

**Department of Microbiology and Molecular Genetics
Michigan State University**

**Research Associate
Posting #812635**

Position Summary

A Research Associate (Post-Doc) position is available in the joint laboratory of Drs. James Pestka and Andrew Olive in the Department of Microbiology and Molecular Genetics at Michigan State University. 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 of lupus and other autoimmune diseases. Drs. Pestka and Olive in collaboration with Dr. Jack Harkema (<https://cvm.msu.edu/directory/harkema>), employ both novel murine fetal liver-derived self-replicating ex vivo alveolar macrophage model (<https://doi.org/10.4049/immunohorizons.2200011>) and an autoimmune experimental mouse model (<https://doi.org/10.1177/0192623319878398>) to examine silica-triggered autoimmunity with respect to 1) how dysregulation of inflammasome activation, cell death, efferocytosis self-antigen release occurs 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. Related novel discoveries have been demonstrated in our recent publications. (<https://academictree.org/microbiology/publications.php?pid=272106>) (<https://www.canr.msu.edu/videos/improving-life-for-those-with-lupus>)



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Duties will include cell culture, molecular biology and biochemistry, complex *in vivo* mouse work, assays of immune function, and 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.

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.

This is a full-time, 12-month fixed-term position with reappointment contingent on satisfactory performance and available funding. Successful applicants will be generously offered with NIH guideline based salary and benefits, in addition to being a member of a superb research team and a collaborative research environment.

Equal Employment Opportunity Statement

All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, citizenship, age, disability or protected veteran status.

Biomedical Physical Sciences
567 Wilson Road, Room 2209
East Lansing, MI 48824-4320

Required Degree

Doctorate

Minimum Requirements

Applicants should hold a PhD in immunology, microbiology, biochemistry, toxicology, or a related field.

Desired Qualifications

Candidates with training in immunological and molecular biological techniques, macrophage biology, and/or autoimmune animal models are encouraged to apply. The ideal individual should have strong experimental skills, organizational skills, as well as the ability to interface with multi-disciplinary researchers.

Required Application Materials

Please submit a CV, cover letter, statement of personal objectives, and contact information for three references to <http://careers.msu.edu> posting #812635.

Together-we-will Statement

The university is requiring all MSU students, faculty and staff to be vaccinated against COVID-19 with limited exceptions. Learn more at: <https://msu.edu/together-we-will/>

Review of Applications Begins On

09/20/2022

Summary of Health Risks

Some duties in this position may include working with animals or unfixed animal tissue.

Website

<https://mmg.natsci.msu.edu/>

MSU Statement

Michigan State University has been advancing the common good with uncommon will for more than 160 years. One of the top research universities in the world, MSU pushes the boundaries of discovery and forges enduring partnerships to solve the most pressing global challenges while providing life-changing opportunities to a diverse and inclusive academic community through more than 200 programs of study in 17 degree-granting colleges.