

Tayler Hedtke

tayler.hedtke@yale.edu

612-968-6430

Education

Yale University – New Haven, CT Aug. 2019 – Present

- Ph.D. in Chemical and Environmental Engineering
- Advisers: Menachem Elimelech and Jaehong Kim

University of Houston – Houston, TX Aug. 2015 – May 2019

- Bachelor of Science in Chemical & Biomolecular Engineering
- GPA: 3.88/4.0 Summa Cum Laude

Work Experience

University of Houston – Rodrigues Group Feb. 2018 – May 2019

- *Undergraduate Researcher*
- Investigated the interactions of antiscalants, antimicrobial membrane coatings, and foulants in reverse osmosis wastewater treatment systems
- Synthesized reverse osmosis membranes incorporating graphene oxide and polyacrylic acid

University of Kaiserslautern (Kaiserslautern, Germany) – Hasse Group May 2018 – Aug. 2018

- *Research Intern* – DAAD RISE program
- Investigated binary fluid surface wetting behavior through molecular simulations
- Optimized simulations and MATLAB data analysis to produce dependable results

Colorado School of Mines – Bellona Group May 2017 – July 2017

- *Undergraduate Researcher* – NSF REU – ReNUWIt
- Investigated the removal of PFAS by SPAC combined with ceramic membranes
- Optimized filtration system by adjusting SPAC dosage, flow rate, and backpulsing frequency
- Analyzed LCMS data to determine SPAC's removal capacity

University of Houston – Honors Engineering Program Aug. 2016 – May 2018

- *Teaching Assistant*
- Created course assignments in MATLAB and Microsoft Excel to develop problem solving techniques
- Provided instruction and mentoring to 100+ students per year

Skills

Programming: MATLAB; Microsoft Word, Excel with VBA, and PowerPoint

Academic Projects at the University of Houston

Honors Thesis Aug. 2018 – May 2019

- *Synthesis of Graphene Oxide – Polyacrylic Acid Coated Reverse Osmosis Membranes*

Senior Design Project Aug. 2018 – Dec. 2018

- Worked in a team to design a VAM manufacturing plant meeting process specifications and economic feasibility
- Completed the original design in Excel VBA and refined the design in Aspen Plus

Reverse Osmosis Mass Transport Modeling Review Apr. 2018 – May 2018

- Generated a report on the mathematical derivations and descriptions of three transport models

Statistical Analysis in MATLAB Nov. 2017 – Dec. 2017

- Developed MATLAB code to analyze the level of control for a peristaltic pump and a Haas valve

Publications and Presentations

Murray, C., Vatankhah, H., McDonough, C., Nickerson, A., Hedtke, T., Cath, T., Higgins, C., Bellona, C. (2019, March). Removal of per- and polyfluoroalkyl substances using super-fine powder activated carbon and ceramic membrane filtration. *Journal of Hazardous Materials*, 366, 160-168.

Taylor Hedtke, Dr. Christopher Bellona, Charlie Liu, Conner Murray, Hooman Vatankhah. Treatment of per- and polyfluoroalkyl substances with S-PAC and ceramic membranes. Poster Presented at: University of Houston Undergraduate Reserch Day; 2017 October 12; Houston, TX.

Taylor Hedtke, Dr. Christopher Bellona, Charlie Liu, Conner Murray, Hooman Vatankhah. Treatment of per- and polyfluoroalkyl substances with S-PAC and ceramic membranes. Poster Presented at: Colorado School of Mines REU Poster Session; 2017 July 27; Golden, CO.

Campus Involvement and Leadership Experience

<i>Tau Beta Pi</i>	Jan. 2018 – Present
<i>American Institute of Chemical Engineers (AIChE)</i>	Sept. 2017 – Present
• STEM Outreach Coordinator	May 2018 – May 2019
○ Organize volunteers, activities, funding, and coordination with the school to increase interest and confidence in STEM for 3 rd – 5 th grade girls in a local charter school	
<i>Honors and General Engineering Recruitment Events</i>	Feb. 2016 – May 2019
• Presented to groups of up to 75 prospective students and at Q&A panels	
<i>University of Houston Club Tennis Team</i>	Aug. 2015 – Nov. 2018
• Served as Treasurer and managed club finances and fundraising	Aug. 2016 – May 2017
• Competed in two National Championship tournaments	Apr. 2016 & Apr. 2017
<i>Honors College study abroad trip to Greece and Israel</i>	May 2018
<i>Houston Scholars Program</i>	Aug. 2016 – Aug. 2018
• Created faculty mentor relationships for academic and professional development	
• Received a grant for an international research internship	May 2018

Honors and Accolades

Phi Kappa Phi Fellowship (2019)

Outstanding Senior Honors Thesis (2019)

Honors College Arete Award – Awarded for significant and sustained contributions to the Honors College (2019)

Cullen College of Engineering representative for UH Day at the Capitol (2019)

South Texas Section AIChE scholarship recipient - Awarded for academic excellence and dedication to volunteer service (2018)

William A. Brookshire Teaching Excellence Award Committee - Served as the sole student representative for selecting recipients among engineering professors for the inaugural year (2017-2018)

UH Engineering-Week scholarship recipient from Phillips 66 - Nominated by engineering faculty for academic excellence and campus engagement (2017, 2019)

Thomas R. & Richard S. Franklin Scholarship (2017, 2018)

Engineering General Scholarship (2017)

Outstanding First Year Student - One of 17 students honored out of 500+ Honors students (2016)

UH Foundation Excellence Award Scholarship (2015, 2016)

National Merit Finalist receiving a full scholarship at the University of Houston (2015-2019)