

May 2021

# William A. Tarpeh

Assistant Professor  
Stanford University  
Chemical Engineering

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## EDUCATION

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- 2017 Ph.D. University of California at Berkeley, Berkeley, CA**  
Environmental Engineering; Designated Emphasis in Development Engineering
- 2013 M.S. University of California at Berkeley, Berkeley, CA**  
Environmental Engineering
- 2012 B.S. Stanford University, Stanford, CA**  
Chemical Engineering with Distinction, African Studies Minor

## ACADEMIC APPOINTMENTS

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- 9/2018-** **Assistant Professor**, Department of Chemical Engineering, Stanford University  
**Assistant Professor, by courtesy**, Department of Civil & Environmental Engineering  
Center Fellow, by courtesy, Woods Institute for the Environment  
Faculty Affiliate, Center for Global Poverty and Development  
Member, Bio-X Interdisciplinary Biosciences Institute  
Faculty Affiliate, Re-inventing the Nation's Urban Water Infrastructure Engineering (ReNUWIt) Research Center  
Faculty Affiliate, Stanford Program on Water, Health, and Development
- 2017-2018** **Postdoctoral Research Fellow**, University of Michigan, Ann Arbor, MI  
Department of Civil & Environmental Engineering

## HONORS AND AWARDS

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### **Stanford University (2018-present)**

- 2020 Matthew J. Quinn Prize, Jack Kent Cooke Foundation
- 2020 Stanford Faculty Entrepreneurship Leadership Program
- 2019 Excellence in Review, *Resources Conservation and Recycling*
- 2019 *Chemical & Engineering News* Talented 12
- 2019 National Academies Gulf Research Program Early Career Fellowship (1 of 20 awards)
- 2019 Forbes 30 Under 30: Science Category
- 2019 *The Root's* List of 100 Influential African-Americans
- 2019 Hellman Faculty Fellow
- 2019 Early Career Scientist, *Environmental Science & Technology/ES&T Letters* (1 of 24 awards)
- 2019 Excellence in Review, *Environmental Science & Technology*
- 2018 National Academies Arab-American Frontiers Symposium Participant
- 2018 Terman Faculty Fellow, Stanford University

### **University of Michigan (2017-2018)**

- 2018 Bouchet Honor Society, University of Michigan
- 2017 Professorial Advancement Initiative, Big Ten Alliance

### **University of California, Berkeley (2012-2017)**

- 2016 Featured in [NBCBLK "28 under 28"](#) for African-American innovators

- 2016 Gordon Research Conference Carl Storm Underrepresented Minority Fellowship  
 2014 Harvey Fellow, Mustard Seed Foundation  
 2012 National Science Foundation Graduate Research Fellowship  
 2012 Ford Foundation Pre-Doctoral Fellowship  
 2012 UC Berkeley Chancellor's Fellowship (Top 4% of admitted PhD students)  
 2012 Jack Kent Cooke Foundation Graduate Scholar

### Stanford University (2008-2012)

- 2012 Phi Beta Kappa  
 2011 Stanford School of Engineering Diversity Leadership Award  
 2011 Tau Beta Pi Engineering Honor Society  
 2009 Dean's Award for Exceptional Academic Excellence (2009-2012)  
 2008 Ron Brown Scholar  
 2008 Jack Kent Cooke Foundation College Scholar  
 2003 Jack Kent Cooke Foundation Young Scholar

## PUBLICATIONS

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**Peer-Reviewed Publications** (underline= Tarpeh Group member; \*=corresponding author; U=undergraduate author)

1. Le T, Chen X, Dong H, Tarpeh, William, Perea-Cochero A, Coronas J, Martin S, Mohammad M, Razmjou A, Esfahani AR, Koutahzadeh N, Cheng P, Kidambi P, Esfahani M (2021). An Evolving Insight into Metal Organic Framework-Functionalized Membranes for Water and Wastewater Treatment and Resource Recovery. *Industrial & Engineering Chemistry Research*, 60 (19), 6869-6907. DOI: 10.1021/acs.iecr.1c00543
2. Kogler A, Farmer M, Simon J<sup>U</sup>, Tilmans S, Wells G, Tarpeh, William\* (2021). Advancing systematic investigation toward resource efficiency: characterizing and categorizing next-generation nutrient removal and recovery. *Environmental Science & Technology Engineering*, 1(4) 662-684. DOI: 10.1021/acsestengg.0c00253
3. Tarpeh, William\*, Chen, X (2021). Making Wastewater Obsolete: Selective Separations to Enable Circular Water Treatment. *Environmental Science & Ecotechnology*, 5. DOI: 10.1016/j.ese.2021.100078. **Invited: Young Lion Perspective. Editor's Choice Award.**
4. Dong H, Wu Z, Liu MJ, Tarpeh, William\* (2020). The role of intraparticle diffusion path length on electro-assisted regeneration of ion exchange resins: implications for selective adsorbent design and reverse osmosis pretreatment. *Chemical Engineering Journal*, 407. DOI: 10.1016/j.cej.2020.127821
5. Dong H, Wei L, Tarpeh, William\* (2020). Electro-assisted regeneration of pH-sensitive ion exchangers for sustainable phosphate removal and recovery. *Water Research*, 184. DOI: 10.1016/j.watres.2020.116167
6. Hasseler T, Ramachandran A, Tarpeh, William, Stadermann M, Santiago J\*. (2020). User-friendly tool for techno-economic analysis and design of capacitive deionization systems. *Water Research*, 183. DOI: 10.1016/j.watres.2020.116034
7. Clark BD, Tarpeh, William\* (2020). Selective recovery of ammonia nitrogen from wastewaters with transition metal-loaded polymeric cation exchange adsorbents. *Chemistry: A European Journal*, 26 (44) 10099-10112. DOI:10.1002/chem.202002170. **Invited Special Issue: Young Chemists.**
8. Mu L, Wang Y<sup>U</sup>, Tarpeh, William\* (2020). Validation and mechanism of a low-cost graphite carbon electrode for electrochemical brine valorization. *ACS Sustainable Chemistry & Engineering*, 8 (23): 8648-8654. DOI: 10.1021/acssuschemeng.0c01485

**Press:** ABC7 News, Stanford News

9. Jafary T, Rahman S, Saif HK, Baawain MM, Tarpeh, William, Kim BH\* (2020). Novel two-chamber tubular microbial desalination cell for bioelectricity production, wastewater treatment and desalination with a focus on self-generated pH control. *Desalination*, 481. DOI: 10.1016/j.desal.2020.114358
10. Liu MJ, Neo BS, Tarpeh, William\*. Building an operational framework for nitrogen recovery via electrochemical stripping (2020). *Water Research*, 169. DOI: 10.1016/j.watres.2019.115226
11. Carl S, Waldrop K, Pintauro P, Thompson L, Tarpeh, William\*. Selective Hydrogenation of Furfural in Proton Exchange Membrane Reactor Using Hybrid Pd black/Pd on Alumina (2019). *ChemElectroChem*, 6(22), 5563-5570. DOI: 10.1002/celec.201901314. **Featured on Issue Cover.**
12. Hyun Christopher, Burt Z, Crider Y, Nelson K, Prasad CSP, Rayasam S, Tarpeh, William, Ray I\*. Sanitation for Low-Income Regions: A Cross-Disciplinary Review (2019). *Annual Review of Environment and Resources*, 44(1), 287-318. DOI: 10.1146/annurev-environ-101718-033327
13. Li Yalin, Tarpeh, William, Nelson K, Strathmann T\*. Quantitative evaluation of an integrated system for valorization of wastewater algae as bio-oil, fuel gas, and fertilizer products (2018). *Environmental Science & Technology*, 52(21), 12717-12727. DOI: 10.1021/acs.est.8b04035
14. Tarpeh, William, Wald I, Omollo M, Egan T, Nelson K\*. Evaluating ion exchange for nitrogen recovery from urine in Nairobi, Kenya (2018). *Development Engineering*, 3, 188-195. DOI: 10.1016/j.deveng.2018.07.002
15. Tarpeh, William, Wald I, Wiphrächtiger M, Nelson K\*. Effects of operating parameters on ion exchange columns for nutrient recovery from urine (2018). *Environmental Science: Water Research and Technology*, 4(6), 828-838. DOI: 10.1039/C7EW00478H
16. Tarpeh, William, Barazesh J, Cath T, Nelson K\*. Electrochemical stripping to recover nitrogen from source-separated urine (2018). *Environmental Science & Technology*, 52(3), 1453-1460. DOI: 10.1021/acs.est.7b05488  
**Press: *Environmental Science & Technology* Early Career Scientist Issue**
17. Kavvada O, Tarpeh, William, Horvath A, Nelson K\*. Life-cycle cost and environmental assessment of decentralized nitrogen recovery using ion exchange from source-separated urine through spatial modeling (2017). *Environmental Science & Technology*, 51(21), 12061-12071. DOI: 10.1021/acs.est.7b02244
18. Chrispim M, Tarpeh, William, Salinas D, Nolasco, M\*. The sanitation and urban agriculture nexus: urine collection and application as fertilizer in São Paulo, Brazil (2017). *Journal of Water, Sanitation and Hygiene for Development*, 7(3), 455-465. DOI: 10.2166/washdev.2017.163
19. Tarpeh, William, Udert K, Nelson K\*. Comparing ion exchange adsorbents for nitrogen recovery from source-separated urine (2017). *Environmental Science & Technology*, 51(4), 2373-2381. DOI: 10.1021/acs.est.6b05816

### Manuscripts Under Review

1. Lalwani A, Dong H, Mu L, Woo K, Johnson HA, Holliday MA, Guo J, Senesky D, Tarpeh, William\*. Selective aqueous ammonia sensors using electrochemical stripping and capacitive detection. *American Institute of Chemical Engineering Journal*. **Invited: AIChE Futures Issue.**
2. Rodriguez E, Tarpeh, William, Wigginton KR, Love NG. Application of Plasma and UV/H<sub>2</sub>O<sub>2</sub> for the Removal of Pharmaceuticals in Synthetic Urine. *Under Review. Environmental Science: Water Research & Technology*.
3. Zhao Y, Mamrol N, Tarpeh, William, Guo Y, Van de Bruggen B. Resource sustainability: Fundamentals, fabrication, and application of ion-selective electro-driven membranes for aqueous separations. *Under Review. Angewandte Chemie*.
4. Shin C, Szczuka A, Liu MJ, Mendoza LM, Jiang R, Tilmans S, Tarpeh, William, Mitch W, Criddle, C.\* Anaerobic secondary treatment with reverse osmosis can enable freshwater and ammonia recovery with low embodied energy and low greenhouse gas emissions. *Under Review. Energy & Environmental Science*.

**Patents**

1. Electrochemical pre-concentration for improved detection of gaseous species in water. Tarpeh, William, Senesky D, Lalwani A, Holliday M, Mu L, Clark BD, Liu MJ. September 18, 2020. PCT/US2020/051554.
2. Electrodialysis and Nitrate Reduction. Tarpeh, William, Liu MJ, Clark BD. Provisional Patent, August 14, 2020.
3. Flexible electrochemical stripping. Tarpeh, William, Kogler A, Liu MJ, Clark BD, Chow W. Provisional Patent, August 14, 2020.

**Non Peer-Reviewed Publications**

1. Kogler A, Farmer M, Simon JA, Cheng Z, Shao X, Panayiotou T, Katehis D, Tilmans S, Wells GF, Tarpeh, William (2021). Characterizing, Categorizing, and Communicating Next-Generation Nutrient Removal Processes for Resource Efficiency. *Water Research Foundation*. Project 4976.
2. Tarpeh, William, Clark B, Nelson K, Orner K. (2020). "Reimagining Excreta as a Resource: Recovering Nitrogen from Urine in Nairobi, Kenya." In *An Introduction to Development Engineering*. Springer.
3. Tarpeh, William. Advocacy in the Academy. October, 30, 2018. Bouchet Society Blog, University of Michigan Rackham Graduate School. <https://rackham.umich.edu/discover-rackham/advocacy-in-the-academy/>

**SELECTED PRESENTATIONS**

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**Invited Research Presentations**

1. Gordon Research Conference: Electrochemistry. January 2022.
2. American Chemical Society, San Diego Section. July 2021.
3. Capacitive Deionization and Engineering Conference. Invited Speaker. *Virtual due to COVID-19*. May 10, 2021.
4. Massachusetts Institute of Technology, Department of Materials Science and Engineering. Distinguished Speaker Series. *Virtual due to COVID-19*. April 27, 2021.
5. Middlebury College, Department of Chemistry; Department of Environmental Sciences. *Virtual due to COVID-19* April 2, 2021.
6. Oregon State University, Department of Chemical, Biological, and Environmental Engineering. *Virtual due to COVID-19*. March 8, 2021.
7. Notre Dame University, Department of Chemical and Biomolecular Engineering. *Virtual due to COVID-19*. March 2, 2021.
8. Colorado School of Mines, Department of Civil & Environmental Engineering. *Virtual due to COVID-19*. February 12, 2021.
9. University of California, Davis, Department of Civil & Environmental Engineering. *Virtual due to COVID-19*. January 26, 2021.
10. Woods Hole Oceanographic Institute. *Virtual due to COVID-19*. November 10, 2020.
11. City College of New York, Department of Chemical Engineering. *Virtual due to COVID-19*. November 2, 2020.
12. Yale University, Department of Chemical & Environmental Engineering. *Virtual due to COVID-19*. October 11, 2020.
13. Caltech Futures of Chemical Engineering Symposium. *Virtual due to COVID-19*. September 30, 2020.
14. Rice University, Department of Civil & Environmental Engineering. *Virtual due to COVID-19*. September 11, 2020.
15. Columbia University, Department of Earth and Environmental Engineering. *Virtual due to COVID-19*. August 14, 2020.

16. Applied Materials: Young Professional Series. *Virtual due to COVID-19*. July 31, 2020.
17. ACS Northern California Section, Environmental Sustainability Series. *Virtual due to COVID-19*. July 15, 2020.
18. University of Sao Paulo, Graduate Program for Sustainability. Sao Paulo, Brazil. March 2020.
19. Georgia Institute of Technology, Department of Civil & Environmental Engineering. Oct. 2019.
20. *Chemical & Engineering News* Talented 12 Symposium. American Chemical Society Meeting, San Diego CA. August 2019.
21. Non-targeted Analysis to Understand Fate & Effects of Pharmaceuticals & Emerging Contaminants in Agriculture & Natural Environments. Environmental and Agricultural Chemistry Divisions. American Chemical Society Meeting, San Diego CA. August 2019.
22. Sultan Qaboos University, Muscat Oman, Departments of Civil, Architectural, and Environmental Engineering.; Department of Chemical and Petroleum Engineering. July 2019
23. Zhejiang University, College of Chemical & Biomolecular Engineering. May 2019.
24. Stanford University, Department of Civil & Environmental Engineering. March 2019.
25. Stanford University, Department of Materials Science Engineering. February 2019.
26. University of Maryland, Baltimore County. Department of Chemical, Biomolecular, and Environmental Engineering and Meyerhoff Program. November 2018.
27. Zhejiang-Stanford Chemical Engineering Symposium. Stanford, CA. November 2018.
28. Stanford University, Department of Chemical Engineering Convocation. September 2018.
29. American Chemical Society 256<sup>th</sup> National Meeting. Boston, MA. August 2018.
30. Berkeley Haas Africa Business Forum. Berkeley, CA. April 2018.
31. Engineering Research Center for Reinventing our Nation's Urban Water Infrastructure. Apr 2018.
32. Nanyang Environment & Water Research Institute (NEWRI), Nanyang Technical University. Singapore. Dec 2017.
33. University of Michigan, Dept. of Civil & Environmental Engineering, Ann Arbor, MI. Sept 2017.
34. University of Southern California, Department of Civil & Environmental Engineering. Los Angeles, CA. April 2017.
35. North Carolina State University, Department of Construction, Civil, and Environmental Engineering. Raleigh, NC. March 2016.
36. Stanford University, Department of Chemical Engineering. February 2016.
37. University of Virginia, Department of Civil & Environmental Engineering. Charlottesville, VA. December 2016.
38. MIT Waste Alliance. Cambridge, MA. November 2016.
39. Gordon Research Seminar: Environmental Sciences, Water. Holderness, NH. June 2016.
40. Stanford Chemical Engineering Alumni Symposium. Stanford, CA. May 2016.
41. Eawag Engineering Department Seminar Series. Zurich, Switzerland. March 2015.
42. Education Solution Network Technical Convening 2014. Sponsored by United States Agency for International Development. Berkeley, CA. November 2014.

#### **Selected Oral Research Presentations**

1. *Accelerating Phosphate Recovery from Wastewaters: Electro-assisted regeneration of ferric oxide nanoparticles confined in polymeric adsorbents*. 2<sup>nd</sup> Pan-nano Conference on Nanotechnology. Aguas de Lindoia, Brazil. March 2020.
2. *Putting Brine to Use: Photoelectrocatalytic Production of Hydrogen and Commodity Chemicals from Desalination Brine*. International Water Association Resource Recovery Conference. Venice, Italy. September 2019.
3. *Sulphur-Enabled Electrochemical Nitrogen Recovery From Anaerobically Treated Wastewater*. International Water Association Leading Edge Technology Conference. Edinburgh, UK. June 2019.
4. *Electrochemical Stripping to Recover Nitrogen from Wastewater*. Americas International Meeting on Electrochemistry and Solid State Science/Electrochemical Society Meeting. October 2018.

5. *Suspect Analysis: Fate of pharmaceuticals during urine treatment*. Urine Diversion Summit. Brattleboro, VT. August 2018.
6. *Assessing Risks from Pharmaceuticals and Transformation Products in Urine-Derived Fertilizers*. American Chemical Society Annual Meeting. New Orleans, LA. March 2018.
7. *Household Ion Exchange Cartridges for Nitrogen Recovery From Urine*. Water Environment Federation Technical Conference. Chicago, IL. October 2017.
8. *Evaluating Decentralized Ion Exchange for Nitrogen Recovery From Urine*. Water Environment Federation Technical Conference. Chicago, IL. October 2017.
9. *Designing Nitrogen Recovery from Urine*. Urine Diversion Summit, Rich Earth Institute. Brattleboro, VT. August 2017.
10. *Electrochemical Stripping to Recover Nitrogen from Urine*. XII ECHEMS (International Society of Electrochemistry sponsored) Conference, Milano Marittima, Italy. June 2017.
11. *Electrochemical Stripping to Recover Nitrogen from Urine*. American Chemical Society 253<sup>rd</sup> Annual Meeting. San Francisco, CA. April 2017.
12. *Community Readiness Levels: Scaling Sanitation Success*. Development Impact Lab, Higher Education Solutions Network. First Annual Science of Scaling Meeting. September 2016.
13. *Electrochemical Stripping to Recover Nitrogen from Urine*. International Water Association Conference on Resource-Oriented Sanitation and Small and Decentralized Water Systems. Athens, Greece. September 2016.
14. *Creating Nitrogen Fertilizers from Source-Separated Urine*. Bay Area International Water, Sanitation, and Hygiene Symposium. Stanford, California. April 2016.
15. *Nitrogen Recovery from Urine via Ion Exchange and Electrochemical Stripping*. California Alliance for Graduate Education Annual Retreat. Berkeley, California. April 2016.
16. *Evaluating Ion Exchange and Electrochemical Nitrogen Recovery from Source-Separated Urine*. American Chemical Society 250<sup>th</sup> Annual Meeting. Boston, Massachusetts. August 2015. Awarded ACS Division of Environmental Chemistry Certificate of Merit.
17. *Comparing Ion Exchange and Electrochemical Nitrogen Recovery from Source-Separated Urine*. Third International Fecal Sludge Management Conference. Hanoi, Vietnam. January 2015.
18. *Waste as a Resource: Designing Disinfection and Nitrogen Recovery*. Conference of Ford Fellows, Washington, D.C. September 2013.

## RESEARCH EXPERIENCE

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2015	Guest PhD student, Swiss Aquatic Institute of Technology, Zurich, Switzerland
2013	Visiting Researcher, Sanergy, Nairobi, Kenya
2012-2017	Graduate Research Assistant, Nelson Lab, University of California, Berkeley
2011	Systems Engineering Intern, Siemens Healthcare Diagnostics, Glasgow, DE
2010	Undergraduate Research in Chemical Engineering, Bent Group, Stanford, CA
2010	Research Intern at SARAR Transformación SC, Tepoztlán, Mexico
2009	Undergraduate Research at Institute of Human Virology, Univ. Maryland, Baltimore, MD

## TEACHING

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### Instruction at Stanford:

- Introduction to Chemical Engineering. Undergraduate Course. Spring 2019 (23 students), Winter 2020 (19 students), Winter 2021 (15 students)
- Chemical Engineering Plant Design. Undergraduate Course. Spring 2020 (16 students), Autumn 2020 (18 students)
- Bing Overseas Studies Seminar: Sustainable Water and Sanitation in South-East Asia. *Postponed due to COVID-19.*

- 2018 **Recipient, Teaching Advancement Grant**, Stanford University Vice Provost for Teaching and Learning. Competitive \$2500 grant to design and implement hands-on activities in intro course.
- 2018 **Course Mentor**. Postdoctoral Short Course on Teaching. University of Michigan. Winter 2018.
- 2016 **Graduate Student Instructor**. University of California, Berkeley. Fall 2016.  
Course Title: Introduction to Environmental Engineering
- 2014 **Instructor**. Summer Math and Science Honors Academy, Berkeley, CA. Summer 2014, 2015.  
Course Titles: Applied Calculus, SAT preparation
- 2011 **Instructor**. Centre of Science and Technology, Khayelitsha, South Africa. Spring 2011.  
Course title: Advanced Calculus

## MENTORING

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### Stanford University (2018-)

Linchao Mu (2018-2020). Postdoctoral Fellow, Chemical Engineering. *Current: Associate Professor, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*  
 Hang (Lucas) Dong. Postdoctoral Fellow, Chemical Engineering.  
 Xi Chen. Postdoctoral Fellow, Chemical Engineering.  
 Elizabeth Corson. TomKat Postdoctoral Fellow, Chemical Engineering.

Xiaohan (Anita) Shao. PhD student, Civil & Environmental Engineering.  
 Matthew Liu. PhD student, Chemical Engineering.  
 Brandon Clark. PhD student, Chemical Engineering.  
 Anna Kogler. PhD student, Civil & Environmental Engineering.  
 Lorelay Mendoza. PhD student, Civil & Environmental Engineering.  
 Jinyu Guo, PhD student, Chemical Engineering.  
 Valerie Niemann, PhD student, Chemical Engineering.  
 Dean Miller, PhD student, Chemical Engineering  
 Samantha Bunke, PhD student, Chemical Engineering.

Valmik Lakhlani. MS student, Chemical Engineering. *Current: Process Engineer at Fluor*  
 Ziyang Wu. MS student, Civil & Environmental Engineering.  
 Naomi Ray. BS student, Chemical Engineering.  
 Sydney Johnson. BS student, Chemical Engineering. *Current: PhD student at MIT (Chem. Eng.)*  
 William Chow. BS student, Chemistry.  
 Joshua Tan. BS student, Chemical Engineering.  
 Julia Simon, BS student, Chemical Engineering.  
 Nathaniel Ramos, BS student, Environmental Engineering.  
 Bryan Romero, BS student, Chemistry.

### University of Michigan (2017-2018)

Enrique Rodriguez, MS, Environmental Engineering. *Current: PhD student, Michigan.*  
 Nicholas Lowe, BS Environmental Engineering (2017-2018). *Current: MS student, Michigan.*  
 Alexi Sinanaj, BS Chemical Engineering (2017-2018).  
 Sarah Carl, PhD Chemical Engineering (2017-present). *Current: Consultant, DSG Solutions.*  
 Yan Du, BS Honors Environmental Engineering (2017-present). *Current: PhD Student, Yale.*

### University of California, Berkeley (2012-2017)

John Law, BS/MS Environmental Engineering (2017)  
 Ileana Wald, MS/PhD Environmental Engineering (2016-2017). Current:  
 Maja Wiprächtiger, MSc Environmental Engineering, ETH Zürich. Current: PhD student, ETH.  
 Michael Otieno Omollo, Lab technician at Sanergy, Ltd, Nairobi Kenya (2016).  
 Maritza Flores-Marquez, BS Environmental Engineering, UC Merced (2014).

**Tutor, Project Touchdown**, Berkeley, CA. 2012-2014.  
 Tutored low-income, minority high school students in math and science weekly.

**The Phoenix Project**. Stanford, CA. 2010-2012.  
*Director of Mentee Development* - scaled program from 94 seniors to 220 across California.

**Peer Tutor**, Stanford Center for Teaching and Learning, Stanford, CA. 2009-2012.  
 Tutored Stanford students in math, chemistry, physics, economics, Spanish, and engineering.

## **TRAINEE AWARDS**

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2020 Anna Kogler, Stanford Interdisciplinary Graduate Fellowship.  
 2020 Matthew Liu, NASA Graduate Training Research Fellowship.  
 2020 Anna Kogler, Ford Foundation Predoctoral Fellowship Alternate.  
 2020 Lorelay Mendoza, Ford Foundation Predoctoral Fellowship Honorable Mention.  
 2020 Brandon Clark, Pan-Nano Best Poster Award.

## **PROFESSIONAL SERVICE**

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Peer Reviewer for Journals: *Environmental Science: Water Research and Technology*, *Water Research*, *Environmental Science & Technology*, *Joule*, *Science of the Total Environment*, *Environmental Engineering Science*, *Desalination and Water Treatment*, *Journal of Environmental Chemical Engineering*, *Resources Conservation and Recycling*  
 Peer Reviewer for Funding Agencies: *National Science Foundation* (Chemistry Directorate; SBIR Program), *South Africa National Research Foundation*

1. Sustainability School Blueprint Advisory Committee, Stanford University, 2020-present
2. Long-Range Sustainability Structure University Committee, Stanford University, 2020
3. Route to Getting Grants Committee for Junior Faculty, Stanford School of Engineering, 2019-present.
4. Graduate Admissions Committee, Stanford Department of Chemical Engineering, 2019-present.
5. Undergraduate Committee, Stanford Department of Chemical Engineering, 2018-present.
6. Coordinator for Research Experience for Stanford Undergraduates, 2018-2019.
7. Faculty Panelist, Stanford SERGE. Hosted by Stanford Black Engineering Graduate Students' Association. October 2018.
8. Advisory Board Member, Urban Life Mentors, Inc. 2018-2019
9. Poster Judge, Michigan Undergraduate Research Opportunity Program. February 2018.
10. Symposium Organizer, American Chemical Society Fall 2018 Meeting. Symposium titled Waste to Product: Biological and Physicochemical Resource Recovery and Efficiency.
11. Diversity Advisory Board, ReNUWIt Engineering Research Center. 2015-2017.
12. Bay Area Graduate Pathways Symposium Organizing Committee. 2015-2017
13. Securing Water for Food Evaluator Intern, U.S. Agency for International Development. 2015-16.
14. Development Impact Lab Idea Team. 2013-2014.



15. National Society of Black Engineers, Stanford, Academic Excellence and Pre-College Initiative Chair. 2008-2012.

**PhD Exam Committees**

- 2020 Jacob King, Doctoral Qualifying Exam, Civil & Environmental Engineering  
 2019 Andrew Kim, Doctoral Qualifying Exam, Civil & Environmental Engineering  
 2019 Jorge Meraz, Doctoral Qualifying Exam, Civil & Environmental Engineering  
 2019-2020 Joel Schneider, Chemical Engineering (Thesis Reader)  
 2019-2021 McKenzie Hubert, Chemical Engineering (Thesis Reader)

**PhD Defense Committees**

- 2020 Brian Rohr, Chemical Engineering  
 2020 Joel Sanchez, Chemical Engineering  
 2020 Joe Gauthier, Chemical Engineering  
 2020 Jon Baker, Chemical Engineering  
 2019 Zhiyue Wang, Civil & Environmental Engineering  
 2019 Simone Bochner de Araujo, Chemical Engineering  
 2019 David Salazar, Mechanical Engineering (Committee Chair)  
 2019 Reuben Britto, Chemical Engineering  
 2019 George Korir, Bioengineering (Committee Chair)  
 2019 Charlotte Kirk, Chemical Engineering  
 2019 Hassan Aljama, Chemical Engineering (Thesis Reader)  
 2019 Abigail Taussig, Undergraduate Honors Thesis in Chemical Engineering (Second Reader)

**BROADER IMPACTS: PRESS AND OUTREACH PRESENTATIONS**

**Outreach Presentations**

- 2020 Stanford Summer Engineering Academy. August 2020.  
 2020 Stanford Summer Academic Immersion and Leadership. August 2020.  
 2019 Keynote Address, Bay Area Graduate Pathways to STEM. February 2020.  
 2018-2020 **Preparing for Your Academic Interview.** NextProf Nexus Workshop.  
 2019 College readiness workshop. Urban Life Mentoring, Inc. August 2019. Oakland, CA.  
 2019 Summer Mathematics and Science Honors Academy at Stanford. July 2019. Stanford, CA.  
 2018 **Panelist.** Stanford Exposure to Research and Graduate Education (SERGE) Program. October 2018. Stanford, CA  
 2018 **Speaker,** Graduate Fellowships in STEM. Jack Kent Cooke Foundation Scholars Weekend. August 2018. Landsdowne, VA.  
 2018 **Speaker,** Thriving as a College Scholar. Jack Kent Cooke Foundation Scholars Weekend. August 2018. Landsdowne, VA.  
 2018 **Keynote Speaker,** Welcome Session for Jack Kent Cooke Foundation Scholars Weekend. August 2018. Landsdowne, VA.  
 2018 **Using Engineering to Address Societal Problems: Producing Fertilizer from Urine.** May 2018. Fortis Academy, Ypsilanti, MI.  
 2018 **Panelist, Securing Postdoctoral Appointments, California Alliance Retreat.** March 2018.  
 2017 **Pee-Cycling: Creating Sustainable Fertilizers from Urine.** Fast Food For Thought, Sustainable Food Systems Initiative. University of Michigan. Ann Arbor, MI. October 2017. ([link](#))  
 2017 **Keynote Speaker, Stanford Black Scientists and Engineers Annual Banquet.** Stanford, CA.  
 2016 **Thinking Big, Working Hard, and Achieving: My Young Scholar Experience.**  
 Keynote Address. Jack Kent Cooke Foundation Young Scholars' Welcome Weekend.

Baltimore, Maryland. June 2016

- 2015 **How to Apply to Graduate School as an Undergraduate Transfer Student.** Berkeley, CA.  
 2013 **Environmental Engineers: What We Do and Where to Start.**  
*Oakland Boys and Girls' Club Science/Math Outreach, Oakland, CA. November 2013.*  
 2013 **Everybody Poops, the Sequel: What to Do About It.**  
*Education Program for Gifted Youth, Stanford, CA. June 2013.*

### Press Coverage

- 2020 **What if waste could be recycled efficiently and profitably?** ([link](#)) Stanford Engineering News.  
 2019 **Can we recover valuable chemicals from sewage?** ([link](#)) Stanford Engineering News.  
 2019 **Imagining the future helps us engineer towards that future.** ([link](#)) Blum Center for Developing Economies, UC Berkeley.  
 2016 **How Your Pee Could Help Billions of People.** ([link video](#), [link article](#))  
 Video on urine nitrogen recovery. Produced by DNews, Discovery Communications.  
 2016 **NBC BLK 28 Under 28.** ([link](#))  
 Featured on inaugural list of 28 African-American innovators and game-changers.  
 2016 **Solving Real People's Real Problems.** ([link](#))  
 Video on development engineering and engineering for impact. Produced by Jack Kent Cooke Foundation.  
 2015 **UC Berkeley News Video.** 2015. ([link video](#), [link article](#))  
 World Toilet Day video featuring electrochemical nitrogen recovery from urine to produce fertilizer in Nairobi, Kenya. Produced by UC Berkeley News.

### PROFESSIONAL AFFILIATIONS

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American Institute of Chemical Engineers  
 American Chemical Society  
 Electrochemical Society  
 Association of Environmental Engineering and Science Professors  
 International Water Association  
 Sustainable Sanitation Alliance  
 International Society for Electrochemistry  
 International Society for Microbial Electrochemical Technologies  
 National Society of Black Engineers

### PROFESSIONAL DEVELOPMENT

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American Chemical Society New Faculty Workshop (August 2019)  
 Professoriate Bound (January-December 2018)  
 Dissertation Bootcamp, National Center for Faculty Development and Diversity (March 2015)  
 Penn Equity Institute for Doctoral Students in Higher Education (August 2015)  
 California Alliance (2015-2017)  
 Building Future Faculty Program, North Carolina State University (March 2017)  
 NextProf Workshop, University of Michigan (September 2017)

Next Generation Electrochemistry Workshop, University of Illinois Chicago (June 2018).

**LANGUAGES**

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Spanish (fluent)

French (intermediate)

Xhosa (South African Bantu language; intermediate)