

EDUCATION

PhD Environmental Engineering 01/2019 – 05/2023	Pennsylvania State University (State College, PA, USA) Dissertation: <i>Energy-rate trade-offs in electrochemical carbon capture</i> Minor: <i>Computational Materials</i>
MPhil Chemical Engineering 10/2017 – 05/2019	University of Strathclyde (Glasgow, Scotland, UK) Thesis: <i>Electrochemical copper recovery from whiskey distillery spent lees</i>
BS Biomedical Engineering (cell and tissue engineering) 08/2012 – 05/2017	University of Rochester (Rochester, NY, USA) <i>Magna cum laude, Highest distinction</i> Minors: <i>Chemical engineering, biology, studio arts</i>

SELECT PUBLICATIONS & PRESENTATIONS - [complete list available here](#)

Publications (*corresponding author): Published - 5 (+5 in prep); Citations - 13 (Mar 2023, google scholar)

*Boualavong, J.; Papakonstantinou, K.; *Gorski, C. “Determining the Desired Sorbent Properties for Proton Coupled Electron Transfer-controlled CO₂ Capture using an Adaptive Sampling-Refined Classifier.” *Chemical Engineering Science* 2023, vol. 274, pp. 118673.

Cheng, Y.; Hall, D.; Boualavong, J.; Hickey, R.; Lvov, S.; & *Gorski, C. “Influence of hydrotropes on the solubilities and diffusivities of redox-active organic compounds used in aqueous flow batteries.” *ACS Omega* 2021, vol. 6, no. 45, pp. 30800-30810.

Boualavong, J.; *Gorski, C. “Electrochemically Mediated CO₂ Capture Using Aqueous Cu(II)/Cu(I) Imidazole Complexes.” *ES&T Engineering* 2021, vol. 1, no. 7, pp. 1084–1093.

Conference/Symposia Presentations: Presenting author - 8 (2 Invited)

Boualavong, J.; Gorski, C. “Energetic Benefits and Kinetic Drawbacks of Simultaneous Electrochemical CO₂ Capture Sorbent Regeneration and CO₂ Absorption.” AIChE Annual (Phoenix, AZ), Nov 2022.

Boualavong, J.; & Gorski, C. “Determining the Fundamental Limits of Aqueous Absorption-based Electrochemical Carbon Capture.” ACS Fall 2022 (Chicago, IL), Aug 2022. Invited.

Boualavong, J.; & Roy, S. “Optimizing the recovery of copper from distillery waste using a flow-through 3D electrode.” 70th Anniversary UK Fulbright Forum (Birmingham, UK), Jan 2018. Invited.

Course Lectures: Total - 5

Boualavong, J. “Ethics and Research: Critiquing Academia.” CE597: Ethics, Engineering, and Environmental Management, Penn State, March 2022.

Torhan, S.; Boualavong, J. “Intro to Data Visualization Tools: R and Adobe Illustrator.” CE591: Kappe Environmental and Water Resources Engineering Seminars, Penn State, February 2022.

PROPOSAL WRITING

2022 **Penn State Institute of Energy & the Environment-Research Innovations with Scientists and Engineers 2022 Climate Seed Grant** - [News Article](#)
Title: *Optimizing Sorbent Properties for Aqueous Electrochemical CO₂ Capture*
Roles: Conceptualization; Primary author (PI: Christopher Gorski, Penn State)

2017 **Fulbright US-UK Postgraduate Scholarship**
Title: *The Scalability of Stepwise Galvanostatic Copper Ion Recovery from Tin Stripping Waste*

HONORS AND AWARDS

- 2021 **C. Norwood Wherry Memorial Graduate Fellowship:** Penn State engineering award
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- 2019 **University Graduate Fellowship:** Most prestigious school-wide Penn State PhD fellowship
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- 2016 **Take 5 Scholar:** [U. Rochester 5th year fellowship to conduct research on a topic outside the major](#)
Proposal: *Social Learning, Stories, and Stigma: A Pedagogy for Mental Illness*
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- 2016 **Robert L. Wells Prize:** U. Rochester award for simultaneous achievement in engineering and humanities
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- 2016 **Biomedical Engineering Faculty Award: Excellence in Teaching Assistance:** U. Rochester award
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- 2016 **Phi Beta Kappa:** Liberal arts honor society, Iota of NY
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- 2014 **Tau Beta Pi:** Engineering honor society, NY Kappa
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- 2012 **Prince Street Scholar:** U. Rochester 4-year undergraduate scholarship for work in the creative arts

SELECT TEACHING EXPERIENCE

- Teaching Assistant**
Spring 2023
- CE 472W: Environmental Engineering Capstone Design** (Penn State)
Course Instructor: William Burgos
- Passive treatment train design for a local acid mine drainage site
 - Developed a workflow to streamline report grading, with a particular emphasis on confirming that students make revisions based on instructor feedback
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- Lab Instructor**
Fall 2020
- CE 479: Environmental Microbiology for Engineers** (Penn State)
Course Instructor: John (Jay) Regan
- Adapted existing lab assignments based on COVID19 protocols
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- Lab Teaching Assistant**
Spring 2016, Spring 2017
- BME 245: Biomaterials** (U. Rochester)
Course Instructor: Danielle Benoit
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- Teaching Assistant**
Fall 2015, Fall 2016
- BME 230: BME Signals, Systems, and Imaging** (U. Rochester)
Course Instructor: Stephen McAleavey
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- Teaching Assistant**
Spring 2016
- BME 221: Biomedical Computation and Statistics** (U. Rochester)
Course Instructor: Regine Choe

ADDITIONAL TRAININGS, PROFESSIONAL DEVELOPMENT, & CERTIFICATIONS

- Mar 2023
- Out in STEM Professional Development Summit**
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- Nov 2022
- Inclusion, Diversity, Equity, Anti-racism, and Learning Workshops**
American Institute for Chemical Engineers - Annual Meeting 2022
- Unconscious Bias workshop
 - ASEE Safe Zone workshop, level 1
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- Oct 2021
- Inclusive Teaching Workshop**
Host: Penn State Schreyer Honors College
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SELECT SERVICE & LEADERSHIP

LGBTQ+Allies Initiative Programming Committee 07/2021 – Present	American Institute of Chemical Engineers <ul style="list-style-type: none">Planned & moderated events for the biannual meetings and Pride monthIdentified contacts for LGBTQ+ ERGs, other LGBTQ+ professional orgs
DEI Committee Graduate Student Chair 01/2022 – 05/2023	Penn State Dept. of Civil and Environmental Engineering <ul style="list-style-type: none">Organized social programming that simultaneously increased a sense of belonging and identified student needsResearched, compiled, and organized key literature for a pilot graduate seminar course: Diversity, Equity, and Inclusion Issues in STEM (Spring 2023)
Symposium Co-Organizer 03/2020 – 04/2023	Student Assoc. of Environmental Science and Engineering , Penn State <i>Environmental Chemistry & Microbiology Student Symposium</i> <ul style="list-style-type: none">Coordinated advertising to 18 Penn State departments + 12 nearby universitiesConverted all graphics into vector formats for future ease of use
Conference Organizer 2018	Society of Chemical Industry <i>Electrochemistry Postgraduate Conference</i> <ul style="list-style-type: none">Facilitated keynote sessions and a laboratory tour
Biomedical Engineering Peer Advisor 09/2015 – 05/2017	College Center for Advising Services , U. Rochester <ul style="list-style-type: none">Represented the department for prospective students and familiesTrained three new faculty on student-facing university policies
President UR Biodiesel Manager 09/2015-05/2016 07/2013-05/2015	Engineers for a Sustainable World , U. Rochester Chapter <ul style="list-style-type: none">Coordinated 3 student teams on campus engineering projects, including: geospatial analysis for windmill siting and a small scale aquaponic gardenManaged the ~15 student biodiesel lab that converted dining hall waste oil to fuel for campus facilities, 07/2013-05/2015

Other organizations: ACS, ECS, PBK, 4S, TBP

SELECT RESEARCH EXPERIENCES

University Graduate Fellow 01/2019 – 05/2023	Pennsylvania State University (State College, PA, USA) Projects: (1) <i>Electrochemically mediated carbon capture technologies</i> (2) <i>Adaptive sampling for piecewise contour estimation</i> PI: Christopher Gorski (Civil and environmental engineering)
Fulbright Postgraduate Scholar 09/2017 – 07/2018	University of Strathclyde (Glasgow, Scotland, UK) Project: <i>Copper electrowinning from extremely dilute industrial wastewater</i> PI: Sudipta Roy, Todd Green (Chemical engineering)
Undergraduate Researcher 09/2013 – 06/2017	University of Rochester (Rochester, NY, USA) Projects: (1) <i>Harvesting photosynthetic electrons from C. reinhardtii</i> (2) <i>Electroosmotic flow of DNA through conical glass pipettes</i> PI: Hitomi Mukaibo (Chemical engineering)
Science Undergraduate Laboratory Intern 06/2016 – 08/2016	Pacific Northwest National Laboratory (Richland, WA, USA) Project: <i>Biologically-mediated coprecipitation of I-129 in calcite</i> PI: Brady Lee, Hope Lee (Energy and environment cluster)