, Nagarkatti M, Nagarkatti PS, Chatzistamou I, Davis JM, Carson JA, Robinson C, Murphy EA. Macrophage depletion using clodronate liposomes decreases tumorigenesis and alters gut microbiota in the AOM/DSS mouse model of colon cancer. *Am J Physiol Gastrointestinal Liver Physiol*. 2018 Jan 1;314(1):G22-G31.

Sistas Inspiring Sistas Through Activity and Support (SISTAS): Study Design and Demographics of Participants. Bevel M, Babatunde OA, Heiney SP, Brandt HM, Wirth MD, Hurley TG, Khan S, Johnson H, Wineglass CM, Warren TY, Murphy EA, Sercy E, Thomas AS, Hébert JR, Adams SA. *Ethn Dis.* 2018 Apr 26;28(2):75-84.

Abron JD, Singh NP, Murphy EA, Mishra MK, Price RL, Nagarkatti M, Nagarkatti PS, Singh UP. Differential role of CXCR3 in inflammation and colorectal cancer. *Oncotarget.* 2018 Apr 3;9(25):17928-17936.

Abron JD, Singh NP, Mishra MK, Price RL, Nagarkatti M, Nagarkatti PS, Singh UP. An endogenous aryl hydrocarbon receptor (AhR) ligand, ITE induces regulatory T cells (Tregs) and ameliorates experimental colitis. *Am J Physiol Gastrointest Liver Physiol.* 2018 Apr 19.

Shivappa N, Wirth MD, Murphy EA, Hurley TG, Hébert JR. Association between the Dietary Inflammatory Index (DII) and urinary enterolignans and C-reactive protein from the National Health and Nutrition Examination Survey-2003-2008. *Eur J Nutr.* 2018 (In press).

Presentations

Abdulla O, Nagarkatti M, Nagarkatti PS. 2,3,7,8-tetrachlorodibenzo-p-dioxin induced gut dysbiosis modulates delayed type hypersensitivity reaction. USC Discovery Day, Columbia, SC, April 20th, 2018.

Alghetaa HF, Mohammed AK, Nagarkatti M, Nagarkatti PS. Resveratrol inhibits metabolism of SEB-activated T lymphocytes by epigenetic dysregulation. Annual Meeting of Society of Toxicology (ToxExpo), San Antonio, TX, March 11-15th, 2018.

Alghetaa HF, Mohammed AK, Nagarkatti M, Nagarkatti PS. Resveratrol inhibits metabolism of SEB-activated T lymphocytes by epigenetic dysregulation. USC Discovery Day, Columbia, SC, April 20th, 2018. **Postdoctoral Fellow Award Winner.**

Al-Ghezi Z, Nagarkatti M, Nagarkatti PS. Combination of cannabinoids, Δ^9 - tetrahydrocannabinol (THC) and cannabidiol (CBD), ameliorate experimental autoimmune encephalomyelitis by promoting cell cycle arrest and apoptosis in activated T cells through miRNA signaling pathways. Morgan Newton Symposium, USC School of Medicine, Columbia, SC, March 9th, 2018.

Al-Ghezi Z, Al-Ghetaa H, Nagarkatti M, Nagarkatti PS. Combination of cannabinoids, Δ^9 - tetrahydrocannabinol (THC) and cannabidiol (CBD), mitigate experimental autoimmune encephalomyelitis (EAE) by altering the gut microbiome. USC Discovery Day, Columbia, SC, April 20th, 2018.

Alharris E, Alghetaa HF, Busbee PB, Nagarkatti M, Nagarkatti PS. Resveratrol attenuates allergic asthma and associated inflammation in the lungs through microRNA regulation. SOT-2018. Annual Meeting of Society of Toxicology (ToxExpo), San Antonio, TX, March 11-15th, 2018.

Alharris E, Alghetaa HF, Busbee PB, Nagarkatti M, Nagarkatti PS. Resveratrol attenuates allergic asthma and associated inflammation in the lungs through microRNA regulation. USC Discovery Day, Columbia, SC, April 20th, 2018.

Alrafas H, Busbee PB, Nagarkatti PS, Nagarkatti M. Effect of Resveratrol on Gut Microbiome in AOM-DSS inducing Colorectal Cancer. 57th Annual Meeting of the Society of Toxicology (SOT), San Antonio, TX, March 11-15th, 2018.

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Bam M, Yang X, Nagarkatti PS, Nagarkatti M. Dysregulated WNT signaling in PTSD patients correlates with altered epigenetic marks and elevated inflammation. Annual Meeting of Society of Toxicology, San Antonio, TX, March 11-15th, 2018. **Selected for Platform Presentation.**

Bam M, Yang X, Nagarkatti PS, Nagarkatti M. Dysregulated WNT signaling in PTSD patients correlates with altered epigenetic marks and elevated inflammation. Discover USC, Columbia, SC, April 20th, 2018.

Becker W, Nagarkatti M, Nagarkatti PS. Cannabinoid receptor activation induces unique changes in the murine gut microbiome associated with the induction of anti-inflammatory myeloid-derived suppressor cells and T regulatory cells. Society for NeuroImmune Pharmacology & International Society for NeuroVirology, Chicago, IL, April 10-14th, 2018. **Selected for Platform Presentation.**

Becker W, Nagarkatti M, Nagarkatti PS. Cannabinoid receptor activation induces unique changes in the murine gut microbiome associated with the induction of anti-inflammatory myeloid-derived suppressor cells and T regulatory cells. USC Discovery Day, Columbia, SC, April 20th, 2018.

Busbee PB, Menzel L, Nagarkatti M, Nagarkatti PS. Indole-3-carbinol ameliorates murine colitis symptoms by regulating the release of colonic anti-microbial peptides which prevents disease-associated microbial dysbiosis. USC Discover Day, Columbia, SC, April 20th, 2018.

Chitrala KN, Nagarkatti P, Nagarkatti M. Impact of deleterious single nucleotide polymorphisms in Catechol O-Methyltransferase conferring risk to Post-traumatic stress disorder. Annual Meeting of Society of Toxicology (ToxExpo), San Antonio, TX, March 11-15th, 2018.

Chitrala KN, Nagarkatti P, Nagarkatti M. Impact of deleterious single nucleotide polymorphisms in Catechol O-Methyltransferase conferring risk to Post-traumatic stress disorder. USC Discover Day, Columbia, SC, April 20th, 2018. **Postdoctoral Fellow Award Winner.**

Dopkins N, Nagarkatti PS, Nagarkatti M. Role of gut microbial metabolite tryptamine in the amelioration of Experimental Autoimmune Encephalomyelitis. USC Discover Day, Columbia, SC, April 20th, 2018. **Graduate Student Award Winner.**

Miranda K, Becker W, Busbee B, Dopkins N, Menzel L, Nagarkatti PS, Nagarkatti M. Cannabinoid receptor 1 blockade attenuates metabolic inflammation and gut microbial dysbiosis during high-fat diet-induced obesity. Discover USC, Columbia, SC, April 20th, 2018.

Mohammed A K, Alghetaa H F, Nagarkatti PS, Nagarkatti M. Role of Tetrahydrocannabinol (THC) in Amelioration of SEB-induced Acute Lung Injury by inhibition of nuclear factor kappa B (NF- κ B) and induction of apoptosis. 57th Annual Meeting of the Society of Toxicology (SOT), San Antonio, TX, March 11–15th, 2018.

Mohammed A K, Alghetaa H F, Nagarkatti PS, Nagarkatti M. Role of miR-34a in Amelioration of SEB-induced Lung Injury Treated with Tetrahydrocannabinol (THC). USC Discover Day, Columbia, SC, April 20th, 2018.

Neamah W, Nagarkatti PS, Nagarkatti M. 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) induces immune tolerance by altering the gut microbiome. USC Discover Day, Columbia, SC, April 20th, 2018. **Graduate Student Award Winner**

Shidal C, Nagarkatti M, Nagarkatti PS. MicroRNA-92 expression in CD133+ melanoma stem cells regulates immunosuppression in the tumor microenvironment through integrin-dependent TGF- β activation. USC Discover Day, Columbia, SC, April 20th, 2018.

Sultan MS, Nagarkatti M, Nagarkatti PS. Endocannabinoids attenuated Staphylococcus Enterotoxin B (SEB)-mediated acute lung injury through regulation of microRNA that target the induction of myeloid derived suppressor cells and T regulatory cells. Annual Meeting of Society of Toxicology (ToxExpo), San Antonio, TX, March 11-15th, 2018. **Graduate Student Achievement Award from the Biotechnology Specialty Section and Honorable Mention from Molecular and System Biology Specialty Section-Society of Toxicology (MSBSS-SOT)**

Sultan MS, Nagarkatti M, Nagarkatti PS. Endocannabinoids attenuated Staphylococcus Enterotoxin B (SEB)-mediated acute lung injury through regulation of microRNA that target the induction of myeloid derived suppressor cells and T regulatory cells. USC Discover Day, Columbia, SC, April 20th, 2018.

Sultan MS, Nagarkatti M, Nagarkatti PS. The endocannabinoid anandamide ameliorates acute lung injury through regulation of micro-RNA pathway and modulation of both extracellular acidification rate and oxygen consumption rate. Society for NeuroImmune Pharmacology & International Society for NeuroVirology, Chicago, IL, April 10-14th, 2018.

Hartman R, Farnaki E, Kaza V, Chatzistamou I, Kiaris H. CCL8 in mammary gland development and involution-associated breast cancer. Discover Day, Convention Center, Columbia SC, April 20th, 2018.

Faulkner A, Farmaki E, Kiaris H, Chatzistamou I. Crosstalk between fibroblasts and cancer cells involves the induction of endoplasmic reticulum stress. Discover Day, Convention Center, Columbia SC, April 20th, 2018.

Kumte NI, Aladhani A, Chumanevich AP, Chatzistamou I, Davis T, Pena M, Fuseler JW, Oskeritzian CA. Could mast cells be early diagnostic markers of colorectal cancer? Center for Colon Cancer Research Annual Retreat, Columbia, SC, January 11th, 2018.

Aladhani A, Hobensack M, Kumte NI, Chumanevich AP, Cranford TL, Enos RT, Velázquez KT, Chatzistamou I, Fuseler JW, Murphy EA, Oskeritzian CA. Potential angiogenic functions of mast cells in early stages of prostatic transformation. Center for Colon Cancer Research Annual Retreat, Columbia, SC, January 11th, 2018.

Kumte NI, Chumanevich AP, Aladhani A, Chatzistamou I, Davis T, Peña M, Fuseler JW, Oskeritzian CA. Could Mast Cells Be Early Diagnostic Markers of Colorectal Cancer? 91st Annual Meeting of the South Carolina Academy of Science (SCAS), Presbyterian College, Clinton, SC, April 14th, 2018.

Tanis RM, Wedman PA, Chumanevich AP, Aladhani A, Fuseler JW, Oskeritzian CA. Lack of skin mast cell activation and sphingosine-1-phosphate elevation in male mice may explain gender disparity observed in pre-symptomatic atopic dermatitis. Discover USC, April 20th, 2018, Columbia, SC.

Aladhani A, Hobensack M, Kumte NI, Chumanevich AP, Cranford TL, Enos RT, Velázquez KT, Chatzistamou I, Fuseler JW, Murphy EA, Oskeritzian CA. Potential angiogenic functions of mast cells in early stages of prostatic transformation. Discover USC, April 20th, 2018, Columbia, SC.

Kumte NI, Chumanevich AP, Aladhani A, Chatzistamou I, Davis T, Peña M, Fuseler JW, Oskeritzian CA. Could Mast Cells Be Early Diagnostic Markers of Colorectal Cancer? Discover USC, April 20th, 2018, Columbia, SC.

Jeanty M, Wedman PA, Chumanevich AP, Aladhani A, Tanis RM, Zumbrun E, Nagarkatti P, Nagarkatti M, Oskeritzian CA. MicroRNA-34a regulation of mast cell activation by sphingosine-1-phosphate in pre-symptomatic atopic dermatitis. NIH Post-baccalaureate Research Education Program (PREP) Scholar Poster Day, April 25th, 2018, Columbia, SC.

Taylor MA, Ray SK (2018) Autophagy: The double-edged sword of cancer therapy. Presented in the 2018 Discover USC; Session Title: MS: Basic Medical Sciences and Therapeutic Effectiveness/Efficiency, B; Poster Number: 90; April 20th, Columbia Metropolitan Convention Center - Columbia Ballrooms A and B (upper level), Columbia, SC.

Taylor MA, Ray SK (2018) Quercetin and sodium butyrate synergistically increase apoptosis in rat and human glioblastoma cells through inhibition of autophagy. Presented in the meeting of the South Carolina Medical Association (SCMA), Hyatt Regency Greenville, Saturday, April 28th from 8:00-11:00 am, Greenville, SC.