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The PMI Times

Department of Pathology, Microbiology and Immunology

The communication source for PMI Faculty, Staff & Students

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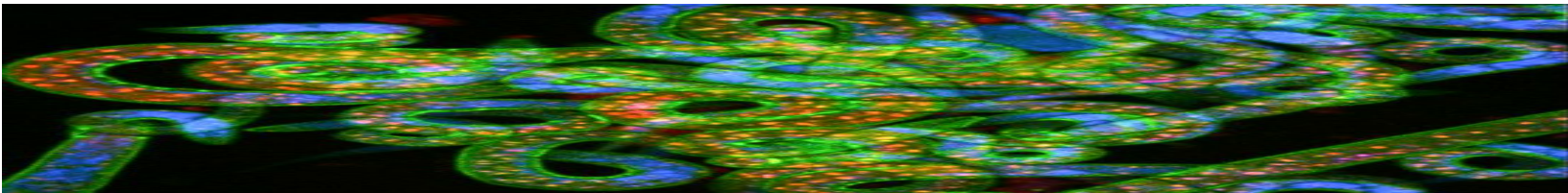
Editors: Chakira Hogan & Angela Murphy

University of South Carolina School of Medicine

News & Updates: *Graduations, Invited Presentations, Faculty Service and more.*

- Congratulations to the following faculty from our department who were recently promoted:
  - ⇒ Dr. Narendra Singh was promoted from Research Associate Professor to Research Professor
  - ⇒ Dr. Udai Singh was promoted from Research Assistant Professor to Research Associate Professor and
  - ⇒ Dr. Carol McMahon was promoted from Clinical Assistant Professor to Clinical Associate Professor
- Dr. Udai Singh has served as an ad-hoc member on the following study sections at the National Institutes of Health (NIH) over the last several months:
  - ⇒ "Cellular and Molecular Immunology A" study section
  - ⇒ "Cellular and Molecular Immunology B" study section
  - ⇒ "Diabetes and Kidney Disease Special Emphasis Panel"
- Dr. Delecia LaFrance was an Invited Speaker at the American Society for Clinical Pathology's Annual meeting this past September. Dr. LaFrance's presentation was entitled: "Many Faces of Pathology as a Career".
- Dr. Mitzi Nagarkatti served on the VA "Neurobiology B" grant review panel in December.
- Dr. Prakash Nagarkatti chaired the NIH, National Center for Complementary and Alternative Medicine Botanical Research Centers Study Section for review of P50 grants in September.
- Dr. Carole Oskeritzian served as an ad-hoc member on the NIH "Innate Immunity and Inflammation" (III) Study Section this past October.
- Dr. Angela Murphy gave an invited talk on Complementary and Alternative Medicine at the Health Symposium in Orangeburg SC in November.
- Dr. Prakash Nagarkatti chaired the NIH INBRE grant review panel in December.



News & Updates Continued…

- A recent publication from Venkatesh Hegde et.al., from Nagarkatti's lab (***Journal of Biological Chemistry*** 2013; 288(52):36810-26) on the effect of marijuana THC on microRNA in the induction of myeloid-derived suppressor cells was profiled on the cover of JBC on the Dec 27th, 2013 issue. The findings were also highlighted in articles in news media such as The State Newspaper, Science Daily, Med News Today, The Guardian Nigeria and San Francisco Chronicle. Dr. Mitzi Nagarkatti was interviewed on the significance of this exciting research by the Brazilian magazine called SAÚDE (translates to 'HEALTH'), which is a major magazine about health, nutrition and wellness from Brazil and published by the largest publishing house in Latin America. The study was co-authored by Sunil Tomar, Austin Jackson, Roshni Rao, Xiaoming Yang, Udai Singh, Narendra Singh, Prakash Nagarkatti and Mitzi Nagarkatti.

- Swati Tomar, of Dr. Pirisi-Creek's lab, defended her Ph.D. dissertation on October 31, 2013. Dr. Swati Tomar is currently exploring postdoctoral opportunities in Singapore. Congratulations Dr. Tomar!

- Dr. Prakash Nagarkatti chaired the NIH National Center for Complementary and Alternative Medicine Natural Products grant review meeting in September.

- Dr. Angela Murphy served on the NIH National Center for Complementary and Alternative Medicine educational panel study section in October.

- Dr. Udai Singh is currently serving as an editorial board member for the following journals:

  - ⇒ Journal of Immunology and Clinical Research
  - ⇒ BMC Immunology
  - ⇒ Annals of Clinical Pathology
  - ⇒ Austin Journal of Clinical Immunology

- Dr. Narendra Singh recently served as an international peer reviewer for the grants awarded by Nazarbayev University, Government of Kazakhstan.

- Dr. Mitzi Nagarkatti served on the Systemic Injury by Environmental Exposures Special Emphasis Panel for the National Institutes of Health in October.

- Austin Jackson from the Nagarkatti lab defended his doctoral thesis and is currently pursuing a postdoctoral fellow at the University of Missouri-Kansas City Health Sciences Center. Congratulations Dr. Jackson!

- In October 2013, Dr. Delecia LaFrance was certified as Diplomate of the American Board of Pathology in Molecular Genetic Pathology.

- Dr. Prakash Nagarkatti continues to serve on the EPA Federal Insecticide, Fungicide and Rodenticide Scientific Advisory Panel that met in December.

- Dr. Lucia Pirisi-Creek was invited to serve on two SPORE review panels for NIH in February, 2014.

- Dr. Narendra Singh gave an invited talk at Alabama State University, Montgomery, AL.

News & Updates Continued…

- Dr. Carole Oskeritzian delivered an invited seminar on "Lipid Mediator Sphingosine-1-Phosphate and Mast Cells: Complicit Partners in Allergic Responses" at Furman University Greenville, SC, on November 22, 2013. During her visit to Furman, she also gave a lecture in BIO-470 Immunology.

- Dr. Mitzi Nagarkatti was invited to serve on an NIH/NCI SPORE grant review panel in February 2014.

- In October 2013, Dr. Delecia LaFrance assumed the role of Molecular Diagnostics recruiting partner for the American Society for Clinical Pathology's Webinars and On-demand Webcasts (WOW) Committee.

- Dr. Narendra Singh is currently severing as an editorial board member for the following journals:

  ⇒ Journal of Immunology and Clinical Research
  ⇒ Annals of Clinical Pathology

Publications

- Chakrabarti M, Banik NL, Ray SK. Sequential hTERT knockdown and apigenin treatment inhibited invasion and proliferation and induced apoptosis in human malignant neuroblastoma SK-N-DZ and SK-N-BE2 cells. **J Mol Neurosci** 2013; 51(1):187-198.

- Wallace GC 4th, Dixon-Mah YN, Vandergrift WA 3rd, Ray SK, Haar CP, Mittendorf AM, Patel SJ, Banik NL, Giglio P, Das A. Targeting oncogenic ALK and MET: a promising therapeutic strategy for glioblastoma. **Metab Brain Dis** 2013; 28(3):355-366.

- Hossain MM, Banik NL, Ray SK. N-Myc knockdown and apigenin treatment controlled growth of malignant neuroblastoma cells having N-Myc amplification. **Gene** 2013; 15;529(1):27-36.

- Mohan N, Chakrabarti M, Banik NL, Ray SK. Combination of LC3 shRNA plasmid transfection and genistein treatment inhibited autophagy and increased apoptosis in malignant neuroblastoma in cell culture and animal models. **PLoS One** 2013; 8(10):e78958.

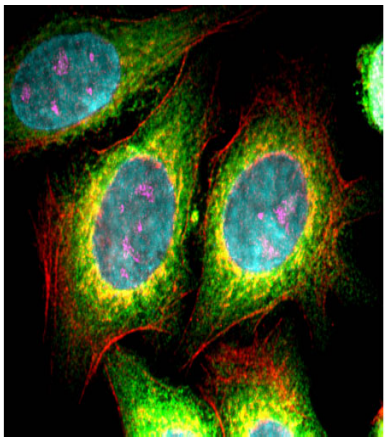
- Chen Y, Pirisi L, Creek, K.E. Ski protein levels increase during in vitro progression of HPV16-immortalized human keratinocytes and in cervical cancer. **Virology** 2013; 244:100-108.

- Kowli S, Velidandla R, Creek KE, Pirisi L. TGF-beta regulation of gene expression at early and late stages of HPV16-mediated transformation of human keratinocytes. **Virology** 2013; 447, 63-73.

- Altomare D, Velidandla R, Pirisi L, Creek KE. Partial loss of Smad signaling during in vitro progression of HPV16-immortalized human keratinocytes. **BMC Cancer** 2013; 13:424.

- Singh UP, Singh NP, Busbee B, Guan H, Price RL, Taub DD, Mishra MK, Fayad R, Nagarkatti M, Nagarkatti PS. The Severity of Experimental Autoimmune Cystitis can be Ameliorated by anti-CXCL10 Ab treatment. **PLoS One** 2013; 8(11): e79751

Publications Continued..



"Impossible is not a scientific term. "

-Vanna Bonta

- Moore K, Bryant ZJ, Ghatnekar G, Singh UP, Gourdie RG, Potts JD. A synthetic connexin 43 mimetic peptide augments corneal wound healing. **Exp Eye Res** 2013; 115C: 178-188.

- Liu X, Johnson S, Liu S, Kanojia D, Yue W, Singh UP, Wang Q, Wang Q, Nie Q, Chen H. Nonlinear Growth Kinetics of Breast Cancer Stem Cells: Implications for Cancer Stem Cell Targeted Therapy. **Scientific Reports** 2013; 3: 2473.

- Agrawal A, Owais M, Singh UP. Novel Vaccine Adjuvants. **Biomed Res Int**. 2013; 835105.

- Fernando J, Faber TW, Pullen NA, Falanga YT, Kolawole EM, Oskeritzian CA, Barnstein BO, Bandara G, Li G, Schwartz LB, Spiegel S, Straus DB, Conrad DH, Bunting KD, Ryan JJ. Genotype-dependent effects of TGF-β1 on mast cell function: targeting the Stat5 pathway. **J Immunol**. 2013; 191(9):4505-13.

- Chaudhry H, Zhou J, Zhong Y, Ali MM, McGuire F, Nagarkatti PS, Nagarkatti M. Role of Cytokines as a double-edged sword in sepsis. **In Vivo** 2013; 27: 669-684.

- Hegde VL, Tomar S, Jackson A, Rao R, Yang X, Singh UP, Singh NP, Nagarkatti PS, Nagarkatti M. Distinct MicroRNA Expression Profile and Targeted Biological Pathways in Functional Myeloid-derived Suppressor Cells Induced by Δ9-Tetrahydrocannabinol in Vivo: REGULATION OF CCAAT/ENHANCER-BINDING PROTEIN α BY MicroRNA-690. **J Biol Chem** 2013; 288(52):36810-26.

- Busbee PB, Nagarkatti M, Nagarkatti PS. Natural indoles, indole-3-carbinol and 3,3'-diindolymethane, inhibit T cell activation by staphylococcal enterotoxin B through epigenetic regulation involving HDAC expression. **Toxicol Appl Pharmacol**. 2013; 274: 7-16.

- Poudyal D, Cui X, Le PM, Hofseth AB, Windust A, Nagarkatti M, Nagarkatti PS, Schetter AJ, Harris CC, Hofseth LJ. A key role of microRNA-29b for the suppression of colon cancer cell migration by American ginseng. **PLoS One** 2013; 8(10):e75034.

- Singh UP, Singh NP, Guan H, Busbee B, Price RL, Taub DD, Mishra MK, Fayad R, Nagarkatti M, Nagarkatti PS. The emerging role of leptin antagonist as potential therapeutic option for inflammatory bowel disease. **Int Rev Immunol**. 2014; 33: 23-33.

- Busbee PB, Rouse M, Nagarkatti M, Nagarkatti PS. Use of natural AhR ligands as potential therapeutic modalities against Inflammatory disorders. **Nutr Rev** 2013; 71: 356-369.

- Singh UP, Singh NP, Guan H, Busbee B, Price RL, Taub DD, Mishra MK, Fayad R, Nagarkatti M, Nagarkatti PS. Leptin antagonist ameliorates chronic colitis in IL-10-/- mice. **Immunobiology** 2013; 218: 1439-14351.

Publications Continued…

- Chen Y, Wilbon PA, Zhou J, Nagarkatti M, Wang C, Chu F, Tang C. Multifunctional self-fluorescent polymer nanogels for label-free imaging and drug delivery. ***Chem Commun*** (Camb) 2013; 49:297-9.

- Liang Q, Yu F, Cui X, Duan J, Wu Q, Nagarkatti P, Fan D. Sparstolonin B suppresses lipopolysaccharide-induced inflammation in human umbilical vein endothelial cells. ***Arch Pharm Res.*** 2013; 36:890-6.

- Adada MM, Orr-Gandy KA, Sincer AJ, Canals D, Hannun YA, Obeid LM, Clarke CJ. Sphingosine kinase 1 regulates tumor necrosis factor-mediated RANTES induction through p38 mitogen-activated protein kinase but independently of nuclear factor κB activation. ***J Biol Chem*** 2013; 288: 27667-27679.

- Enos RT, Davis JM, McClellan JL, Murphy EA. Indomethacin in Combination with Exercise Leads to Muscle and Brain Inflammation in Mice. ***J Interferon Cytokine Res*** 2013; 33(8):446-51.

- Day SD, Enos RT, McClellan JL, Steiner JL, Velazquez KT, Murphy EA. Linking Inflammation to Tumorigenesis in a Mouse Model of High-Fat-Diet-Enhanced Colon Cancer. ***Cytokine*** 2013; 64(1):454-62.

- Guffey CR, Fan D, Singh UP, Murphy EA. Linking Obesity to Colorectal Cancer: Recent Insights into Plausible Biological Mechanisms. ***Curr Opin Clin Nutr Metab Care*** 2013; 16(5):595-600.

- Hebert JR, Wirth MW, Davis L, Davis B, Harmon BE, Hurley TG, Drayton R, Murphy EA, Shivappa N, Wilcox, S, Adams SA, Brandt HM, Blake CE, Armstead CA, Steck SE, Blair SN. Decreasing C-Reactive Protein in African Americans: Results of a Diet and Lifestyle Randomized Community Trial. ***American Journal of Preventative Medicine*** 2013; 45(4):430-40.

- Yu F, Du F, Wang Y, Huang S, Miao R, Major A, Murphy EA, Fun M, Fan D. Bone marrow deficiency of MCPIP1 results in severe multi-organ inflammation but diminishes atherogenesis in hyperlipidemic mice. ***PLoS One*** 2013; 8(11):e80089.

- Roberts LL, Robinson CM. Mycobacterium tuberculosis infection of human dendritic cells decreases integrin expression, adhesion, and migration to chemokines. ***Immunology*** 2014; 141:39-41.

- Jung J-Y, Madan-Lala R, Georgieva M, Rengarajan J, Sohaskey CD, Bange F-C, Robinson CM. The Intracellular environment of human macrophages that produce nitric oxide promotes growth of mycobacteria. ***Infect. Immun.*** 2013; 81:3198-209.

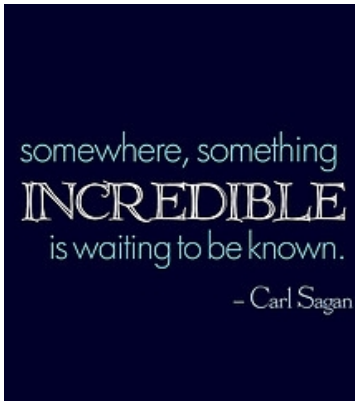
- Steiner JL, Davis JM, McClellan JL, Guglielmotti A, Murphy EA. Effects of the MCP-1 synthesis inhibitor bindarit on tumorigenesis and inflammatory markers in the C3(1)/SV40Tag mouse model of breast cancer. ***Cytokine*** 2013; In Press.

- Mahoney SE, Davis JM, Murphy EA, McClellan JL, Pena MM. Dietary quercetin reduces chemotherapy-induced fatigue in mice. ***Integrative Cancer Therapies*** 2013; In Press.

- Enos RT, Velazquez KT, Murphy EA. Insight into the Impact of Dietary Saturated Fat on Tissue-Specific Cellular Processes Underlying Obesity-Related Diseases. ***Journal of Nutritional Biochemistry*** 2013; In Press.

- Jackson AR, Hegde VL, Nagarkatti PS, Nagarkatti M. Characterization of endocannabinoid-mediated induction of myeloid-derived suppressor cells involving mast cells and MCP-1. ***J Leukoc Biol.*** 2013; In Press.

Honors & Awards



- Yvon Woappi of Dr. Pirisi-Creek's laboratory was selected as the winner of the Basic Science section at the 2013 Carolina Women's Health Forum that was held on October 24th. Yvon also received the fall 2013 Genius Award from 3D Biomatrix for his work involving 3D cell culturing techniques.
- Jamie McClellan, a Ph.D. student in Dr. Angela Murphy's laboratory, received a student award from the American Institute of Cancer Research for her paper on 'Treadmill running influences polyp burden and immune regulation in the $Apc^{Min/+}$ mouse model of intestinal tumorigenesis' that was presented at the Annual Meeting in November.
- Dr. Carole Oskeritzian received an R13 award from NIH/NIGMS to support the 48th Annual South Eastern Regional Lipid Conference (SERLC) that she was chairing in Cashiers, NC, from November 13-15th. This conference was also supported by USC and many corporate sponsors.
- Catherine Dong, who is mentored Dr. Venkatesh Hegde, received a travel award from the Science Undergraduate Research Fellowships (SURF) Program to present her work at the Sigma Xi research conference in North Carolina.

Presentations

- Murphy EA, Steiner JL, McClellan JL, Davis JM, Nagarkatti M, Nagarkatti P. Quercetin Decreases Tumorigenesis in Mouse Model of Breast Cancer. Southeast Regional IDeA Meeting, Little Rock Arkansas, 2013.
- Enos RT, Velazquez KT. McClellan JL, Cranford T, Nagarkatti M, Nagarkatti PS, Murphy EA. Sex-specific differences on inflammation following high-fat-diet feedings: Implications for colon cancer. American Institute for Cancer Research Annual Meeting, Washington DC, 2013.
- Velázquez KT, Pritchett C, Enos RT, McClellan J, Cranford T, Nagarkatti M, Nagarkatti PS, Fan D, Singh UP, Murphy EA. MicroRNA-155: A potential target for inflammatory driven colon cancer. American Institute for Cancer Research Annual Meeting, Washington DC, 2013.
- Pritchett CM, McClellan JL, Steiner JL, Enos RT, Nagarkatti M, Nagarkatti PS, Murphy, EA. Benefits of dietary quercetin on tumorigenesis in a mouse model of colitis associated colon cancer. American Institute for Cancer Research Annual Meeting, Washington DC, 2013.
- McClellan JL, Steiner JL, Davis JM, Day SD, Enos RT, Singh UP, Murphy EA. Treadmill running influences polyp burden and immune regulation in the $Apc^{Min/+}$ mouse model of intestinal tumorigenesis. American Institute for Cancer Research Annual Meeting, Washington DC, 2013.
- Dong C, Hedge VL, Nagarkatti M, Nagarkatti PS. Anti-inflammatory Effect of Resveratrol in Autoimmune Hepatitis. Cell Biology & Biochemistry session. Sigma Xi Student Research Conference, Nov 8-9, 2013, The Research Triangle Park, North Carolina.
- Gandy AR, Nagarkatti PS, Nagarkatti M. Resveratrol regulates miRNA expression in CD4+ T cells and protects against development of multiple sclerosis in a mouse model. Lipids in inflammatory disease processes session.48th Annual Southeastern Regional Lipid Conference, Nov 13-15, 2013, High Hampton Inn, Cashiers, North Carolina

Reminder:

If you are interested in submitting news/updates from your lab, recent publications, & presentations for the upcoming PMI Newsletter... Please send all details to Chakira Hogan at chakira.hogan@uscmed.sc.edu