

Dr. Zackary L. Jones

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PROFILE

I am an environmental scientist with expertise in microbial ecology and molecule tools with a passion for solving environmental and process- related problems. I have worked on tailored projects, both in industry and academia, that have allowed different agencies and institutions reach their goals in biological processes by better understanding, optimizing, and engineering microbial communities. My interest lies in working with students and agricultural professionals that are eager to innovate agricultural practices by addressing issues through rigorous research and analysis with a goal-driven approach. I am motivated a teacher and researcher, with strong problem-solving, project management, teamwork, mentoring and leadership skills.

EDUCATION

- **Colorado School of Mines (CSM). Golden, CO** **2017**
Ph.D. Environmental Science and Engineering, *Magna Cum Laude*, advised by Dr. Jonathan Sharp
- **Colorado School of Mines (CSM). Golden, CO** **2011**
M.S. Environmental Science and Engineering, *Cum Laude*.
- **University of California San Diego, La Jolla, CA** **2008**
B.S. Microbiology

WORK HISTORY

- Director of Research – Independent Researcher**, Rocky Mountain Soil Stewardship, Fort Collins, CO **2019-Pres**
 - Received \$50,000 in federal grants in order to study the microbial and physio-chemical properties of vermicompost and their potential to renew soil health.
- Post-Doctoral Research Associate - Laboratory of Mike Manefield**, UNSW, Sydney, Australia **2018**
 - Analysis and optimization of biogas formation in coal seams and digesters.
- Doctoral Research Associate - Laboratory of Jonathan Sharp**, CSM, Golden, CO **2011 – 2017**
 - Managed an NSF-funded and industry-backed science and engineering project for designing, building, operating and optimizing designed-wetland water treatment solutions for contaminant removal at bench-scale and pilot-scale.
 - Assisted in projects treating surface and wastewater for potable reuse with state-of-the-art remediation technologies.
 - Led, supported, mentored and trained up to 20 graduate and undergraduate students in field and lab settings.
- Laboratory Technician**, USGS Water Quality Lab, Lakewood, CO **2011**
 - Research on biological degradation of pollutants in engineered systems.
 - Implemented gap and data-analyses to identify potential improvements.
- Research associate Level I**, Gen-Probe Incorporated, San Diego, CA **2008 - 2010**
 - Performed nucleic acid diagnostic tests and internal auditing for FDA approval.
- Research assistant - Laboratory of Jamey Marth**, UCSD, La Jolla, CA **2007 - 2008**
 - Sample analysis in immuno-glycobiology lab using mainly PCR/ELISA.
- Laboratory assistant**, FFA Sciences, La Jolla, CA **2007**
 - In charge of lab safety, waste disposal, and setting up automated protein binding assays.

RELEVANT SKILLS

Research/ Analytical

Nex-Gen Sequencing (454/Illumina/Minion)
QPCR
Water Quality Analyses -Field/Lab
Sustainability/Life Cycle Analysis (LCA)
Gene Transformation
Bacterial Culturing
Microscopy – SEM/Light/Fluorescence
Field Sampling – Soil/Water/GHG
V-Vis Spectroscopy
Gas Chromatography-MS/FID

Electronic/Interpersonal

QIIME/2
R Language
MS Office Suite
Windows OS/Linux OS
Basic Web Design
Amazon Cloud Computing

HONORS AND AWARDS

- Best Civil and Environmental Engineering Ph.D. Dissertation Award 2017
- Rath Award nominee for “Dissertation with Most Potential Societal Impact” 2017
- Award for Research on Contaminants of Emerging Concern, 10th Annual RMSAWWA/RMWEA Conference 2013
- Recipient of the Edna Bailey Sussman Foundation Graduate Internship 2011

RELEVANT TEACHING EXPERIENCE

- Designed and taught an enviro. engineering lab on biological ecology it’s use in biological mediation. 2012-2017
- Recruited to co-teach a summer workshop on wastewater microbiology at Technical Uni. of Munich 2018
- Lectured for a graduate level geomicrobiology class on as diversity and microbial metabolisms 2012-2016
- Hosted 5 Research Experience for Undergraduate students who worked on lab based projects 2012-2016
- Taught a unit on children’s education in water at the Bechtel’s K-12 teachers workshop 2013-2014
- Invited to present my research at a local research consortium in City of Boulder, CO on Trace Contaminants 2013

RELEVANT EXTRACURRICULAR ACTIVITIES

- Key Member of the International Nexus Food, Water, Energy Workshop 2015
- Colorado One Water Diplomat Work Study 2015
- Leader of the Orange County 19th annual Children's Water Education Festival 2014
- President of the Student Committee for the Civil and Environmental Engineering Department 2013-2014
- Vice President of the multi-university ReNUWIt Student Leadership Committee 2013-2014

RELEVANT PUBLICATIONS

1. Jones, Zackary L., Kristin M. Mikkelson, Scott Nygren, David L. Sedlak, and Jonathan O. Sharp. 2018. “Establishment and Convergence of Photosynthetic Microbial Biomats in Shallow Unit Process Open-Water Wetlands.” *Water Research* 133 (April): 132–41. <https://doi.org/10.1016/j.watres.2018.01.021>.
2. Jones, Zackary L., Justin T. Jasper, David L. Sedlak, and Jonathan O. Sharp. “Sulfide-Induced Dissimilatory Nitrate Reduction to Ammonium Supports Anammox in an Open-Water Unit Process Wetland.” *Applied and Environmental Microbiology*, May 19, 2017, AEM.00782-17. doi:10.1128/AEM.00782-17.
3. Jasper, Justin T., Zackary L. Jones, Jonathan O. Sharp, and David L. Sedlak. “Nitrate Removal in Shallow, Open-Water Treatment Wetlands.” *Environmental Science & Technology* 48, no. 19 (October 7, 2014): 11512–20. doi:10.1021/es502785t.
4. Jasper, Justin T., Zackary L. Jones, Jonathan O. Sharp, and David L. Sedlak. “Biotransformation of Trace Organic Contaminants in Open-Water Unit Process Treatment Wetlands.” *Environmental Science & Technology* 48, no. 9 (May 6, 2014): 5136–44. doi:10.1021/es500351e.
5. Vuono, David C., Julia Regnery, Dong Li, Zackary L. Jones, Ryan W. Holloway, and J’rg E. Drewes. “RRNA Gene Expression of Abundant and Rare Activated-Sludge Microorganisms and Growth Rate Induced Micropollutant Removal.” *Environmental Science & Technology* 50, no. 12 (June 21, 2016): 6299–6309. <https://doi.org/10.1021/acs.est.6b00247>.
6. Freedman, Daniel E., Stephanie M. Riley, Zackary L. Jones, James S. Rosenblum, Jonathan O. Sharp, John R. Spear, and Tzahi Y. Cath. “Biologically Active Filtration for Fracturing Flowback and Produced Water Treatment.” *Journal of Water Process Engineering* 18 (August 2017): 29–40. <https://doi.org/10.1016/j.jwpe.2017.05.008>.
7. Jasper, Justin T., Mi T. Nguyen, Zackary L. Jones, Niveen S. Ismail, David L. Sedlak, Jonathan O. Sharp, Richard G. Luthy, Alex J. Horne, and Kara L. Nelson. “Unit Process Wetlands for Removal of Trace Organic Contaminants and Pathogens from Municipal Wastewater Effluents.” *Environmental Engineering Science* 30, no. 8 (August 2013): 421–36. <https://doi.org/10.1089/ees.2012.0239>.
8. Kronen, Miriam, Matthew Lee, Zackary L. Jones, and Michael J. Manefield. “Reductive Metabolism of the Important Atmospheric Gas Isoprene by Homoacetogens.” *The ISME Journal*, January 14, 2019. <https://doi.org/10.1038/s41396-018-0338-z>.

RELEVANT PRESENTATIONS AT INTERNATIONAL CONFERENCES

- 2017 Biogeochemical Carbon, Nitrogen, and Sulfur Cycling in Open Water Unit Process Wetlands. Rocky Mountain Geomicrobiology Symposium, Colorado School of Mines.
- 2015 Anammox organisms are supported by sulfide-induced dissimilatory nitrate reduction to ammonium in an open water unit process wetland. AEESP Conference, Environmental Engineering and Science: At the Nexus, Yale University

REFERENCES

Available Upon Request