

Lucy Mailing, B.A.

M.D./Ph.D. Candidate | Lmaili2@illinois.edu

Division of Nutritional Sciences & University of Illinois College of Medicine
University of Illinois at Urbana-Champaign
906 South Goodwin Avenue, Urbana, IL 61801

EDUCATION



University of Illinois, Medical Scholars Program (2015-2024)

Ph.D., Nutritional Sciences, Urbana-Champaign (expected 2019, GPA 3.97)

Dissertation: *“Diet and exercise modulate the gut microbiome with implications for health and disease”*.

M.D., Chicago (expected 2024)



Kalamazoo College (2012-2015)

B.A. in Biology, (Neuroscience concentration, Psychology minor)

GPA 3.96, summa cum laude

Thesis: *“Effects of bacterial metabolite butyrate and fiber-free diet on allergic phenotype in a murine model of peanut allergy.”*

CAREER PROFILE

Research objective: The gut is home to a dense consortium of microbes, collectively called the gut microbiota, that play crucial roles in host physiology and pathophysiology. An altered gut microbiota, or “dysbiosis”, has been associated with a wide range of chronic diseases. My research objective is to understand how lifestyle factors, such as diet and exercise, can influence gut microbial communities with potential implications for human health.

Career goals: I seek to make a significant impact on the greater scientific and medical community through both outstanding clinical practice and novel academic research. I hope to combine my research expertise in the gut microbiome, nutrition, and exercise science with a medical background in integrative medicine and gastroenterology to ultimately change the way we approach the prevention and treatment of chronic disease.

JOURNAL PUBLICATIONS

7. **Mailing, LJ**, Allen JM, Buford TW, Fields CJ, Woods JA. Exercise and the gut microbiome: a review of the evidence, potential mechanisms, and implications for human health. *Exercise & Sport Sciences Reviews* (2019). [DOI: 10.1249/JES.000000000000183](https://doi.org/10.1249/JES.000000000000183).

6. **Mailing, LJ**, Allen JM, Rytych J, Sun Y, Pence BD, Bhattacharya TK, Park P, Liu TW, Swanson K, Fahey GC, Rhodes JS, Kelley KW, Johnson RW, Woods JA. Behavioral response to fiber feeding is cohort-dependent and related to gut microbiota composition in mice. *Behavioural Brain Research* (2019). [DOI: 10.1016/j.bbr.2018.09.012](https://doi.org/10.1016/j.bbr.2018.09.012)
5. Matt SM, Allen JM, Lawson Ma, **Mailing LJ**, Woods JA, Johnson, RW. Butyrate and dietary soluble fiber improve neuroinflammation associated with aging in mice. *Frontiers in Immunology* (2018). [DOI: 10.3389/fimmu.2018.01832](https://doi.org/10.3389/fimmu.2018.01832)
4. Niemiro GM, Allen JM, **Mailing LJ**, Khan NA, Holscher HD, Woods JA, De Lisio M. Effects of endurance exercise training on inflammatory circulating progenitor cell content in lean and obese adults. *Journal of Physiology* (2018). [DOI: 10.1113/JP276023](https://doi.org/10.1113/JP276023)
3. Allen JM, **Mailing LJ**, Niemiro GM, Moore R, Cook MD, White BA, Holscher HD, Woods JA. Exercise alters gut microbiota composition and function in lean and obese Humans. *Medicine & Science in Sports & Exercise* (2018). [DOI: 10.1249/MSS.0000000000001495](https://doi.org/10.1249/MSS.0000000000001495).
2. Allen JM, **Mailing LJ**, Cohrs J, Salmonson C, Fryer J, Nehra V, Kashyap P, White BA, Woods JA. Exercise training-induced modifications of the gut microbiota can mediate host response to microbial colonization and colitis insult in gnotobiotic mice. *Gut Microbes* (2018). [DOI: 10.1080/19490976.2017.1372077](https://doi.org/10.1080/19490976.2017.1372077)
1. Nehra, V, Allen, JM, **Mailing, LJ**, Kashyap, PC, Woods, JA. Gut Microbiota: modulation of host physiology in obesity. *Physiology* (2016). [DOI: 10.1152/physiol.00005.2016](https://doi.org/10.1152/physiol.00005.2016).

PREVIOUS RESEARCH EXPERIENCE



Research Associate, Department of Biology, Kalamazoo College (2013-2015)

- Studied proteins implicated in Alzheimer’s Disease from an evolutionary perspective using molecular techniques
- Worked as sole research associate under the direction of Dr. Jim Langeland, Professor of Biology



Research Intern, Department of Pathology, University of Chicago (2014)

- Studied the interactions between dietary fiber and the gut microbiota in a mouse model of peanut allergy
- Worked under the direction of Dr. Cathryn Nagler, Bunning Food Allergy Professor; wrote up results as a senior thesis for Kalamazoo College



Research Intern, Department of Physiology, University of Michigan (2013)

- Studied synaptic plasticity in hippocampal cell culture using molecular techniques and high-resolution confocal imaging
- Worked under Dr. Michael Sutton, Associate Professor of Molecular & Integrative Physiology

HONORS AND AWARDS

Young Scientist Award, <i>International Scientific Conference on Probiotics</i>	2019
<i>Prebiotics, Gut Microbiota, and Health</i>	
William Rose Endowed Award, <i>Division of Nutritional Sciences, UIUC</i>	2018
Dissertation Completion Fellowship, <i>Graduate College, UIUC</i>	2018
Emerging Leaders in Nutrition Science Award, <i>American Society for Nutrition</i>	2017
Nutrition Symposium Poster Award, <i>Division of Nutritional Sciences, UIUC</i>	2017
Margin of Excellence Travel Award, <i>Division of Nutritional Sciences, UIUC</i>	2017
Gamma Sigma Delta Honors Society, <i>College of ACES, UIUC</i>	2016
Emerging Leaders in Nutrition Science Award, <i>American Society for Nutrition</i>	2016
Margin of Excellence Travel Award, <i>Division of Nutritional Sciences, UIUC</i>	2016
Jonathan Baldwin Turner Graduate Fellowship, <i>College of ACES, UIUC</i>	2015
William E. Praeger Prize in Biology, <i>Kalamazoo College</i>	2015
Phi Beta Kappa Honors Society, <i>Kalamazoo College</i>	2015
Chi Alpha Sigma National College Athlete Honors Society	2015
NCAA Division III Soccer Academic All-American	2014
Winifred Peake Jones Prize in Biology, <i>Kalamazoo College</i>	2013
Physical Education Prize, <i>Kalamazoo College</i>	2013
Michigan Intercollegiate Athletic Association Academic Honor Roll	2013
Alpha Lambda Delta National Scholastic Honor Society	2013
Lux Esto Scholarship, <i>Kalamazoo College</i>	2012
National Merit Finalist, <i>National Merit Scholarship Corporation</i>	2012
Cengage Learning & Birmingham SCHOLAR Scholarships	2012

GRANT & RESEARCH SUPPORT

Margin of Excellence Research Award, <i>Division of Nutritional Sciences, UIUC</i>	2019
<i>“Efficacy of the autoimmune protocol diet on the gut microbiome and gut barrier function in eczema and psoriasis patients” - \$5,000.</i>	
Crowdfund for AIP study, <i>Independent contributions, Indiegogo</i>	2019
<i>“Efficacy of the autoimmune protocol diet on the gut microbiome and gut barrier function in eczema and psoriasis patients” - \$8,510.</i>	

PROFESSIONAL PRESENTATIONS

10. **Mailing LJ**, Allen JA, Wang SS, Kashyap P, White BA, Woods JA. Effects of transplanted exercised vs. sedentary gut microbiota on gene expression in gnotobiotic mice. Oral presentation, *International Scientific Conference on Probiotics, Prebiotics, Gut Microbiota, and Health* (2019).
9. **Mailing LJ**, Woods JA. Training the gut: how exercise impacts the gut microbiota and gut barrier. Poster presentation, *Experimental Biology* (2019).
8. **Mailing LJ**, Allen JM, Niemi G, Cohrs J, Holscher H, De Lisio M, Woods JA. Six weeks of aerobic exercise improves markers of insulin sensitivity and metabolic endotoxemia: correlations with the gut microbiota. Poster presentation, *American College of Sports Medicine Conference* (2018).
7. **Mailing LJ**, Allen JM, Niemi G, Cohrs J, Holscher H, De Lisio M, Woods JA. Effects of a six week aerobic exercise intervention on the composition of oral and skin microbiota: a pilot study. Poster presentation, *Experimental Biology* (2018).
6. **Mailing LJ**, Allen JM, Niemi G, Cohrs J, Holscher H, De Lisio M, Woods JA. Effects of a 6 week aerobic exercise intervention on gut bacterial metabolites in lean and obese adults. Oral presentation, *American College of Sports Medicine Conference* (2017).
5. **Mailing LJ**, Allen JM, Niemi G, Cohrs J, Holscher H, De Lisio M, Woods JA. Effects of a 6 week aerobic exercise intervention on gut bacterial metabolites in lean and obese adults. Poster presentation, *Experimental Biology* (2017).
4. **Mailing LJ**, Allen JM, Nehra V, Holscher H, VanDyke C, Eden K, Swanson K, Boardman L, Murray J, Jensen M, Woods JA. Utilizing the gut microbiota to predict weight loss from a volumetric diet and exercise program in obese adults. Poster presentation, *Conference for Individualizing Medicine* (2016).
3. **Mailing LJ**, Allen JM, Liu TW, Bhattacharya TK, Park P, Pence BD, Johnson RW, Fahey GC, Swanson K, Rhodes JS, and Woods JA. Pectin feeding for 16 Weeks improves learning and memory in young C57Bl/6J Mice: a relationship to the gut microbiota? Poster presentation, *Experimental Biology* (2016).
2. **Mailing LJ**, Feehley T, Nagler C. Effects of bacterial metabolite butyrate and fiber-free diet on allergic phenotype in a murine model of peanut allergy. Senior thesis & poster presentation, *Kalamazoo College Diebold Symposium* (2015).

1. **Mailing, LJ**, Henry FE, Sutton MA. Homeostatic changes in synaptic plasticity driven by phosphatidic acid mediated mTORC1 signaling. Oral presentation, *University of Michigan Summer Undergraduate Research Symposium* (2013).

UNDERGRADUATE STUDENTS DIRECTLY MENTORED

Name	Degree	Period of Training	Current/Last Known Position
Jared Weeks	Molecular & Cellular Biology	2015-2018	Medical student at University of Illinois Rockford
Josh Cohrs	Molecular & Cellular Biology	2015-2018	University of Illinois College of Law, Baxter International
Collin Weintraub	Molecular & Cellular Biology	2015-2017	Medical student at Virginia Commonwealth University
John Zahour	Molecular & Cellular Biology	2016-2018	Medical student at Saint Louis College of Medicine
Monica Patel	Molecular & Cellular Biology	2016-2018	Dental student at University of Illinois at Chicago
Selena Wang	I-health	2015-2019	Applying to MD/PhD graduate programs
Haily Stillabower	Kinesiology & Community Health	2016-2019	Applying to DO/PhD graduate programs
Julia Beck	Molecular & Cellular Biology	2016-2019	Applying to MD programs
Avani Patel	Molecular & Cellular Biology	2017-2019	Applying to MD programs
Do Yeon Kim	Agricultural & Biological Engineering	2018-2019	Applying to PhD programs
Nisheka Vanjani	Molecular & Cellular Biology	2018-2019	
Megha Parikh	I-health	2018-2019	
Akram Mahdi	Molecular & Cellular Biology	2019	

UNIVERSITY SERVICE

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Willard J. & Priscilla F. Visek Lecture Planning Committee	2018-2019
College of Medicine Research Day Planning Committee	2018-2019
University Librarian's Student Advisory Council	2016-2017
University Medical Student Council	2015-2018
Medical Scholars Program Advisory Committee	2015-2018

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

American Physician Scientists Association	2018-present
American Gastroenterological Association	2018-present
International Scientific Association for Probiotics and Prebiotics - Students and Fellows Association	2019-present

RESEARCH OUTREACH / WEB-BASED WRITING



NextGen Medicine, Founder & Writer (Aug 2017 – present)

Write blog articles distilling complex scientific and medical literature on the gut microbiome, nutrition, and exercise science into practical, evidence-based articles for the educated lay person. www.NGmedicine.com



Kresser Institute, Senior Research Associate & Writer (Feb 2015 – present)

Distill scientific and medical literature in a variety of research areas into evidence-based blog articles intended for a general audience. www.kresserinstitute.com
