

- **Personal Information**

Name: Stephany Wei

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Address: 616 NE Northlake Pl, Seattle, WA 98105 (University of Washington, Benjamin Hall IDR Bldg)

- **Education**

PhD in Civil and Environmental Engineering, University of Washington, Sept 2015 – Present

MS in Civil Engineering, University of Washington, Sept 2013

BS in Civil Engineering, University of Washington, June 2011

- **Research Interests**

PhD Research

I became very interested in phosphorus recovery when I learned that phosphorus productions are estimated to peak by around 2035; which means by then the phosphorus mining business becomes uneconomical and phosphorus supply starts diminishing [1]. Phosphorus recovery at wastewater treatment plants (WWTP) can extend the life of phosphorus reserves and lower fertilizer costs. Existing activated sludge WWTPs can recover phosphorus but they require anaerobic digestion to obtain phosphorus-rich streams. The application of granular sludge technology can promote phosphorus recovery without the need for anaerobic digestion. Granules are dense spherical biofilms that settle rapidly and compact to high solids concentrations. The granular sludge (much thicker than activated sludge) can be held in phosphorus stripper tank to allow phosphorus release and then recovery.

However, it is hard to implement granular sludge technology at existing activated sludge facilities because granular sludge reactors are very tall (8-10 m) and require SBR operation. Therefore, our research question is: how to retrofit existing activated sludge WWTPs for granular sludge technology in order to promote phosphorus recovery? Our research will investigate granular sludge process designs that can be used to retrofit existing activated sludge processes for phosphorus recovery.

The research project is funded by the National Science Foundation; the title is Selection of Granules in Activated Sludge for Nutrient Removal and Phosphorus Recovery.

[1] Cordell, D., J.O. Drangert, and S. White, The story of phosphorus: Global food security and food for thought. Global Environmental Change-Human and Policy Dimensions, 2009. 19(2): p. 292-305.

Masters Research

I worked on a pilot project that built and evaluated three onsite wastewater treatment recirculating gravel filters for nitrogen removal.

- **Professional Experience**

Engineer, Brown and Caldwell, 2013 – 2015

Utility Systems Engineering Intern, City of Bellevue, 2011 – 2012

- **Scientific Output**

Conference presentation:

“Evaluation of Modified Recirculating Gravel Filter Systems for Nitrogen Removal in Onsite Wastewater Treatment.” PNCWA, Vancouver, Wash. 2014.

Master’s Thesis:

Wei, S., Evaluation of Onsite Preanoxic Recirculating Gravel Filter Wastewater Treatment Systems for Nitrogen Removal, Civil and Environmental Engineering, University of Washington, Seattle, 2013.

- **Awards**

College of Engineering Annual Dean’s Lists (2009-2010). University of Washington
College of Engineering Annual Dean’s Lists (2010-2011), University of Washington

- **Scholarships**

None