

*Curriculum Vitae*

# Meli'sa S. Crawford

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## EDUCATION

- 08/16-5/2019      Ph.D.      **Arizona State University (ASU)**, Biology, focus in Physiology  
School of Life Sciences  
Advisor: Dr. Karen L. Sweazea
- \*08/14-05/16      **Arizona State University**, Biological Design  
Ira A. Fulton Schools of Engineering  
Advisor: Dr. Karen L. Sweazea
- 8/08 – 5/12      B.S.      **University of Arizona**, Psychology/Molecular and Cellular Biology
- \*Applied and accepted into the School of Life Sciences (ASU) Biology, Ph.D. program

## EXPERIENCE

- 01/2025- present      **Rutgers University-New Brunswick**  
Assistant Professor  
Department of Animal Sciences  
School of Environmental and Biological Sciences
- 2020-2024      **University of California, Riverside**  
*Postdoctoral Fellow*  
**Research:** Effects of agricultural dust on intestinal homeostasis  
**Principle Investigator:** Dr. Declan F. McCole  
**Co- Principle Investigator:** Dr. Tara M. Nordgren
- 06/17-5/19      **Arizona State University**  
*Graduate Student Researcher*  
**Research:** Novel soil-derived compound alleviates metabolic risk factors  
**Principle Investigator:** Dr. Karen L. Sweazea
- 02/15-10/18      **Arizona State University**  
*Graduate Student Researcher*  
**Research:** Poor Nutrition Promotes Simple Hepatic Steatosis in Adolescents  
**Principle Investigator:** Dr. Karen L. Sweazea
- Arizona State University**  
*Graduate Student Researcher*  
**Research:** Impact of shifting gut microbiota on the development of simple steatosis during a high-fat diet  
**Principle Investigator:** Dr. Karen L. Sweazea

## RESEARCH GRANTS

- 2021 Western Center of Agricultural Health and Safety- UC Davis (\$10,000)  
Graduate and Professional Student Association Jumpstart Grant-ASU (\$2,000.00)  
Graduate and Professional Student Association Research Grant- ASU (\$2,000.00)

Sigma-Xi Grant-in-Aid Research Grant (\$1,000.00)

Arizona State University RTI Research Grant (\$1,500.00)

### **PEER-REVIEWED PUBLICATIONS**

1. **Crawford, MS.,** Ulu, A., Ramirez, B., Santos, AN., Chatterjee, P., Canale, V., Manz, S., Lei, H., Soriano, SM., Nordgren, TM., McCole, DF. (2024). Respiratory Exposure to Agriculture Dust Extract Alters Gut Commensal Species and Key Metabolites in Mice. *In preparation*.
2. **Crawford, MS.,** Ulu, A., Ramirez, B., Santos, AN., Chatterjee, P., Canale, V., Manz, S., Lei, H., Nordgren, TM., McCole, DF. (2023). Respiratory Exposure to Agricultural Dust Extract Promotes Increased Intestinal *Tnfa* Expression, Gut Barrier Dysfunction and Endotoxemia in Mice. *American Journal of Physiology-Gastrointestinal and Liver Physiology*. <https://doi.org/10.1152/ajpgi.00297.2022>
3. Spalinger, MS., Canale, V., Becerra, A., Shawki, A., **Crawford, MS.,** Santos, A., Chatterjee, P., Li, J., Nair, M., McCole, DF. (2023) PTPN2 regulates bacterial clearance in a mouse model of enteropathogenic and enterohemorrhagic *E. coli* infection. *JCI Insight*. [10.1172/jci.insight.156909](https://doi.org/10.1172/jci.insight.156909)
4. Mohr, A., **Crawford, MS.,** Jasbi, P., Fessler, S., Sweazea, KL. (2022) Lipopolysaccharide and the gut microbiota: Considering serotype. *FEBS Letters*. <https://doi.org/10.1002/1873-3468.14328>
5. Kozlova EV, Carabelli B, Bishay AE, Liu R, Denys ME, Macbeth JC, Piamthai V, **Crawford MS,** McCole DF, Zur Nieden NI, Hsiao A, Curras-Collazo MC. (2022) Induction of distinct neuroinflammatory markers and gut dysbiosis by differential pyridostigmine bromide dosing in a chronic mouse model of GWI showing persistent exercise fatigue and cognitive impairment. *Life Sciences*. <https://doi.org/10.1016/j.lfs.2021.120153>
6. Lei, H., **Crawford, MS.,** McCole, DF (2021). JAK-STAT Pathway Regulation of Intestinal Permeability: Pathogenic Roles and Therapeutic Opportunities in Inflammatory Bowel Disease. *Pharmaceuticals*. <https://doi.org/10.3390/ph14090840>
7. Spalinger MR., **Crawford MS.,** Bobardt SR., Li J., Sayoc-Becerra A., Santos AN., Shawki A., Chatterjee, P., Nair MG., McCole DF. (2021). Loss of protein tyrosine phosphatase non-receptor type 2 reduces IL-4-driven alternative macrophage activation. *Mucosal Immunology*. <https://doi.org/10.1038/s41385-021-00441-3>
8. **Crawford MS.,** Nordgren TM., McCole DF (2021). Every Breath You Take: Impact of Environmental Dust Exposure on Intestinal Barrier Function-From the Gut-Lung Axis to COVID-19. *American Journal of Physiology-Gastrointestinal and Liver Physiology*. <https://doi.org/10.1152/ajpgi.00423.2020>.
9. **Crawford MS.,** Mohr, A., Sweazea KL (2020). Novel organic mineral complex prevents high-fat diet induced changes in the gut and liver of male Sprague-Dawley rats. *Journal of Nutrition and Metabolism*, 2020, 8846401. <https://doi.org/10.1155/2020/8846401>
10. **Crawford MS,** Gumprich E, Sweazea KL (2019). A novel organic mineral complex prevented high fat diet-induced hyperglycemia, endotoxemia, liver injury and endothelial dysfunction in young male Sprague-Dawley rats. *PLOS One*. 2019 <https://doi.org/10.1371/journal.pone.0221392>.
11. **Crawford M,** Whisner, C, Al-Nakkash, L, Sweazea, K. L. (2019). Six-Week High-Fat Diet Alters the Gut Microbiome and Promotes Cecal Inflammation, Endotoxin Production, and Simple Steatosis without Obesity in Male Rats. *Lipids*. 54 (2-3), 119-131. <https://doi.org/10.1002/lipd.12131>
12. Gadau, A., **Crawford, MS.,** Mayek, R., Giraudeau, M., McGraw, KJ., Whisner, CM, Sweazea, KL. (2019). A comparison of the nutritional physiology and gut microbiome of urban and rural house sparrows (*Passer domesticus*). *Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology*, 237, 110332. <https://doi.org/https://doi.org/10.1016/j.cbpb.2019.110332>
13. Mohr, A., Carpenter, K., Basile, A., **Crawford, M.,** Sweazea, KL. (2019). Probiotic supplementation has a limited effect on circulating immune and inflammatory markers in healthy adults: a systematic review of randomized controlled trials. *Journal of the Academy of Nutrition and Dietetics*. 120(4), 548-564. <https://doi.org/10.1016/j.jand.2019.08.018>
14. Grilli, MD., Woolverton, CB., **Crawford, M.,** Glisky, EL. (2016). Self-Reference and Emotional Memory Effects in Older Adults at Increased Genetic Risk of Alzheimer's Disease. *Aging, Neuropsychology and Cognition*. <https://doi.org/10.1080/13825585.22016.1275508>

## **PROFESSIONAL DEVELOPMENT**

- 2023 LS-PAC Models Building Future Faculty in STEM Program  
APS Effective Physiology Teaching Program  
Alpha Kappa Alpha Leadership Conference

## **AWARDS AND RECOGNITIONS**

- 2023 University of California Presidential Postdoctoral Fellowship  
2021 John Forte Distinguished Abstract- Experimental Biology 2021  
2019 John Forte Distinguished Abstract- Experimental Biology 2019  
Martin Frank Diversity Travel Award- American Physiological Society  
2018 2018 Caroline tum Suden/ Frances Hellebrandt Professional Opportunity Award  
2017 3rd Place Poster Presentation at Arizona Physiological Society conference, Flagstaff, AZ  
Graduate College Fellowship- Arizona State University  
2016 Graduate Professional Student Association Travel Grant  
Minority Travel Grant - American Physiological Society  
2014 Bridge to the Doctorate Fellowship- National Science Foundation

## **JOURNAL AD HOC REVIEWER**

- 2024 PLOS ONE  
American Journal of Physiology- Physiological Genomics  
American Journal of Physiology- Gastrointestinal and Liver Physiology  
American Journal of Physiology- Lung Cellular and Molecular Physiology  
2023 American Journal of Physiology- Physiological Genomics  
Journal of Nutrition and Metabolism  
2022 Cell Press- Heliyon  
American Journal of Physiology- Lung Cellular and Molecular Physiology  
2021 Nature Communications- Communications Biology  
Journal of Nutrition and Metabolism  
PLOS ONE  
American Journal of Physiology-Lung

## **INVITED TALKS**

- Oct. 2024 **WAESO Empowering the Next Generation in STEM Conference**, Panel Discussion  
Jul. 2024 **LS-PAC Models Diversity in STEM Conference**, *The Black Table Talk: The Real Low-Down on Surviving Higher Education as a Black Scientist; After Hours: The Black Woman Experience in STEM*  
April 2024 **Conference for Emerging Black Academics in STEM-Caltech**  
Nov. 2023 **Stanford.Berkely.UCSF Next Generation of Faculty Symposium**: Talk  
Sept. 2023 **FASEB GI Epithelium Conference**: Flash Talk  
May 2023 **NSF LSAMP BD “Oh The Places You’ll Go”** Panel Discussion, Washington, DC  
April 2021 **American Physiological Society**, John Forte Distinguished Abstract Plenary, Virtual

## **NEWS AND MEDIA**

- May 2023 *Western Alliance to Expand Student Opportunities*, [WAESO Alumni](#)

Crawford, Meli'sa S. – CV

March 2023 *Inside UCR* "[Biomedical Sciences Postdoc Awarded UC Fellowship](#)" by Iqbal Pittalwala

July 2022 *American Physiological Society-* "[American Toxic](#)" by Lauren Arcuri  
Interviewed about my postdoctoral work focusing on ambient air pollution exposure on gastrointestinal health.

Jan 2022 *American Physiological Society-* "[Staying Afloat](#)" by Glenn Cook  
Interviewed about transitioning to a postdoctoral position during the COVID-19 pandemic.

### **ACADEMIC SERVICE**

2021- present *Animal Care and Experimentation Committee, American Physiological Society*  
Bring relevant policy issues concerning the care and use of animals in research and teaching to the attention of the Society's Council and the membership. Three-year appointment beginning May 1, 2022.

2021-2022 *Postdoctoral Mentorship Program at UCR*  
Served as a postdoc mentor for three PhD students who were in search of postdoctoral opportunities or industry positions following graduation.

January 2021 *Quality Improvement Virtual Conference Judge, Riverside, California*  
Supported this annual research conference by judging student presentations.

2020-2021 *UCR Biomedical Sciences Division Call to Action: Diversity Task Force*  
This committee is responsible for evaluating Division practices, policies and opportunities. Additionally, we report to the Division and School of Medicine leadership the efficacy of implemented changes in expanding the growth and success of students, staff, fellows and faculty experiencing racism and prejudice.

### **UNDERGRADUATE MENTORING**

| <b>Role</b>                   | <b>Student</b>  | <b>Research Topic</b>                          |
|-------------------------------|-----------------|--|
| Postdoctoral Mentor 2021-2022 | Brianna Ramirez | MYD88 pathway following HDE exposure           |
| Committee Member 2016-2018    | Alice Gadau     | Urban vs Rural House Sparrow Microbiome        |
| Committee Member 2016-2019    | Ashlee Starr    | Measuring insulin signaling in skeletal muscle |
| Committee Member 2016-2019    | Courtney Wood   | Examining the effects of HFD in liver disease  |

### **PROFESSIONAL MEMBERSHIPS**

2021- present American Society for Microbiology (ASM)

2020-present Society for Mucosal Immunology (SMI)

2017-present Alpha Kappa Alpha Sorority, Incorporated.

2015-present American Gastrointestinal Association (AGA)

2015-present American Physiological Society (APS)