Dr. Tracey Papenfuss Awarded a Two-Year NIH R21 Grant

Dr. Tracey Papenfuss, Assistant Professor in the Department of Veterinary Biosciences recently received a two-year R21 grant for her project entitled, "Regulatory myeloid cells in inflammatory disease: Therapy and targeted generation." Myeloid cells (e.g. dendritic cells) are early sentinel immune cells of the immune system that play important roles in inciting or regulating inflammatory and immune responses. The therapeutic application of regulatory myeloid cells is a new and active field of research and this proposal will investigate the generation and therapeutic application of regulatory or tolerogenic dendritic cells in inflammatory disease.

Dr. Papenfuss has also received a one-year grant from the National Blood Foundation entitled, “Development of myeloid derived suppressor cell therapy for the treatment of inflammatory disease.” This proposal investigates whether these MDSCs can be therapeutically utilized to treat inflammatory disease.

VBS HIGHLIGHTS FOR September:

Publications:

Traylor ZP, Aeffner F, Davis IC. Influenza A H1N1 induces declines in alveolar gas exchange in mice consistent with rapid post-infection progression from acute lung injury to ARDS. 2012. In press: Influenza and Other Respiratory Viruses. Impact factor: 3.812


This paper was featured in the “In This Issue” section of the August 1st issue of The Journal of Immunology. “In This Issue” highlights articles that are among the top 10% of articles published in the journal. A corresponding ImmunoCast of “In This Issue” is also produced for each issue and can be found on The Journal of Immunology web site at: http://www.jimmunol.org/rss/jipodcast.xhtml.

Peng H, Guerau-de-Arellano M, Metha VB, Yang Y, Huss DJ, Papenfuss TL, Lovett-Racke AE, Racke MK. 2012. Dimethyl fumarate inhibits dendritic cell maturation via nuclear factor kcyB (NF-kcyB) and extracellular signal-regulated kinase 1 and 2 (ERK1/2) and mitogen stress activated kinase (MSK1) signaling. J. Biological Chemistry. J. Biological Chemistry. ePub June 25. PMID 22733812

Manickam C, Dwivedi V, Patterson R, Papenfuss T, and GJ Renukaradhya. Porcine reproductive and respiratory syndrome virus induces pronounced immune modulatory responses at mucosal tissues in the parental vaccine strain VR2332 infected pigs (Accepted, Veterinary Microbiology)

Awards and Presentations:

Students in Dr. Papenfuss’ laboratory have been awarded a number of opportunities that include:

Patricia Gillen, a VME II student, was the recipient of an NIH T35 Summer Research for Veterinary Student fellowship for her summer research investigating Comparative Immunology, “Effects of the tumor microenvironment on canine myeloid cells.”

Julie Baker, an undergraduate student, received a Summer Research Opportunity Program Mayers Scholarship in Natural and Mathematical Sciences to work on her summer project, “Development of a luciferase-transduced metastatic mammary carcinoma tumor model for the in vivo evaluation of the effectiveness of cancer immunotherapies.”
Zachary VanGundy was invited to give an oral talk at the 2012 American Association of Immunologist’s meeting in Boston, MA. The title of his talk was, “Tolerogenic DCs differentiation and development of immunosuppressive DC precursors.” He was also the recipient of a travel award to attend the meeting. Zach was also invited to present a poster how an estrogenic microenvironment influences myeloipoiesis to generate regulatory myeloid cells at the 2012 Edward F. Hayes Graduate Research Forum.

Steve Friedenberg, an Emergency and Critical Care Resident and M.S. student in Dr. Papenfuss’ laboratory, was invited to give an oral presentation at the Student Veterinary Emergency and Critical Care meeting in San Antonio in September 2012.

The poster entitled, “Bilirubin improves pancreatic islet survival, suppresses damage associate molecular patter (DAMP) release and increases IL-10 production by dendritic cells in models of transplant associated stress,” was the 2012 winning collaborative poster for the 2012 Center for Clinical and Translational Sciences (CCTS) annual meeting. The collaboration was between the Colleges of Veterinary Medicine and Medicine and the authors were, Adin C, Oglesbee, M, Papenfuss, T, Hai T, London C, Zmuda E, Bobek D, Moffatt-Bruce, Xu F, Hadley G.

Dr. Michael Oglesbee announced the graduate seminar and publication award winners in VBS 8891 Research Seminar on Aug 27. Hongyan Liu was recognized for her 1st place publication award.

1st Place = Hongyan Liu  
Advisor: Dr. Yasuko Rikihis  
Title: *Ehrlichia* type IV secretion effector ECH0825 is translocated to mitochondria and curbs ROS and apoptosis by upregulating host MnSOD *Cellular Microbiology* 14(7): 1037-1050, 2012.

Graduations:

Dr. Matthew Shergar, a Clinical Oncology resident and M.S. student in Dr. Tracey Papenfuss’ laboratory, successfully defended his M.S. entitled, “Identification of Myeloid Derived Suppressor Cells in Tumor-Bearing Dogs” on research within the Papenfuss laboratory.
Staff Feature: Fong-Yuan Lin

Dr. Fong-Yuan Lin is a researcher in Dr. Rikihisa’s lab. Fong-Yuan is originally from Taiwan and recently received a PhD degree from the Department of Veterinary Medicine of National Chung-Hsing University. He is studying Ehrlichia Immunopathology and focusing on investigating the host receptors for the Ehrlichia stimulation. He enjoys working on a variety of tasks in the lab. Welcome to VBS, Fong-Yuan!

Wellness News: September is National Cholesterol Education Month
High blood cholesterol affects 65 million Americans. The higher your cholesterol, especially the low density lipoproteins in your blood, the greater your risk for developing heart disease. September is National Cholesterol Education Month, which is a good time to get your cholesterol checked and to take steps to lower it if it is high. Lifestyle behaviors, such as healthy eating, exercise, and managing stress can help lower elevated cholesterol levels, which reduces the chance of having a heart attack or developing cardiovascular disease.

Read more: www.nursing.osu.edu/BWT

For comments or suggestions for our newsletter, please contact Ms. Elizabeth Hope, Program Assistant at hope.18@osu.edu Department of Veterinary Biosciences.