

Kimberly Huynh

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Profile

Environmental Engineer specializing in environmental fluid mechanics and hydrology. Experienced in leading and conducting international fieldwork, including research in Canada, New Zealand, and Chile. Professional background as an educator and editor. Awarded more than \$32,610 in successful grant proposals for research and outreach activities. Interested in air-water gas exchange research; science policy; and improving diversity, equity, and inclusion in the sciences.

Education

Ph.D. in Civil & Environmental Engineering Expected 2021
University of California, Berkeley Berkeley, CA
Automated measurements of gas exchange in wetlands
Committee: Dr. Evan Variano (chair), Dr. Mark Stacey, Dr. Laurel Larsen

Master of Science in Mechanical Engineering 2014
Northwestern University Evanston, IL

Bachelor of Science in Environmental Engineering 2014
Northwestern University Evanston, IL
Visualizing dissolved oxygen concentration in groundwater flow
Honors Thesis Advisor: Dr. Aaron Packman

Work Experience

Graduate Student Researcher 2015 - Present
University of California, Berkeley Berkeley, CA
Principal Investigator : Dr. Evan Variano

Developed, budgeted, and executed three separate fieldwork campaigns to measure greenhouse gas emissions from wetlands in Arkansas and British Columbia, Canada. Organized travel logistics and data-sharing with collaborators at two other universities. Prototyped and deployed Raspberry Pi-based field measurement tools. Wrote machine-vision analysis routines in MATLAB to assess large environmental data sets. Trained and worked closely with five undergraduate students to complete laboratory work.

GiveWell Oakland, CA

Content Editor 2019 - Present
Summer Research Analyst 2019

Summarized and published conversations between global health experts and GiveWell, a nonprofit that assesses and recommends high-impact charities. Examined financial reports and public health surveys from top charities. Prepared information used for charity and grant recommendations, which exceeded \$100 million in total money moved in 2019.

NSF East Asia Pacific Summer Institute Fellow 2015
Institute of Env. Science and Research Christchurch, New Zealand
Principal Investigators: Dr. Aaron Packman and Murray Close

Initiated a research collaboration between Northwestern University and researchers in New Zealand to investigate whether pre-treating groundwater wells with sonication would improve microbial community analysis. Conducted fieldwork and microbial analysis. Presented research at the American Geophysical Union Fall Meeting and to the Royal Society of New Zealand Te Apārangi.

Murphy Institute Scholar 2011 - 2014
Northwestern University Evanston, IL
Principal Investigator: Dr. Aaron Packman

Selected for the Murphy Institute Scholar program, a four-year research initiative open to the top sixteen to twenty engineering students at Northwestern University. Completed honors thesis on visualizing oxygen concentrations in groundwater using pressure-sensitive paint. Awarded the top three honors at the Chicago Area Undergraduate Research Symposium: Best Poster Presentation; Best Presentation from Northwestern University; and Best Presentation in Math, Engineering, and Physics.

Great Lakes Summer Fellow 2014
National Oceanic and Atmospheric Administration Ann Arbor, MI
Principal Investigators: Dr. Eric Anderson, Dr. Dmitry Beletsky

Developed data visualizations of hydrodynamic information from the Great Lakes. Rewrote legacy code from a proprietary software-based language to Python in order to reduce costs, enable mass collaboration, and improve software development practices.

Engineers for a Sustainable World
Fellowship Coordinator
Project Manager

Evanston, IL and Santiago, Chile
2013
2011 - 2014

Managed a diverse team of ten students in developing and deploying a water filtration device in a Chilean village. Organized field logistics and budget for two trips to Chile. Secured approximately \$20,000 in successful grant proposals. Conducted water quality analyses and qualitative research, including surveys and in-depth interviews with stakeholders.

Research Assistant
University of California, Berkeley
Principal Investigator: Dr. Kara Nelson

2013
Berkeley, CA

Awarded a competitive NSF Research Experience for Undergraduates grant to conduct research on amending sand filters with iron to remove viruses and bacteria from drinking water.

Teaching Experience

Graduate Student Instructor

University of California, Berkeley

Berkeley, CA

- Introduction to Fluid Mechanics 2020, 2015
- Communications for Engineering Leaders 2017-2018
- Writing Fluidly about Flow 2016

Designed syllabi, course calendars, and lessons plans. Led discussion sections and held office hours. Wrote original problem sets for students. Provided individualized feedback on writing. Implemented an auto-graded online assessment platform for Introduction to Fluid Mechanics that was designed to help foster a growth mindset culture in the classroom.

Science Policy Experience

Vice President of External Affairs

Science Policy Group at Berkeley

2019 - 2020
Berkeley, CA

Executed high-level decisions on the direction and growth of the Science Policy Group at Berkeley (SPG), a student group of approximately 30 active members. Independently fundraised more than \$2,000 for outreach activities. Acted as a liaison between SPG and the National Science Policy Network. Advocated for basic science research and funding by editing op-eds published in *The Daily Californian*. Maintained SPG's website and social media.

Project Manager, Science Meets Science Speaker Series
Science Policy Group at Berkeley

2019 - 2020
Berkeley, CA

Co-chaired a speaker series on science policy issues such as racial and gender bias in artificial intelligence. Wrote grant proposals, secured speakers, and managed a team of ten students. Planned and executed three separate talks that had at least 75 attendees each. Led follow-up discussions on ethics in science and taught students how to write policy white papers. Co-wrote a policy memo on regulating facial recognition systems.

STEMVotes Leader
Science Policy Group at Berkeley

2018 - 2019
Berkeley, CA

Initiated an effort to improve voter turnout among STEM students at the University of California, Berkeley. Organized voter information nights that included a turnout of approximately 100 attendees. Managed a diverse team of about ten students.

Publications

1. Close M, Abraham P, Humphries B, Webber J, Fenwick G, Howard S, **Huynh K**, Grace T, Cowey E, Dupont P-Y, Weaver L, “Use of sonication for enhanced sampling of attached microbes from groundwater systems,” *Groundwater*, 2020.
2. **Huynh K**, Packman A, “Visualizing dissolved oxygen concentration in groundwater flow using pressure sensitive paint,” *Scientia (University of Chicago Undergraduate Research Journal)*, Abstract, 2014.
3. Song J, Au K, **Huynh K**, Packman A, “Biofilm responses to smooth flow fields and chemical gradients in novel microfluidic flow cells,” *Biotechnology and Bioengineering*, 2014.

Oral Presentations

1. **Huynh K**, Champenois B, Grehm M, Variano E, “Correlating gas exchange across the air-water interface to water-side velocity statistics,” Oral presentation at: American Geophysical Union Fall Meeting, 2020 Dec 8; Online.
2. **Huynh K**, Runkle B, Reba M, Johnson M, Variano E, “Automated measurements of night-time stirring in diverse wetlands using a custom underwater camera,” Oral presentation at: 22nd International Physical Processes in Natural Waters Workshop, 2019 Sep 11; Yichang, China.

Posters

1. **Huynh K**, Suvocarev K, Reavis C, Reba M, Runkle B, Variano E, “Thermally-driven transport of dissolved methane and carbon dioxide through the water column in a subtropical rice field,” Poster session presented at: 20th International

Physical Processes in Natural Waters Workshop, 2017 Aug 22; Hyytiälä Forestry Field Station, Finland.

2. **Huynh K**, Suvocarev K, Reavis C, Reba M, Runkle B, Variano E, “The role of surface water flow in gas fluxes from a subtropical rice field,” Poster session presented at: American Geophysical Union Fall Meeting, 2016 Dec 13; San Francisco, CA USA.
3. **Huynh K**, Suvocarev K, Reavis C, Reba M, Runkle B, Variano E, “Hydrodynamic transport of methane through the water column in wetlands,” Poster session presented at: Graduate Climate Conference, 2016 Dec 30; Pack Forest, WA USA.
4. **Huynh K**, Inglis A, Webber J, Weaver L, Abraham P, Packman A, Close M, “Influence of depth on enhancing biofilm extraction from aquifers through in-situ sonication,” Poster session presented at: American Geophysical Union Fall Meeting, 2015 Dec 14; San Francisco, CA USA.
5. **Huynh K**, Salus A, Xie M, Roche, K, Packman, A, “Measuring spatial and temporal heterogeneity of dissolved oxygen in streambed sediments using pressure sensitive paint (PSP),” Poster session presented at: American Geophysical Union Fall Meeting, 2014 Dec 17; San Francisco, CA USA.
6. **Huynh K**, Packman A, “Visualizing dissolved oxygen concentration in groundwater flow using pressure sensitive paint (PSP),” Oral presentation session presented at: Northwestern University Undergraduate Research Symposium, 2014 Jun 1; Evanston, IL USA.
7. **Huynh K**, Packman A, “Visualizing dissolved oxygen concentration in groundwater flow using pressure sensitive paint (PSP),” Poster session presented at: Chicago Area Undergraduate Research Symposium, 2014 Apr 5; Chicago, IL USA.
8. **Huynh K**, Packman A, “Visualizing dissolved oxygen concentration in groundwater flow using pressure sensitive paint (PSP),” Poster session presented at: Illinois Section American Waterworks Association WaterCON, 2014 Mar 18; Springfield, IL USA.
9. **Huynh K**, Velazquez E, Gardner A, Packman A, “Project Thirst: Bringing Safe, Clean Water to the Driest Place on Earth,” Poster session presented at: Northwestern Global Health Symposium, 2013 Feb 12; Evanston, IL USA.

Media Coverage

“The Grad Activist: Resources for Science Advocacy.” Inside Higher Ed. 2018 Nov 20.

“Engineers for a Sustainable World Students Conduct Water Research in Chile.” Northwestern University, McCormick School of Engineering News. 2011 Sep 19.

Selected Awards

Extraordinary Teaching in Extraordinary Times Nominee	2020
Lydia Castelino Fellowship	2019
Edward M. Hildebrand Graduate Fellowship in Canadian Studies	2018
Summer Block Grant Fellowship	2016
Hans Albert Einstein Memorial Fund Departmental Fellowship	2015
NSF East Asia Pacific Summer Institute Fellowship	2015
The Alumnae of Northwestern Graduate Fellowship	2014
Chicago Area Undergraduate Research Symposium	2014
<i>Best Poster Presentation</i>	
<i>Best Presentation from Northwestern University</i>	
<i>Best Presentation in Math, Engineering, and Physics</i>	
Great Lakes Summer Fellowship	2014
William Joseph Fischer Scholarship	2014, 2013
Illinois Section American Water Works Association WaterCON	2014
<i>2nd Place Poster</i>	
Northwestern University Global Health Symposium	2013
<i>1st Place Poster</i>	
Environmental and Water Resources Institute Scholarship	2012
Illinois Section American Water Works Association Scholarship	2012
Udall Scholar Honorable Mention	2012
Murphy Institute Scholar	2010
National Merit Scholar	2010

Grants

Research!America <i>Science Meets Science</i> Microgrant	2020
<i>Awarded \$3,000</i>	
Berkeley Graduate Division Conference Travel Grant	2019, 2017
<i>Awarded \$3,000 in total</i>	
Institute of International Studies Pre-Dissertation Research Grant	2018
<i>Awarded \$3,830</i>	
The Sillerman Center for Advancing Philanthropy “Generous U” Contest	2016
<i>Awarded \$2,500, Runner-Up Prize</i>	
Initiative for Sustainability and Energy at Northwestern	2013, 2012
<i>Awarded \$8,700 in total</i>	
International Program Development Group Research Grant	2011
<i>Awarded \$11,580</i>	

Training in Diversity, Equity, and Inclusion

- **EMPOWERing Engineers for Positive Change (2021):** Currently completing a voluntary six-hour, evidence-based workshop series on creating inclusive learning environments at the University of California, Berkeley.

- **Certificate in Remote Instruction (2020)**: Completed an 8-week program on high-quality pedagogical approaches and integrating equity and inclusion effectively into remote learning environments. Pioneered an online, open-source assessment platform that centers student mastery and encourages a growth mindset. Presented the platform and its benefits to student learning to more than 500 attendees at the Teaching Conference for First-Time Graduate Student Instructors. Invited to serve as a Remote Instruction Leadership Fellow based on excellence.
- **Crisis Line Volunteer (2018 - 2019)**: Completed a three-month training program on suicide prevention, trauma-informed care, substance abuse, cultural competency, and mental health concerns. Counseled at least fifty individual callers in distress and assessed them for risk of suicide. Collaborated and empathized with clients to de-escalate high-risk situations. Provided over 200 hours of an essential service over a year to clients primarily from marginalized communities.
- **Multicultural Education Program & Restorative Justice Inclusivity Certificate Program (2018)**: Completed a 20-hour program on workplace diversity, unconscious bias, and cross-cultural communication.

Diversity, Equity, and Inclusion Outreach

Empowering Women of Color Conference, <i>Committee Member</i>	2020 - Present
Civil/Environmental Engineering for Anti-Racism <i>Member, Department Climate Action Group</i>	2020 - Present
<i>Member, Organizing Awareness Action Group</i>	2020 - Present
Graduate Student Volunteer, SMASH Berkeley Networking Night	2017
YWCA High School Shadow Day, <i>Volunteer Mentor</i>	2017
Bay Area Graduate Pathways Symposium, <i>Programming Sub-committee</i>	2016
Northern California Girl Scouts Engineering Fun Day, <i>Workshop Leader</i>	2016

Mentorship

Asian Pacific American Student Development, <i>Graduate Mentor</i>	2017 - 2018
Bay Area Graduate Pathways Symposium, <i>Graduate Student Mentor</i>	2015
Chicago Public Schools, <i>Alumni Mentor</i>	2014

Science Communication

Bay Area Scientists in Schools, <i>Team Leader</i>	2017 - 2018
Science at Cal, <i>Grounds for Science Speaker</i>	2017
California Academy of Sciences NightLife, <i>Science Demonstrator</i>	2017
Reinventing the Nation's Urban Water Infrastructure, <i>Science Demonstrator</i>	2017
Env. Fluid Mechanics and Hydrology, <i>Seminar Coordinator</i>	2016 - 2017
Berkeley Science Review, <i>Writer</i>	2016

Community Outreach

Berkeley Board Fellow, <i>Northern California Recycling Association</i>	2019 - 2020
Crisis Support Services of Alameda County, <i>Crisis Line Volunteer</i>	2018 - 2019
Youth Engagement Advocacy and Housing, <i>Volunteer Chef</i>	2015 - 2017

Technical Skills

Data Analysis: MATLAB, Python, Excel
Prototyping and Computer-Aided Design: Raspberry Pi, Arduino, SolidWorks, NX
Image Processing: Adobe Lightroom, ImageJ
Presentation: Microsoft Office Suite, Google Suite, L^AT_EX