

Noah J. Langenfeld

USU Research Greenhouses
1410 N. 800 E.
Logan, Utah 84322
noah.langenfeld@usu.edu

Education

- **Ph. D. Plant Science** **December 2024 Intended**
Utah State University
- **B.S., Biochemistry** **May 2020**
B.S., Biology
Certificate: Aquaponics
University of Wisconsin – Stevens Point

Employment

Graduate Research Assistant **July 2020 – Present**
Crop Physiology Lab, Utah State University, Logan, UT

- Worked closely with other graduate students to develop, design, and execute nutrient recycling projects to optimize recovery of nitrogen in closed life support systems for future missions to, on, and from Mars. Managed hydroponics systems and build bioreactors for NASA funded food and plant science projects.

Fresh Market Crew Manager **June 2011 – July 2020**
Flyte Family Farms, LLC, Coloma, WI

- Managed harvest crews to maintain positive morale and GAP adherence while overseeing customer service and operations for consumer-direct sales. Maintained adequate field and greenhouse records to ensure quality control for commercial strawberry and organic blueberry production.

Master Writing Lab Consultant **September 2017 – May 2020**
Writing Lab, University of Wisconsin, Stevens Point, WI

- Advised students on academic and creative literary endeavors for classes and professional aspirations. Maintained confidential student records while promoting ethical adherence to tutoring policies.

Personal Statements Honors Intern **September 2019 – May 2020**
Writing Lab, University of Wisconsin, Stevens Point, WI

- Worked with graduating students to develop strategic plans and personal application materials for admittance into graduate school programs.

Tutoring Mentor**January 2017 – May 2020***Tutoring-Learning Center, University of Wisconsin, Stevens Point, WI*

- Mentored colleagues on pedagogical instruction and content delivery methods. Designed reference and learning materials for students and led group study sessions for undergraduate organic chemistry and plant biology courses

Faculty Assistant**January 2019 – May 2020***Department of Chemistry, University of Wisconsin, Stevens Point, WI*

- Worked closely with faculty members to accurately and timely assess and address student performance. Ensured confidentiality and fairness among student content submissions of learning materials.

Research Experience**Optimization of Nitrogen Recycling for Closed Life Support Systems****July 2020 - Present***Crop Physiology Lab, Utah State University, Logan, UT*

Advisor Dr. Bruce Bugbee

- Designed, build, and operated hydroponics systems and microbial bioreactors to study nitrogen recycling and conversions in closed systems.

Genetics of Nitrifying Bacteria**Fall 2019 - Present***Department of Biology, University of Wisconsin, Stevens Point, WI*

Advisor Dr. Ann Impullitti

- Quantified bacterial population densities using qPCR to determine nitrification presence and abundance in diverse aquaponic systems.

Mechanisms of HIV Protease**Fall 2019 - Present***Department of Chemistry, University of Wisconsin, Stevens Point, WI*

Advisor Dr. Amanda Jonsson

- Studied solved crystallized structures of HIV Protease to elicit possible targets for fighting drug resistance. Worked on digital computational development of possible future inhibitors to block viral life cycle.

Nanobubble Technologies in Aquaponic Systems**Spring 2019***Department of Biology, University of Wisconsin, Stevens Point, WI*

Advisor Dr. Christopher Hartleb

- Monitored continuous fish and plant growth and development in aquaponic systems to determine effects of nanobubble generation in water columns.

Antibiotic Resistance Mechanisms in Bacteria**Fall 2018 – Spring 2019***Department of Chemistry, University of Wisconsin, Stevens Point, WI*

Advisor Dr. Amanda Jonsson

- Explored structural identities of bacterial immune response proteins in relation to aminoglycoside resistant mechanisms for antibiotics.

Hybrid Walleye Stocking Density in Aquaponics**Fall 2017 – Fall 2018***Department of Biology, University of Wisconsin, Stevens Point, WI*

Advisor Dr. Christopher Hartleb

- Tested optimal walleye stocking density in aquaponic systems through water chemistry and organismal growth analysis to promote development of new sustainable options for fish components of aquaponics.

O-GluNAcylation Protein Catalysis**Fall 2017 – Spring 2018***Department of Chemistry, University of Wisconsin, Stevens Point, WI*

Advisor Dr. Amanda Jonsson

- Developed models for protein glycosylation proteins to study effects of sequence identity on structural function.

Publications

- **Langenfeld, N.J.** and Bugbee, B. 2021 (*In review*). Evaluation of three electrochemical dissolved oxygen meters, HortTechnology.
- **Langenfeld, N.J.** and Bugbee, B. 2021. Dissipation rates of oxygen nanobubbles in recirculating systems, USU Crop Physiology Lab, Techniques and Instruments, Utah State University Digital Commons.
- **Langenfeld, N.J.**, Rhodes, S., and Bugbee, B. 2021. Deep-flow hydroponic culture: Copper toxicity at 8 μM (0.13 ppm) in tomato, USU Crop Physiology Lab, Hydroponics/Soilless Media, Utah State University Digital Commons.

Presentations

- Nitrate vs. Ammonium: The Battle of Plant Available Nitrogen, Student Presentation, Logan, UT, Fall 2020
- CREST: Bacteria Fighting Back, Seminar, Chemistry Student Speaker Series, Stevens Point, WI, Fall 2019
- Nanobubble Oxygenation Effects on Fish Growth and Water Nutrients in an Aquaponics System, Poster Presentation, College of Letters and Sciences Undergraduate Research Symposium, Stevens Point, WI, Spring 2019
- Eliciting the Mechanism of Aminoglycoside Resistant NpmA as a rRNA Methyltransferase, College of Letters and Sciences Undergraduate Research Symposium, Stevens Point, WI, Spring 2019
- Influence of Walleye (*Sander vitreus*) Stocking Density on Plant Growth in an Aquaponics System, Poster Presentation, College of Letters and Sciences Undergraduate Research Symposium, Stevens Point, WI, Spring 2018
- OGT Protein Recognition and Catalysis, Poster Presentation, College of Letters and Sciences Undergraduate Research Symposium, Stevens Point, WI, Spring 2018

Unique Coursework

- Environmental Soil Physics, PSC 6670, Dr. Scott Jones Fall 2020
- TEM Workshop: Viruses and Bacteria, Biol 498, Dr. Sol Sepsonwol Spring 2019
- Ecology of Southern Florida, Biol 309, Dr. Brian Barringer Winter 2019
- Techniques in Aquaponics, Biol 384, Dr. Christopher Hartleb Spring 2018
- Environment and Culture of the Mississippi Delta, Geog 387, Lisa Theo Spring 2018
- Post-Secondary Learning Theory and Practicum, Educ 301, Emily Wisinski Fall 2017

Extracurricular Involvement

- President, Biochemistry Club, University of Wisconsin, Stevens Point, WI, Fall 2018 – Spring 2020
- Social Media Coordinator, Chemistry Club, University of Wisconsin, Stevens Point, WI, Fall 2019
- Vice-President, Botany Club, University of Wisconsin, Stevens Point, WI, Fall 2018 – Spring 2019

Volunteer Work

- Coloma Dynamites 4H Club, Coloma, WI 2012-2020
- Waushara County 4H Executive Leaders Board, Wautoma, WI 2016-2018
- Humane Society of Portage County 2016-2018
- Eyes of Hope Animal Shelter, Oxford, WI 2008-2016
- Ice Age Trail Alliance, Coloma, WI 2010-2012

Grants and Fellowships

- Phi Kappa Phi Graduate Fellowship, \$8,500, Funded Spring 2020
- OSCAR Travel Grant (UWSP), American Society for Biochemistry and Molecular Biology Annual Meeting, 2019, \$2000, Funded for Spring 2019
- OSCAR Travel Grant (UWSP), American Society for Biochemistry and Molecular Biology Annual Meeting, 2018, \$1500, Funded for Spring 2018

Awards

- Albertson Medal Spring 2020
- University Leadership Award, University of Wisconsin, Stevens Point, WI Spring 2020
- University Leadership Award, University of Wisconsin, Stevens Point, WI Spring 2019
- Culver-Rogers Award, University of Wisconsin, Stevens Point, WI Spring 2019
- Edgar-Pierson Award, University of Wisconsin, Stevens Point, WI Spring 2019
- University Leadership Award, University of Wisconsin, Stevens Point, WI Spring 2018
- Culver-Rogers Award, University of Wisconsin, Stevens Point, WI Spring 2018

Professional Societies

- Member, *American Society for Biochemistry and Molecular Biology* Fall 2017 – Present
- Member, *American Chemical Society* Fall 2017 – Present

Honor Organizations

- Beta Beta Beta, Biological Honors Society Spring 2019
- Phi Kappa Phi, Collegiate Honor Society Spring 2019
- National Society for Leadership and Success Spring 2018
- Phi Eta Sigma, Freshman Honor Society Spring 2017

Certifications

- Private Pilot Certificate Instrument Rating, *In progress*
- First Aid / AED Certified, Red Cross, 2019
- Pesticide Applicator License, Wisconsin, 2019
- Remote Pilot Certificate, 2018
- Private Pilot Certificate, 2016

References

- Dr. Bruce Bugbee, Department of Plants, Soils, and Climate, Utah State University, Logan, UT, (bruce.bugbee@usu.edu) 435-512-5213
- Dr. Christopher Hartleb, Department of Biology, University of Wisconsin, Stevens Point, WI, (chartleb@uwsp.edu) 715-346-3228
- Dr. Brian Barringer, Department of Biology, University of Wisconsin, Stevens Point, WI, (bbarrin@uwsp.edu) 715-346-2452
- Dr. Amanda Jonsson, Department of Chemistry, University of Wisconsin, Stevens Point, WI, (ajonsson@uwsp.edu) 715-346-2600