

EMILY VAN SYOC

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Education and Training

- 2019-present **Ph.D. The Pennsylvania State University**
Integrative & Biomedical Physiology and Clinical & Translational
Sciences Dual-Title Ph.D. Program
Current GPA: 3.70
- 2019 **M.S. The University of Wyoming**
Soil Science
- 2016 **B.S. California State Polytechnic University San Luis Obispo**
Animal Science, minor Sustainable Agriculture

Research and Professional Experience

- 2020-present Training Fellow
- 2019-2020 Graduate Research Assistant, Huck Institute of Life Sciences, Penn State
- 2019 Data Science Intern, WEST Ecosystem Services, Laramie, WY
- 2019 Data Science Intern, Wyoming Geographical Information Center, Laramie, WY
- 2018-2019 Graduate Research Assistant, Department of Ecosystem Science & Management,
University of Wyoming
- 2017 NSF EPSCOR Summer Research Apprenticeship Program Mentor, University of
Wyoming
- 2016-2018 Graduate Teaching Assistant, Department of Ecosystem Science & Management,
University of Wyoming

Awards and Scholarships

- 2021 2nd place poster presentation, Huck Life Sciences Symposium, Computational
Biology section
- 2019- PSU/NIDDK funded “Integrative Analysis of Metabolic Phenotypes Predoctoral
Training Program (T32DK120509)”
- 2018 Western Sustainable Agriculture and Education Graduate Student Grant
- 2017 NSF Graduate Research Fellowship Honorable Mention
- 2012 Boyle-McOmie Scholarship, California Polytechnic State University

Presentations and Posters

1. Energy restriction and physical activity alter the metabolomic profile in the tumor microenvironment and in the plasma in the 4T1.2 mammary tumor model of triple negative breast cancer. Oral presentation at the Physiology Colloquium at Penn State. April 2021.
2. Energy restriction and physical activity alter the metabolomic profile in the tumor microenvironment and in the plasma in the 4T1.2 mammary tumor model of triple negative breast cancer. Oral presentation at the Penn State Graduate Exhibition. March 2021.
3. Quantifying the immediate response of the soil microbial community to different grazing intensities on irrigated pastures. Invited talk at the Pennsylvania State University Microbiome Center Seminar. 1 October 2020.

4. The critical role of soil microbiota to sustainable agriculture: Quantifying short-term microbial and vegetation feedback to intensive grazing. Department of Ecosystem Science & Management. University of Wyoming. 16 May 2019.
5. 'Mob' grazing and the short-term effect on soil health. Wyoming Stockgrowers Association Range Health Soil Workshop. 5 June 2017.
6. Accepted poster abstract: Effect of metformin treatment on the gut mycobiome of type 2 diabetes patients: A meta-analysis. Submitted to American Society of Microbiology at World Microbe Forum, June 2021.
7. Accepted poster abstract: Effect of metformin treatment on the gut mycobiome of type 2 diabetes patients: A meta-analysis. Submitted to Penn State Huck Life Sciences Symposium, May 2021.
8. Poster: The critical role of soil microbiota to sustainable agriculture: Quantifying short-term microbial and vegetation feedback to intensive grazing. Wyoming Weed & Pest Conference. Sheridan, WY. 2018.
9. Poster: Quantifying short-term soil biological and vegetation feedback from high-intensity, short-duration grazing versus conventional grazing. Ecological Society of America. New Orleans, LA. August 2018.

Refereed Publications

1. **Van Syoc, E.**; Carrillo Gaeta, N.; Ganda, E. Choice of Commercial DNA Extraction Method Does Not Affect 16S Sequencing Outcomes in Cloacal Swabs. *Animals* 11(5), 1372 (2021). <https://doi.org/10.3390/ani11051372>
2. Gaeta, N., **Bean, E.**, Miles, A.M., Goncalves de Carvalho, D.U.O., Aleman, M.A.R., Carvalho, J.S., Gregory, L., Ganda, E. A Cross-Sectional Study of Dairy Cattle Metagenomes Reveals Increased Antimicrobial Resistance in Animals Farmed in a Heavy Metal Contaminated Environment. *Front. Microbiol.* 11, 2801 (2020). doi:10.3389/fmicb.2020.590325
3. In review: **Van Syoc, E.**, Van Diepen, L.T.A, Albeke, S., and Scasta, D. Quantifying the Immediate Response of the Soil Microbial Community to Grazing Intensities on Irrigated Pastures. Submitted March 2021 to *Agr. Eco. Environ.*
4. In preparation: **Van Syoc, E.**, Turbitt, W., Xu, Y., Patterson, A., and Rogers, C.J. Weight Gain Alters the Metabolomics Profile in the Tumor Microenvironment in the 4T1 Mammary Tumor Model. Planned submission July 2021 to *Cancer Prev.*
5. In preparation: **Van Syoc, E.**, Weaver, E., Ramechandran, R., Ganda, E. Metformin Alters the Microbial Profile in an Avian Model of Polycystic Ovarian Syndrome. Planned submission September 2021 to *Animal Microbiomes.*

Technical Publications

1. **Bean, E.** DADA2 Classification: DADA2 Taxonomic Classification for 16S. Bioinformatics Recipes, 2020. Available at: <https://www.bioinformatics.recipes/recipe/list/27faf79c/>
2. **Bean, E.P.** 2019. The Critical Role of Soil Microbiota to Sustainable Rangelands: Quantifying Short-Term Microbial and Vegetation Responses to Intensive Grazing. Available from ProQuest Dissertations & Theses A&I. 2320990099.

3. **Bean, E.,** and Van Diepen, L.T.A. Quantifying Short-Term Soil Biological and Vegetation Feedback from High-Intensity, Short-Duration Grazing Versus Conventional Grazing. In: Field Days Bulletin, University of Wyoming. Wyoming Agricultural Experiment Station. P. 32-33. Available from: <https://projects.sare.org/information-product/quantifying-short-term-soil-biological-and-vegetation-feedback-from-high-intensity-short-duration-grazing-versus-conventional-grazing/>

Synergistic Activities

- Student member, American Society of Microbiology
- Student member, Microbiome Center, Penn State
- Meeting Coordinator, T32 Training Program 2020-2021
- Bioinformatics Data Reproducibility Bootcamp, 2020
- Teaching assistant at the Microbiome Center Kickstarter Bootcamp, 2020
- Teaching experience, hands-on laboratory classes (2) and lecture courses (3)