

VAL Z. SCHULL (they/them/theirs)

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EDUCATION

- Ph.D. Agricultural and Biological Engineering Purdue University West Lafayette, IN Expected 2020
Specialization: Environmental and Natural Resource Engineering
Principal Advisor: Margaret Gitau (mgitau@purdue.edu)
Dissertation: *Water quality integrity in the food-energy-water (FEW) nexus: solutions for water resources in a changing world*
- M.S. Agricultural and Biological Engineering Purdue University West Lafayette, IN 2017
Specialization: Environmental and Natural Resources Engineering
Principal Advisor: Margaret Gitau
Thesis: *A method for assessing and predicting water quality status for improved decision-making and management*
- B.S. Biological and Environmental Engineering Cornell University Ithaca, NY 2015
Natural Resources
Specializations: Bioenvironmental Engineering (BEE)
Environmental Science (NTRES)
Advisors: M. Todd Walter (mtw5@cornell.edu)
Rebecca Schneider (rls11@cornell.edu)

RESEARCH EXPERIENCE

- Water Resources and Ecohydrological Engineering Graduate Research Assistant** May 2016 –
School of Agricultural and Biological Engineering, Purdue University
- **Impact of Climate Change on the Food-Energy-Water Nexus:** Addressing how the food-energy-water (FEW) nexus framework must also include how climate change will impact the synergies within the system
 - **Food-Energy-Water (FEW) Nexus Tool Analysis:** Studying current literature of how the (FEW) nexus is being modeled, as well as assessing which tool would benefit decision-makers in terms of water quality management
 - **Water Quality Indices Development:** Enhancing common methodologies for water quality index development by incorporating water quality standards in the formulation
- Homer Thompson Research Vegetable Farm Undergraduate Research Assistant** May – August 2014
Department of Horticulture, Weed Science, Cornell University
- Researched the development of weed control programs for vegetables and fruit, mechanical cultivation, alternative cropping and mulch management systems to reduce herbicide use in vegetable production
 - Worked in the greenhouses, aided in sampling, managing the fields, harvesting, and entering and collecting data of weed yield and vegetables due to different herbicide applications
- Plant Genome Project Research Intern** June – August 2013
Boyce Thompson Institute of Plant Research, Cornell University
- Researched insect herbivory of *Rhopalosiphum maidis* and *Spodoptera exigua* and the plant resistance in maize mechanism of releasing benzoxazinoids compounds
 - PCR, qPCR, HPLC, and observation as research methods, such as for mechanical damage on the plant leaves and stems from caterpillars or counting the abundance of aphids on plants
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- Love Lab Undergraduate Research Assistant** May – August 2012
Department of Plant Breeding and Genetics, Cornell University
- Researched the genetics and breeding methods of alfalfa and other forage grasses.
 - Assisted and worked with the head of the Forage Project in sampling, harvesting, and entering data of the grasses and yield in a variety of trials.
 - Worked in the greenhouses and collected data of the development of disease resistant alfalfa plants.

TEACHING AND MENTORING EXPERIENCE

Mentor, Purdue University Summer 2018
School of Agricultural and Biological Engineering

- Supported an undergraduate student doing their summer internship program working with the Water Resources and Ecohydrologic Engineering Research group, providing guidance through the development of a GUI interface for the DHM-WM hydrologic model

SURF Mentor, Purdue University Summer 2017
School of Agricultural and Biological Engineering

- Supported an undergraduate student in the Summer Undergraduate Research Fellowship Program (SURF) as they worked with the Water Resources and Ecohydrologic Engineering Research group, providing guidance through the development of a GUI interface for the Unweighted Multiplicative Water Quality Index model

Program Assistant, CURIE Academy Summer 2015
Diversity Programs in Engineering, Cornell University

- Provided full-time, round-the-clock guidance and shared-supervision to 50 high school women participating in this one-week summer residential program focused on engineering experiences
- Assist in administrative tasks necessary to ensure the program ran smoothly

Program Assistant, Cornell University International Debate Camp Summer 2014
School of Industrial Labor Relations, Cornell University

- Full-time, round-the-clock guidance and shared-supervision to 150 high school students participating in this two-week summer residential program focused on developing skills for argumentation and debate
- Traveled to multiple Ivy League Schools to demonstrate the world-class education and benefits of attending such an institution
- Pushed international participants to further develop their English skills and to continue to pursue their interest in argumentation and debate

Undergraduate Teaching Assistant August – December 2014
Department of Biological and Environmental Engineering, Cornell University
Introduction to Computer Programming course

PUBLICATIONS

Schull, V., Daher, B.T., Gitau, M.W., Mehan, S., Flanagan, D.C. (2019) Analyzing FEW Nexus Modeling Tools for Decision-Making and Management Application. *Food and Bioproducts Processing*. Elsevier. <https://doi.org/10.1016/j.fbp.2019.10.011>.

Mijares, V., Gitau, M.W., Johnson, D.R. (2018). A method for assessing and predicting water quality status for improved decision-making and management. *Water Resource Management*. Springer. <https://doi.org/10.1007/s11269-018-2113-3>.

Mijares, V., Meihls, L., Jander, G., & Tzin, V. (2013). Near-isogenic lines for measuring phenotypic effects of DIMBOA-Glc methyltransferase activity in maize. *Plant Signaling & Behavior*, 8(10), e26779. <https://doi.org/10.4161/psb.26779>.

PRESENTATIONS

Oral Presentations

Schull, V., Daher, B.T., Gitau, M.W., Mehan, S., Flanagan, D.C. (2019) Analyzing FEW Nexus Modeling Tools for Decision-Making and Management Application. 40th Annual Indiana Water Resources Association. Syracuse, IN, June 27th, 2019.

Mijares, V., Gitau, M.W., Johnson, D.R. (2018). Methodologies for Assessing and Predicting Water Quality Status for Improved Decision-Making and Management. American Society of Agricultural and Biological Engineers (ASABE) 2018 Annual International Meeting, Detroit, MI, July 31, 2018.

Poster Presentations

Schull, V., Daher, B.T., Gitau, M.W., Mehan, S., Flanagan, D.C. (2019) Analyzing FEW Nexus Modeling Tools for Decision-Making and Management Application. Agricultural and Biological Engineering Graduate Student Association (ABE GSA) Symposium. West Lafayette, IN, March 24, 2019.

Mijares, V., Gitau, M.W., Johnson, D.R. (2018). Development and Improvement of Water Quality Indices. 39th Annual Indiana Water Resources Association (IWRA) Conference: Ensuring a Sustainable Water Future for Indiana, Bloomington, IN, June 27, 2018.

Mijares, V., Gitau, M.W., Johnson, D.R. (2017). Methodologies for Assessing and Predicting Water Quality Status for Improved Decision-Making and Management. 7th Annual Out in Science, Technology, Engineering, and Mathematics (oSTEM) Conference: Finding Unity in Community, Chicago, IL, November 17, 2017.

Mijares, V., Gitau, M.W., Johnson, D.R. (2017). Enhancement and Testing of Indices for Comprehensive Assessment of Water Quality. 36th Annual Indiana Water Resources Association (IWRA) Conference: Threats To and From Indiana's Water Resources, Turkey Run State Park, Marshall, IN, June 28, 2017.

Mijares, V., Gitau, M.W. (2017). Comprehensive Indicators of Water Quality Status. Tipping Point Planner Collaboration Workshop, Purdue University, West Lafayette, IN, May 16, 2017.

Mijares, V., Gitau, M.W., Johnson, D.R. (2018). Use of Water Quality Indices for Comprehensive Assessment of Water Quality. NCSE Conference 2017: Integrating Environment & Health, Washington, D.C., January 25 2017.

FUNDING/AWARDS

1st Place – What Will We Drink in 2169? Oral Presentation Session March 24, 2019
ABE GSA Symposium

National Science Foundation Research Traineeship (NRT) Program August 2018 – July 2020
NRT-INFIEWS: Sustainable Food, Energy, and Water Systems (SFEWS)

Division of Diversity and Inclusion Travel Grant April 2018
Purdue University

2018 Midwest Trans and Queer Indigenous and People of Color Conference Travel Scholarship April 2018
Gender and Sexuality Center for Queer and Trans Life, University of Minnesota, MN, USA

Agricultural Research Graduate Diversity Research Assistantship Fellowship August 2016 – July 2018
College of Agriculture, Purdue University

PROFESSIONAL SOCIETIES

- **American Water Resources Association (AWRA)** (2019 –)
- **Agricultural and Biological Engineering Graduate Student Association (ABE-GSA)**, Purdue Graduate Student Government Senator (2018 – 2020)
- **American Society of Agricultural and Biological Engineers (ASABE)**, Member (2018 –)
- **Purdue Latinx Graduate Student Organization**, President (2017 – 2018)
- **National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP) at Purdue University**, Vice President (Spring 2018); Member (2017 –)
- **Alpha Epsilon (AE)**, Lifetime member, inducted Spring 2016, Purdue University Chapter, Member
- **Purdue Climate Change Research Center (PCCRC)** Post-Doctoral/Graduate Student Group, Member (2016 –)

SERVICE/OUTREACH

- **Purdue Graduate Student Government Diversity Officer** represented graduate students in the University Senate Equity and Diversity Committee, as well as met with directors of the cultural centers and administrators in the Office of Diversity and Inclusion to discuss how graduate students can support and be supported through diversity and inclusion initiatives (2019 – 2020)
- **Urban Garden and Agricultural Outreach** worked with the Latino Cultural Center at Purdue University in establishing a community garden for the Latinx community, as well as teaching student about urban agriculture (Summer 2018)
- **NOGLSTP Office Hours** held office hours at the Purdue University LGBTQ Center to assist undergraduate and graduate students with STEM-related assignments, projects, as well as offer mentorship in terms of professional and academic development (Spring 2018 – Summer 2019)
- **Search Committee Participant** reviewed resumes and conducted phone and on-sight interviews for the Program Coordinator position for the Lesbian, Gay, Bisexual, Trans, and Queer (LGBTQ) Center at Purdue University (Spring 2018)
- **Search Committee Participant** reviewed resumes and conducted phone and on-sight interviews for the Program Coordinator position for the Latino Cultural Center at Purdue University (Summer 2017)
- **Latino Cultural Center Volunteer Intern** at Purdue University (Summer 2017 –)
- **LGBTQ Center Panelist** volunteer with the Purdue LGBTQ Center to be a panelist for courses that qualify as Language and Culture or Culture/Diversity requirements to discuss how students at Purdue University can provide a more inclusive atmosphere for Lesbian, Gay, Bisexual, Trans, and Queer (LGBTQ) students, as well as describing the obstacles LGBTQ undergraduate and graduate students may face during their time at a higher educational institution (Fall 2017 –)

LEADERSHIP TRAININGS/ INVOLVEMENT

- **oSTEM Leadership Program Participant** participated in a two-part program aimed at organizational leadership development, networking and collaboration for students who are nominated by their respective Out in Science, Technology, Engineering, and Mathematics chapter (February 22nd – 24th, Detroit MI).
- **Purdue University Latinx Student Council Representative** represented the Latinx Graduate Student Organization at Purdue University. Met with the Latino Cultural Center Director and Program Coordinator every two Mondays throughout the semester. The LSU discussed collaborations, campus climate and Latinx students' needs (2018 – 2019)

EXTRACURRICULAR ACTIVITIES

Revolution Powerlifting Syndicate Indiana State Record Holder
Women's 198lb Profession Open, Raw Classic Division
Bench, Squat, Deadlift

September 16, 2017