Jacob R. Price

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http://jacobrprice.github.io/

EDUCATION

Drexel University, Philadelphia, PA

Ph.D., Environmental Engineering, 2018

- Thesis Topic: *Linking Complex Nutrient Kinetics and Ecological Processes within a Photosynthetic Mixed Microbial Community*
- Advisor: Christopher M. Sales, Ph.D

Temple University, Philadelphia, PA

M.S., Civil & Environmental Engineering, 2013

- Thesis Topic: *The effects of urbanization on stream channel morphology in southeastern Pennsylvania*
- Advisor: Robert J. Ryan, Ph.D, P.E.

Graduate Certificate in Stormwater Management, 2013

The Pennsylvania State University, University Park, PA

B.S., Mathematics, 2007

Minor, Statistics, 2007

RESEARCH EXPERIENCE

Research Assistant 2013 to 2018

Department of Civil, Architectural, and Environmental Engineering,
Drexel University
Supervisor: Christopher M. Sales, Ph.D

- Nutrient transformation and uptake within photosynthetic mixed microbial communities for bioremediation and resource recovery
- Characterization of microbial community composition and their response to changes in environmental regimes
- Physical, chemical, and ecological impact of wastewater treatment plant effluent on receiving streams
- Shifts in community structure within EBPRs during startup and the biological/ecological causes of reactor failure

Research Assistant 2012 to 2013

Department of Civil and Environmental Engineering,
Temple University
Supervisor: Robert J. Ryan, Ph.D, P.E.

- Implications of urbanization and increased impervious surface cover on stream channel morphology and flow regimes

Technical Advisor 2012 to 2013

Center for Natural Resource Development and Protection,
Department of Civil and Environmental Engineering,
New Jersey Institute of Technology
Supervisor: Michel C. Boufadel, Ph.D, P.E.

- Relocated NRDP laboratory equipment from Temple University to the New Jersey Institute of Technology
- Packaging, transportation, installation, and function checking analytical instruments.
- Training on instrument operation and general laboratory and safety methods.

Research Assistant 2010 to 2012

Center for Natural Resource Development and Protection,
Department of Civil and Environmental Engineering,
Temple University
Supervisor: Michel C. Boufadel, Ph.D, P.E.

- Evaluated the efficacy of treating recalcitrant oil found within beaches as a result of the Exxon Valdez Oil Spill
- Provided independent observational reports to the United States Coast Guard in response to the British Petroleum Deepwater Horizon Oil Spill
- Assessed the nutrient composition of river and pore-water in Delaware River shorelines

Awards

Travel Awards

- International Society for Microbial Ecology, Montreal, Canada 2016

Student Awards — Drexel University

- Claudio Elia Memorial Fellowship 2015 to 2016
- Graduate Assistance in Areas of National Need (GAANN) Grand Challenges Fellowship 2014 to 2015
- The Koerner Family Award in Civil, Architectural, and Environmental Engineering 2014 to 2015

Student Awards — Temple University

- Scientists as Teachers; Teachers as Scientists Graduate Fellowship 2012 to 2013
  National Science Foundation Award Number 0841377

Refereed Journal Publications

1. **Price, J. R.** & Sales, C. M. "Quantifying the influence of nutrient loading and availability on microbial community dynamics and subsequent kinetic behavior." (IN REVIEW 2018).

2. **Nan, Y. & Price, J. R.**, Wang, Y., Cheng, M., Keshani Langroodi, S., Woloszynek, S., Rosen, G.L., & Sales, C. M. "Evidence of predation and parasitism affecting EBPR performance through microbial community instability." (IN REVIEW 2018).

3. **Price, J. R.**, Ledford, S. H., Ryan, M. O., Toran, L. & Sales, C. M. "Wastewater treatment plant effluent introduces recoverable shifts in microbial community composition in receiving streams." *Sci Total Environ* 613-614, 1104-1116, doi:10.1016/j.scitotenv.2017.09.162 (2018).

4. Sniffen, K. D., **Price, J. R.**, Sales, C. M. & Olson, M. S. "Influence of Scale on Biomass Growth and Nutrient Removal in an Algal-Bacterial Leachate Treatment System." *Environ Sci Technol* 51, 13344-13352, doi:10.1021/acs.est.7b03975 (2017).

5. **Price, J. R.**, Keshani Langroodi, S., Lan, Y., Becker, J.M., Shieh, W.K., Rosen, G.L., & Sales, C.M. "Untangling the microbial ecosystem and kinetics in a nitrogen removing photosynthetic high density bioreactor." *Environ. Sci.: Water Res. Technol.* 2, 705-716, doi:10.1039/c6ew00078a (2016).
   - **Emerging Investigators Series**

6. **Price, J. R.**, Shieh, W. K. & Sales, C. M. "A Novel Bioreactor for High Density Cultivation of Diverse Microbial Communities." *J Vis Exp* e53443, doi:10.3791/53443 (2015).

Book Chapters

1. Woloszynek, S., Zhao, Z., Ditzler, G., **Price, J.R.**, Reichenberger, E., Lan, Y., Chen, J., Earl, J., Keshani Langroodi, S., Ehrlich, G., & Rosen, G.L. "Analysis Methods for Shotgun Metagenomics in *Computational Biology: Theoretical and Applied Aspects of Systems Biology* Eds F. Alves Barbosa da Silva, N. Carels, & F. Paes Silva Junior. Springer International Publishing. doi:10.1007/978-3-319-74974-7_5 (2018).

Software

1. **Price, J. R.** Woloszynek, S., Rosen, G. L. & Sales, C. M. "theseus - An R package for the analysis and visualization of microbial community data." *bioRxiv*, doi:10.1101/295675 (2018).

Technical Notes

1. **Price, J. R.**, Thompson, T. J., & Parish, J. "Automated Parsing of a LabSolutions Batch Results File (ASCII Output) When Using a Spreadsheet or Statistical Package to Summarize Data." Technical Note. Shimadzu Scientific Instruments. doi: 10.13140/RG.2.1.2746.3447. (2015).

Presentations

Oral Presentations

- American Chemical Society National Meeting, New Orleans, LA — 2018
- Delaware Watershed Research Conference, Philadelphia, PA — 2017
- Annual Meeting of the Phycological Society of America, Philadelphia, PA — 2015

Poster Presentations

- 2018 Meeting of The International Society for Microbial Ecology, Leipzig, Germany — 2018
- Fall Meeting of The American Geophysical Union, New Orleans, LA — 2017
- Annual Meeting of The American Society for Microbiology, New Orleans, LA — 2017
- 2016 Meeting of The International Society for Microbial Ecology, Montreal, Canada — 2016
- Drexel University: Hess Undergraduate Scholars Research, Philadelphia, PA — 2016
- Annual Meeting of the Association of Environmental Engineering & Science Professors, New Haven, CT — 2015
- Drexel University Research Day, Philadelphia, PA — 2015
- Annual Meeting of the American Wastewater Association: Hershey Section, Hershey, PA — 2015
- Schuylkill Watershed Congress, Pottstown, PA — 2012
- Temple University Research Day, Philadelphia, PA — 2011

Teaching Experience

Teaching Assistant - Drexel University

- Engineering Process Lab I & II — 2014 to 2017
- Introduction to Infrastructure Engineering — 2014
- Groundwater Remediation — 2014
- Hydraulics — 2013 to 2014
- Hydrology — 2013

Teaching Assistant - Temple University

- Introduction to Engineering — 2012
- Probability, Statistics, and the Stochastic Method — 2011
- Mechanics of Fluids — 2011

Graduate Fellow, Scientists as Teachers Teachers as Scientists
- Temple University and W.B. Saul Agricultural High School 2012 to 2013

Mentoring Experience

Undergraduate Students

Drexel Students Tackling Advanced Research (STAR) Scholars
- Sudipti Attri (BS. CHEME, exp. 2021, Drexel University) 2017
- Shannon Belfield (BS ENVE exp. 2021, Drexel University) 2017
- Marina DSousa (BS ENVE exp. 2020, Drexel University) 2016 to 2017

Hess Undergraduate Research Scholarship Program
- Daniel Navin (BS ME 2017, Drexel University) 2016

Freshman Design Project
- Marina DSousa (BS ENVE exp. 2020, Drexel University) 2016
- Fatima Hassan (BS ENVE exp. 2020, Drexel University) 2016

Co-op & Volunteer Program
- Jonas Becker (BS BIO, 2016, Hochschule Bremen, Germany) 2015 to 2016
- Thomas Thompson (BS/MS ENVE 2016, Drexel University) 2015
- Aspen Walker (BS/MS ENVE 2015, The University of Pennsylvania) 2014 to 2015

High School Students

Franklin Institute STEM Scholars
- Bafode Keita 2016
- Hasan Talouli 2016
- Semir Ibrahim 2015
- Kayin Bankole 2014

Professional Activities

Service Positions
- Drexel University Point of Contact 2017 to 2018
  Northeast Graduate Student Water Symposium
- ReadCube Ambassador Program 2015 to Present
- Advising Panelist and Task Force Member 2014 to 2015
  Watershed Action Through Engineered Response (W.A.T.E.R.)
  W.B. Saul High School of Agricultural Sciences

Ad hoc Outreach Presentations
- Sales, C.M., **Price, J.R.**, Hamilton, K., Rackes, A., & Perez, L. Environmental Engineering Workshop. Franklin Institute STEM Scholars. Franklin Institute, Philadelphia, PA. (2016).
- **J.R. Price**. Potential Uses of Algae in Wastewater Treatment. Gwynedd-Mercy Academy. Ambler, PA. (2015).
- **J.R. Price**. Investigation of Algal Communities. Walter Biddle Saul Agricultural High School. Philadelphia, PA. (2013).

Associations and Memberships
- American Association for the Advancement of Science (AAAS)
- American Chemical Society (ACS)
- Association of Environmental Engineering and Science Professionals (AEESP)
- American Geophysical Union (AGU)
- American Society for Microbiology (ASM)
- American Water Resources Association (AWRA)
- American Water Works Association (AWWA)
- International Society for Microbial Ecology (ISME)

Other Experience

Data Analyst — 2009 to 2010
Arkema Incorporated, Philadelphia, PA

Actuarial (Intern followed by) Technician — 2006 to 2009
Penn Mutual Life Insurance Company, Horsham, PA

References

Christopher M. Sales
Assistant Professor
Civil, Architectural, and Environmental Engineering
Drexel University
Phone: 215-895-2155
E-mail: cms566@drexel.edu

Gail L. Rosen
Associate Professor
Electrical and Computer Engineering
Drexel University
Phone: 215-895-0400
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Wen K. Shieh
Professor
Chemical and Biomolecular Engineering
University of Pennsylvania
Phone: 215-898-4634
E-mail: shieh@seas.upenn.edu

Mira S. Olson
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Civil, Architectural, and Environmental Engineering
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Civil and Environmental Engineering
Temple University
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