

Curriculum vitae

Saroj Poudel

*Postdoctoral Associate, Department of Marine and Coastal
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Employments

- 2018-present Postdoctoral Associate, Department of Marine and Coastal Sciences, Rutgers, The State University of New Jersey, New Brunswick, New Jersey, USA.
Advisor: Dr. Paul Falkowski
- 2015-2018 Graduate Research Assistant, Department of Microbiology and Immunology, Montana State University, Bozeman, Montana, USA. Advisor: Dr. Eric S. Boyd
- 2013-2014 Graduate Research Assistant, Department of Plant Sciences and Plant Pathology, Montana State University, Bozeman, Montana, USA. Advisor: Dr. Chaofu Lu
- 2012 Undergraduate Research Assistant, Department of Molecular Biology, Wyoming State Veterinary Laboratory, University of Wyoming, Laramie, Wyoming, USA.
Advisor: Dr. Jeffery J. Adamovicz
- 2008 Physics Lab Assistant, Department of Physics and Astronomy, University of Wyoming, Laramie, Wyoming, USA. Advisor: Dr. WenYong Wang

Education

- 2015-2018 Ph.D., Microbiology, Montana State University, Bozeman, Montana, USA.
Advisor: Dr. Eric S. Boyd
- 2013-2015 M.S., Computer Science, Department of Computer Science, Montana State University, Bozeman, Montana, USA. Advisor: Dr. Brendan Mumez
- 2008-2012 B.S. (Hons.), Molecular Biology, University of Wyoming, Laramie, Wyoming, USA.

Awards and Fellowships

- 2018-present Postdoctoral Fellowship. Institute of Earth, Ocean, and Atmospheric Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ.
- 2008-2012 Peak Achievement Scholarship. University of Wyoming. Awarded five times
- 2011-2012 Watt, Joe & Arlene Agriculture Scholarship. University of Wyoming. Awarded two times
- 2009-2012 UW Honors Scholar Stipend. University of Wyoming. Awarded four
- 2009, 2011 Dr. Scholl Honors Scholarship. University of Wyoming. Awarded two times
- 2010, 2011 Amanda and Oscar Schmale Agriculture Scholarship. University of Wyoming. Awarded two times
- 2009,2010 Dean's and freshman honor rolls. University of Wyoming. Awarded two times

Peer Reviewed Publications or Book Chapters (In Prep/Press/Published)

17. **Poudel, S.**, Dunham, E., Lindsay, M., Amenabar, M., Fones, E., Colman, D. and Boyd, E., 2018. Origin and Evolution of Flavin-Based Electron Bifurcating Enzymes. *Frontiers in Microbiology*, 9, p.1762.
16. Fixen, K.R., Chowdhury, N.P., Martinez - Perez, M., **Poudel, S.**, Boyd, E.S. and Harwood, C.S., 2018. The path of electron transfer to nitrogenase in a phototrophic alpha - proteobacterium. *Environmental microbiology*.
15. **Poudel, S.**, Colman, D.R., Fixen, K.R., Ledbetter, R.N., Zheng, Y., Pence, N., Seefeldt, L.C., Peters, J.W., Harwood, C.S. and Boyd, E.S., 2018. Electron transfer to nitrogenase in different genomic and metabolic backgrounds. *Journal of bacteriology*, pp.JB-00757.
14. Zheng, Y., Harris, D.F., Yu, Z., Fu, Y., **Poudel, S.**, Ledbetter, R.N., Fixen, K.R., Yang, Z.Y., Boyd, E.S., Lidstrom, M.E. and Seefeldt, L.C., Harwood, C.S. 2018. A pathway for biological methane production using bacterial iron-only nitrogenase. *Nature Microbiology*, p.1.
13. Amenabar, M.J., Colman, D.R., **Poudel, S.**, Roden, E.E. and Boyd, E.S., 2018. Electron Acceptor Availability Alters Carbon and Energy Metabolism in a Thermoacidophile. *Environmental microbiology*.
12. Artz, J.H., Mulder, D.W., **Poudel, S.**, Colman, D., Schut, G.J., Williams, S.G., Jones, A.K., Adams, M.W., Boyd, E.S., King, P.W. and Peters, J.W., 2018. Structure-function of [FeFe]- and [NiFe]-Hydrogenases: an Overview of Diversity, Mechanism, Maturation, and Bifurcation. In *Microalgal Hydrogen Production* (pp. 31-66).
11. Colman, D.R., **Poudel, S.**, Hamilton, T.L., Havig, J.R., Selensky, M.J., Shock, E.L. and Boyd, E.S., 2017. Geobiological feedbacks and the evolution of thermoacidophiles. *The ISME Journal*.
10. Costas, A.M.G.†, **Poudel, S.**†, Miller, A.F., Schut, G.J., Ledbetter, R.N., Fixen, K.R., Seefeldt, L.C., Adams, M.W., Harwood, C.S., Boyd, E.S. and Peters, J.W., 2017. Defining Electron Bifurcation in the Electron-Transferring Flavoprotein Family. *Journal of Bacteriology*, 199(21), pp.e00440-17.
†Authors contributed equally to this work.
9. Berry, L., **Poudel, S.**, Tokmina-Lukaszewska, M., Colman, D.R., Nguyen, D.M., Schut, G.J., Adams, M.W., Peters, J.W., Boyd, E.S. and Bothner, B., 2017. H/D exchange mass spectrometry and statistical coupling analysis reveal a role for allostery in a ferredoxin-dependent bifurcating transhydrogenase catalytic cycle. *Biochimica et Biophysica Acta (BBA)-General Subjects* (2017).
8. Nguyen, D.M., Schut, G.J., Zadvornyy, O.A., Tokmina-Lukaszewska, M., **Poudel, S.**, Lipscomb, G.L., Adams, L.A., Dinsmore, J.T., Nixon, W.J., Boyd, E.S. and Bothner, B., 2017. Two functionally distinct NADP⁺-dependent ferredoxin oxidoreductases maintain the primary redox balance of *Pyrococcus furiosus*. *Journal of Biological Chemistry*, 292(35), pp.14603-14616.

7. Therien, J.B., Artz, J.H., **Poudel, S.**, Hamilton, T.L., Liu, Z., Noone, S.M., Adams, M.W., King, P.W., Bryant, D.A., Boyd, E.S. and Peters, J.W., 2017. The Physiological Functions and Structural Determinants of Catalytic Bias in the [FeFe]-Hydrogenases CpI and CpII of *Clostridium pasteurianum* Strain W5. *Frontiers in microbiology*, 8.
6. Colman, D.R., **Poudel, S.**, Stamps, B.W., Boyd, E.S., and Spear, J.R. (2017). The deep, hot biosphere: Twenty-five years of retrospection. *Proceedings of the National Academy of Sciences of the United States of America* 114, 6895-6903.
5. **Poudel, S.**, Tokmina-Lukaszewska, M., Colman, D.R., Refai, M., Schut, G.J., King, P.W., Maness, P.C., Adams, M.W., Peters, J.W., Bothner, B. and Boyd, E.S., 2016. Unification of [FeFe]-hydrogenases into three structural and functional groups. *Biochimica et Biophysica Acta (BBA)-General Subjects*, 1860(9), pp.1910-1921.
4. Mashruwala, A.A., Bhatt, S., **Poudel, S.**, Boyd, E.S. and Boyd, J.M., 2016. The DUF59 containing protein SufT is involved in the maturation of iron-sulfur (FeS) proteins during conditions of high FeS cofactor demand in *Staphylococcus aureus*. *PLoS Genet*, 12(8), p.e1006233.
3. Lindsay, M.R., Anderson, C., Fox, N., Scofield, G., Allen, J., Anderson, E., Bueter, L., **Poudel, S.**, Sutherland, K., Munson-McGee, J.H. and Van Nostrand, J.D., 2017. Microbialite response to an anthropogenic salinity gradient in Great Salt Lake, Utah. *Geobiology*, 15(1), pp.131-145.
2. Kamneva, O.K., **Poudel, S.** and Ward, N.L., 2015. Proteins Related to the Type I Secretion System Are Associated with Secondary SecA_DEAD Domain Proteins in Some Species of Planctomycetes, Verrucomicrobia, Proteobacteria, Nitrospirae and Chlorobi. *PloS one*, 10(6), p.e0129066.
1. **Poudel, S.**, Aryal, N. and Lu, C., 2015. Identification of MicroRNAs and transcript targets in *Camelina sativa* by deep sequencing and computational methods. *PloS one*, 10(3), p.e0121542.

Other Publications/Products

1. Undergraduate Honors Thesis, 2012. 'Production of Polyclonal Antibody against *Mycoplasma ovipneumoniae* in Rabbits'. The Honors College, University of Wyoming, Laramie, Wyoming, USA. Advisor: Dr. Jeffery J. Adamovicz.

Conferences and Workshops

5. **Poudel, Saroj**, Eric C. Dunham, Melody R. Lindsay, Daniel, R. Colman, Maximiliano Amenabar, Elizabeth Fones, Erik Anderson, and Eric S. Boyd. "The Genomic and Ecological Landscape of Biological Electron Bifurcation". Gordon Conference: Geobiology; 2018 January 21-26; Galveston, Texas.
4. **ECOGEO Workshop**: Introduction to Environmental 'Omics; 2016, 25-26 July; University of Hawai'i, Manoa, Hawai'i – Scholarship awarded to attend the workshop
3. **Poudel, Saroj**, Monika Tokmina-Luaszewska, Daniel R. Colman, Mohammed Refai, Gerrit J. Schut, Paul W. King, Pun-Ching Maness, Mike W.W. Adams, John W. Peters, Brian Bothner, and Eric S. Boyd. "Unification of [FeFe]-hydrogenases into three structural and functional groups" (Poster). 11th Hydrogenase Conference; July 10-14th, 2016; Marseille, France.

2. **Poudel, Saroj**, Jacob Artz, Gerrit Schut, Mike W. W. Adams, John W. Peters and Eric S. Boyd. "Identifying the structural determinants that influence the directionality and function of [FeFe]-hydrogenase" (Poster). Gordon Conference: Cell Biology of Metals; 2015 July 25-31; Mount Snow, Vermont.
1. Data Intensive Summer School; 2014, June 30-July 2; Montana State University, Bozeman, MT

Teaching Experience

Spring, 2016- Fall, 2016 **General Microbiology Lab (BIOM 360)**, Graduate Teaching Assistant. Montana State University, Bozeman, Montana, USA. Overall Teaching Evaluation: 4.85/5.00 (Fall), 4.58/5.00 (Spring, 2016).

Spring 2013 **Spinning Webs (CS140)**. Graduate Teaching Assistant. Montana State University, Bozeman, MT