

COHA Translational Fellowship Opportunity for Residency-Trained Veterinary Specialists

Research Fellowship in Translational Gastroenterology and Inflammatory Bowel Disease Immunology

Area of Research:

This project will focus on the comparative innate mucosal immunology of inflammatory bowel disease and chronic enteropathy in order to train a translational scientist with clinical and basic science research skills.

University and Department:

University of Pennsylvania, Department of Clinical Sciences and Advanced Medicine

Primary Mentor:

Elizabeth Lennon, DVM, PhD, DACVIM, mlennon@vet.upenn.edu, 215-573-6552

Mentor Team:

Elizabeth Lennon, DVM, PhD, DACVIM, Assistant Professor of Veterinary Internal Medicine
Daniel Beiting, PhD, Associate Professor and Director of the Center for Host-Microbial Interactions
De'Broski Herbert, PhD, Associate Professor of Immunology
Meena Bewtra MD, PhD, MPH, Associate Professor of Gastroenterology

Description of Potential Research Project(s):

Our laboratory is interested in comparative mechanisms in human and canine inflammatory bowel disease and chronic enteropathy. This project will evaluate innate immune cell activation and interaction with the microbiome in intestinal mucosal biopsies of human and canine patients with inflammatory bowel disease. The goal of this project is to identify novel genes or cell subtypes that are similarly altered in canine and human IBD, and will synergize with ongoing basic research in mouse models of IBD to investigate disease mechanisms. The fellow will utilize cutting-edge research techniques, which could include the following, based on individual preference and study design: intestinal epithelial and lamina propria mononuclear cell isolation, RNA sequencing and single cell RNAseq, flow cytometry, and mass cytometry (CyTOF) as well as the use of murine models of IBD to conduct rigorously controlled experiments. The infrastructure for collection of patient-derived samples leverages the IBD Immunology Initiative (I3) at PennMedicine and the Veterinary Clinical Investigations Center (VCIC) at PennVet. The University of Pennsylvania offers the unique advantage of a veterinary school closely associated (a single continuous campus) with a medical school in an Ivy-League setting that houses cutting-edge research resources to optimally enable high impact comparative and translational research. Biobanked human and canine samples are available to facilitate a quick initiation of the research project.

Additional Training Opportunities:

The environment for postdoctoral fellows at Penn is ideal due to the rich postdoc community and resources through the Biomedical Postdoctoral Programs (BPP) and Biomedical Postdoctoral Council (BPC). The BPC coordinates career development, social, and institutional infrastructure to ensure a successful experience. Grant development workshops are held regularly, including frequent K award workshops. One-on-one grantsmanship consulting for K award applications is available at PennVet with Leslie King, PhD, who is a highly skilled grant editor utilized by even experienced faculty. Chalk Talks with faculty are held on an as-needed basis for faculty and postdocs who are planning to submit grants. Other opportunities include a Career Development Series (recent topics: Negotiation Skills Workshop (6 hours), Strengthening Your Leadership). Many Research-In-Progress Seminars occur each week including the Immunology Graduate Group Distinguished Seminar Series, the Institute for Immunology Research-In-Progress presentations, PennMedicine Division of Gastroenterology weekly Grand Rounds and IBD journal club, Gastroenterology weekly Research-In Progress, and Microbiology seminar series amongst many others. Responsible Conduct of Research training is available on a regular basis for postdoctoral fellows.

Fellowships are for 2 years and provide stipend and employee benefits at the NIH post-doctoral pay scale, plus a total of \$2500 for travel. Fellows must be U.S. citizens or permanent residents. Fellows may supplement their stipend with up to 25% effort towards clinical work, if such work is in alignment with the research and career development plan and can be financed separately by the training institution.

This cohort of fellows will have a start date of fall 2022.

Biosketch of primary mentor

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Elizabeth More Lennon

eRA COMMONS USER NAME (credential, e.g., agency login): LIZ_LENNON

POSITION TITLE: Assistant Professor, Clinical Sciences and Advanced Medicine

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of New Hampshire, Durham, NH	BS	05/02	Animal Sciences
North Carolina State University, Raleigh, NC	DVM	05/07	Veterinary Medicine
North Carolina State University, Raleigh, NC	DACVIM	07/11	Veterinary Internal Medicine Residency
North Carolina State University, Raleigh, NC	PhD	05/15	Comparative Biomedical Sciences

A. Personal Statement

I am an Assistant Professor and Clinician-Scientist at the University of Pennsylvania School of Veterinary Medicine. I am a veterinarian, board-certified in veterinary internal medicine, and I study intestinal mucosal immunology. As a veterinarian, I am interested in investigating diseases that affect both animals and humans. As a K01-funded investigator, I demonstrated novel anti-inflammatory mechanisms of mast cells in a model of spontaneous colitis, including production of anti-inflammatory and anti-fibrotic bone morphogenetic proteins (BMPs), utilizing mast cell-epithelial co-culture models among other techniques. I currently study the mucosal immunology and crosstalk between intestinal epithelial cells and the immune system with a focus on mast cells and their anti-inflammatory mechanisms in inflammatory bowel disease.

B. Positions and Honors**Positions and Employment**

2007-2008	Small Animal Rotating Internship, Michael J. Ryan Veterinary Hospital, University of Pennsylvania, Philadelphia, PA
2008-2011	Small Animal Internal Medicine Residency, College of Veterinary Medicine, North Carolina State University, Raleigh, NC; Diplomate of the American College of Veterinary Medicine (Small Animal Internal Medicine) attained, 2011
2011-2014	Doctoral Student, National Institutes of Health T32 Research Fellowship, Gastrointestinal Physiology, Comparative Biomedical Sciences, North Carolina State University, Raleigh, NC
2014-2015	Research Assistant Professor, College of Veterinary Medicine, North Carolina State University, Raleigh NC
2015-2019	Assistant Professor, College of Veterinary Medicine, University of Tennessee, Knoxville TN
2019-present	Assistant Professor, School of Veterinary Medicine, University of Pennsylvania, Philadelphia PA

Other Experience and Professional Memberships

2003-2009	American Veterinary Medical Association
2007-present	Licensed Veterinarian, State of North Carolina
2009	<i>Ad hoc</i> Reviewer, Journal of the American Veterinary Medical Association