Post-Doctoral Research Associate in Immunology/Nutrition/Toxicology

We are seeking a highly motivated and creative scientist with a record of accomplishment of successful research who can independently design and execute experiments. This is a 1 to 4 year, NIH-supported post-doctoral research appointment in the Department of Microbiology and Molecular Genetics and Department of Pathobiology and Diagnostic Investigation at Michigan State University in East Lansing, Michigan. The focus of the research is how consumption of omega-3 fatty acids found in fish oil (dietary lipids) and their metabolites can be exploited to develop prevention and/or intervention strategies against environment-triggered lupus and other autoimmune diseases. Duties will include cell culture, molecular biology and biochemistry, complex in vivo mouse work, assays of immune function, training of undergraduate and graduate researchers. Responsibilities include designing/conducting experiments, analyzing data, preparing data for publication and grant submission, as well as presenting at national/international meetings and applying for fellowships/grants.

The underlying premise for this work is that while the genome is a primary predisposing factor for autoimmunity, cumulative exposures to environmental factors such as toxic stressors and diet greatly impact latency and severity autoimmune diseases. Drs. James Pestka and Jack Harkema’s laboratories employ a combination of in vitro systems and animal models to examine silica-triggered autoimmunity with respect to 1) how dysregulation of inflammasome activation, cell death, efferocytosis self-antigen release in alveolar macrophages of lupus-prone mice and 2) how these pathways are modulated by omega-3/omega-6 polyunsaturated fatty acids and their metabolites. Revealing mechanisms of dietary lipid attenuation against silica-triggered lupus will bring novel insights into how manipulating cellular lipids through diet can be exploited to prevent environmental triggering of human autoimmune disease. Some original discoveries have been demonstrated in our publications [https://www.ncbi.nlm.nih.gov/pubmed/25978333 and https://www.ncbi.nlm.nih.gov/pubmed/27513935] and described in press releases [http://msutoday.msu.edu/news/2016/omega-3-fatty-acid-stops-known-trigger-of-lupus/ and https://lupusnewstoday.com/2017/06/05/michigan-state-researchers-receive-2-3-million-to-study-dha-in-lupus-prevention/].

Education. Requires a recent Ph.D. in immunology, nutrition, biochemistry, toxicology, or a related field. Required experience/skills: Training in molecular biology and cell culture techniques as well as willingness to work with murine models. Preferred: Strong background in immunology or microbiology, training in immunological and molecular biological techniques, prior research in autoimmune animal models, focus on macrophage biology, and/or experience in handling mice are encouraged to apply. The ideal individual should have strong experimental skills, organizational skills, as well as the ability to interface with researchers across disciplines.

With over 3100 miles of Great Lake shoreline, 11,000 inland lakes, 51,000 miles of rivers, 1300 miles of bike trails, Michigan (http://www.michigan.org/) is a four season wonderland for outdoor enthusiasts.

Interested individuals should submit their CV, cover letter, statement of personal objectives, and contact information for 3 references to Dr. James Pestka at pestka@msu.edu. Successful applicants will be generously offered with NIH guideline-based salary and benefits, in addition to being a member of a high-quality research team and a collaborative research environment.

MSU is an affirmative action, equal opportunity employer and is committed to achieving excellence through cultural diversity. The university actively encourages applications and/or nominations of women, persons of color, veterans, and persons with disabilities. Job applicants are considered for employment opportunities and employees are treated without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or veteran status.