ZACHARY W. LATURNER

2008 Colquitt St, Apt 1, Houston, TX 77098
(425) 478-8536
zach.laturner@gmail.com

SUMMARY

My passion is helping the environment and promoting the sustainability of our future society. To accomplish this, I am interested in developing new technologies for resource recovery from organic waste streams with microorganisms.

EDUCATION

Ph.D. Student in Environmental Engineering — *Rice University, Houston, TX* — Expected End: May 2023
Cumulative GPA: 3.94

B.S. in Chemical Engineering — *University of Washington, Seattle, WA* — Sept 2010 – June 2014
Cumulative GPA: 3.55

RESEARCH & FIELD EXPERIENCE

Research Assistant — *Stadler Lab, Department of Civil & Environmental Engineering, Rice University* — Aug 2018 – Present

- Developing and optimizing new methods of resource recovery from organic waste streams using environmental biotechnology
- Characterizing horizontal gene transfer for delivery of genetic payloads to members of microbial communities
- Genetically modifying members of anaerobic microbial community for resource recovery from organic waste
- Developing field deployable test for SARS-CoV-2 to be used in wastewater-based epidemiology

Volunteer Research Assistant — *Winkler Lab, Department of Civil & Environmental Engineering, University of Washington* — July 2017 – June 2018

- Assisted lab members in the development of synthetic AOB/Anammox and AOA/Anammox granules for nitrification/denitrification of wastewater
- Cultured AOB and AOA, and assisted in Anammox bioreactor maintenance
- Attempted to characterize growth kinetics of AOB organisms
- Managed to volunteer daily in addition to a full time job

Senior Design Project — *CZTS Solar Cell Feasibility Study, Department of Chemical Engineering, University of Washington* — Sept 2013 – June 2014

- Conducted year-long, feasibility study of mass producing CZTS solar cells from an economic and environmental perspective
- Collaborated on a team of 6 undergraduates led by senior professors

WORK EXPERIENCE

Environmental Specialist II — *Stericycle, Allen Institute, Seattle, WA* — May 2016 – June 2018

- Managed the hazardous (biological, chemical, pharmaceutical, and radioactive) waste produced at the Allen Institute to ensure proper environmental and regulatory compliance
- Implemented system to manage thousands of chemicals used by AI employees
- Reorganized biowaste program to save $10,000

CLUBS & ORGANIZATIONS

Member – NSF Bioelectronics NRT Program, Rice University — Aug 2020 – Present

- Develop skills to facilitate interdisciplinary collaboration
- Work with graduate students from other disciplines at Rice University to generate new, bioelectronics-based research ideas

President — *AWWA & WEAT Student Chapter, Rice University* — Jan 2020 – Present

- Plan and organize events for professional development for group members
- Primary point of contact for main AWWA/WEAT organizations
- Manage administrative aspects of group
- Recruit new members, and promote on campus visibility of group

Treasurer — *AWWA & WEAT Student Chapter, Rice University* — Jan 2019 – Dec 2019

- Managed finances and funding of student chapter
- Aided with outreach to increase student membership and participation

Professional Development Chair – *CEVE Graduate Student Association, Rice University* — Apr 2019 – June 2020

- Organize social and professional development events for graduate students

Coop Member — *UW Biodiesel Cooperative, University of Washington* — Apr 2013 – June 2014

- Worked on team solely made up of undergraduate peers
- Promoted sustainability by developing system to convert the campuses used cooking oil into usable biodiesel
- Gained significant grant from university to implement system

AWARDS

Waste Industries Scholarship Honoring Lonnie C. Pool Jr. (Sept 2019 - Present) Environmental Research and Education Foundation.

PUBLICATION & PRESENTATIONS

LaTurner, Z.W., Zong, D. M., Kalvapalle, P., Reyes Gamas, K., Terwilliger, A., Crosby, T., Ali, P., Avadhanula, V., Hernandez Santos, H., Weesner, K., Hopkins, L., Piedra, P. A., Maresso, A.W., Stadler, L. B. (2020) Evaluating recovery, cost, and throughput of different concentration methods for SARS-CoV-2 wastewater-based epidemiology. *Under Review*. **Journal Article**.

Stadler, L. B., Maresso, A.W., Ensor, K.B., Clark, J. R., Kalvapalle, P., **LaTurner, Z. W.,** Mojica, L., Terwilliger, A., Zhou, Y., Ali, P., Bertolusso, R., Crosby, T., Garcia, B., Hernandez, H., Hollstein, M., Weesner, K., Zong, D. M., Persse, D., Hopkins, L. (2020) Wastewater Analysis of SARS-CoV-2 as a Predictive Metric of Positivity Rate for a Major Metropolis. *Under Review*. **Journal Article.**

LaTurner, Z. W., Bennett, G. N., San, K., and Stadler, L. B. (2019) Single cell protein production from food waste using purple non-sulfur bacteria shows economically viable protein products have environmental impacts. Journal of Cleaner Production. **Journal Article.**

LaTurner, Z. W., Raja, P. M. V., Kalvapalle, P., Crosby, T., Ali, P., Hollstein, M., Zong, D ., Lou, E., Senehi, N., Bedient, P., Fang, N., Hopkins, L., Ensor, K., Maresso, A., Stadler, L. B. (2020) Spatio-temporal monitoring of SARS-CoV-2 in Houston's Wastewater. NSF RCN Symposium. **5-Minute Virtual Talk.**

LaTurner, Z. W. and Stadler, L.B. (2020) Creating a niche for the preferential growth of purple non-sulfur bacteria: A source of single cell protein. ACS Fall 2020 Virtual Meeting & Expo. **On-Demand Virtual Talk.**

LaTurner, Z. W. and Stadler, L.B. (2019) Two stage process for the production of single cell protein by purple non-sulfur bacteria from food waste. Smalley-Curl Institute Transdisciplinary Symposium. **5-Minute Lightning Talk**.

LaTurner, Z. W. and Stadler, L.B. (2020) Altering the Solar Spectrum to Create a Niche for Preferential Growth of Purple-Non Sulfur Bacteria, an Advantageous Animal Feed. A&WMA ACE 2020 Virtual Conference. **Poster.**

LaTurner, Z. W. and Stadler, L.B. (2019) Are purple non-sulfur bacteria an environmentally and economically sustainable alternative to soy-based protein in animal feed? AEESP Research and Education Conference. **Poster.**

LaTurner, Z. W. and Stadler, L.B. (2019) Are purple non-sulfur bacteria an environmentally and economically sustainable alternative to soy-based protein in animal feed? Chinese Environmental Scholars Forum. **Poster.**