

## About the PSU Summer Research Program

The focus area of our Research Experiences for Undergraduates (REU) site is computational modeling to serve and enhance the Portland metropolitan region as it grows and evolves. Students will be involved in cutting-edge, multi-disciplinary research projects and trained in computational thinking across different disciplines and communities. In doing so, they will gain an understanding of the potential and limits of these tools and how they can serve diverse urban communities. Portland State University, with its newly-funded Portland Institute for Computational Science (PICS), has developed a reputation as a national model for urban universities that enhance their region by working with partners to solve problems. The community-oriented aspect is aligned with PSU's motto "Let knowledge serve the city."

## Acknowledgment

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*Claire O'Neill, MCECS Department Research Administrator*

*Will Garrick, Office of Information Technology (OIT)*

*Sherry Yanxiu Xu, REU Site Coordinator*

**The MCECS Computer Action Team**

### Graduate Students:

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### Community Partners:

City of Portland, Bureau of Environmental Services

US Geological Survey

Oregon Department of Environmental Quality

Metro

OHSU

Advanced Computing Center (AAC)

Oregon Water Science Center

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Program and more info at: [www.teuscher-lab.com/reucomputing](http://www.teuscher-lab.com/reucomputing)

# SYMPOSIUM 2018

## NSF REU Computational Modeling Serving the City

Aug 24th, 2018

1:00-4:30pm

PSU FAB 60-19

## Presentation Schedule

- 1:00 pm – 1:10pm  
Welcome
- 1:10 pm – 1:30pm  
Water Quality Factor Prediction Using Supervised Machine Learning  
*Kathleen Joslyn*
- 1:30 pm – 1:50 pm  
Unraveling the complex relationships among summer stream temperature trends, hydroclimatic trends, and landscape variables in the continental US  
*Naya Mairena Flores*
- 1:50 pm – 2:10 pm  
Associative Learning in Biochemical Networks  
*Yasmin Sepulveda*
- 2:10 pm – 2:30 pm  
Derivation of the Hellinger-Reissner Variational Form of the Linear Elasticity Equations, and a Finite Element Discretization  
*Bram Fouts*
- 2:30 pm – 2:50 pm  
Deciphering the Rules of Cell-to-Cell Coupling By Molecular Modeling and Simulation  
*Linda Lee*
- 2:50 pm – 3:10 am  
Break
- 3:10 pm – 3:30 pm  
The Transport of Non-Spherical Particles in a Simulated Ocean Environment  
*Hannah Reed*
- 3:10 pm – 3:50 pm  
Day Laborers and Extreme Heat: Recommendations for Reducing Heat Stress  
*Sandra Mena*
- 3:50 pm – 4:10 pm  
Effects of land development and season on heavy metal concentrations in urban streams  
*Emmy Daigle*
- 4:10 pm – 4:20 pm  
Wrap-up

