

**JOSEPH A. CHARBONNET, PHD**  
Assistant Professor, Iowa State University  
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## **EDUCATION**

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**PhD, University of California, Berkeley** Berkeley, CA  
*Civil & Environmental Engineering* 2013-2018

- Minors: Public Health and Materials Science & Engineering
- Dissertation: "Manganese Oxide-Coated Sand Geomedia for Treatment of Contaminated Stormwater" advised by Dr. David Sedlak

**MS, University of California, Berkeley** Berkeley, CA  
*Civil & Environmental Engineering* 2012-2013

**BS, Georgia Institute of Technology** Atlanta, GA  
*Environmental Engineering* 2008-2012

## **ACADEMIC POSITIONS**

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**Assistant Professor, Iowa State University** Commencing 2022  
*Department of Civil, Construction, and Environmental Engineering*

**Postdoctoral Fellow, Colorado School of Mines** 2020-2021  
*Department of Civil & Environmental Engineering, Chris Higgins Lab*

**Lecturer, University of California, Berkeley** 2019  
*Department of Civil & Environmental Engineering*

**Graduate Student Researcher, University of California, Berkeley** 2013-2018  
*Department of Civil & Environmental Engineering, ReNUWit ERC, David Sedlak Lab*

**Undergraduate Researcher, Georgia Institute of Technology** 2010-2011  
*Department of Civil & Environmental Engineering, Spyros Pavlostathis Lab*

## **ADDITIONAL RESEARCH EXPERIENCE**

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**Staff Scientist, Green Science Policy Institute, Berkeley, CA** 2018-2020  
*Flame Retardant Theme Leader*

**Researcher, Lawrence Berkeley National Laboratory, Kolkata, India** 2016  
*Electrochemical Arsenic Removal, Energy Technologies Area, Ashok Gadgil Lab*

**Undergraduate Intern, Kenai Watershed Forum, Soldotna, AK** 2010, 2011  
*Habitat Expansion, Restoration and Research Themes*

**Research Intern, NASA - Marshall Space Flight Center, Huntsville, AL** 2011  
*Water Recycling, Environmental Control & Life Support Systems*

## TEACHING

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- Iowa State University Ames, IA
- **CE 523 Physical-Chemical Treatment Processes**<sup>†</sup>—Instructor of record 2022
- Colorado School of Mines Golden, CO
- **CEEN 551 Environmental Organic Chemistry**—Guest lecturer, “Indirect Photolysis” 2021
- Georgia Southern University Statesboro, GA
- **CENG 5136 (G) Watershed Management**—Guest lecturer, “Stormwater & Runoff” 2021
- University of California Berkeley, CA
- **CEE 115 Water Chemistry**—Instructor of record 2019
  - **CEE 115 Water Chemistry**—Graduate student instructor and guest lecturer, “Equilibrium modeling with Visual MINTEQ” 2016
- Mt. Tamalpais College/Patten University San Quentin State Prison, CA
- **Developmental Math 50A**—Co-instructor, lead instructor 2019, 2020
  - **Introduction to Public Health**—Guest lecturer, “Environmental Toxicology” 2019

<sup>†</sup>course developer

## SCHOLARLY PUBLICATIONS

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- Charbonnet, J.A.\***, Rodowa, A.E.\*, Guelfo, J.L., Field, J., Higgins, C., Helbling, D.E. & Houtz, E.F. Environmental Source Tracking of Per- and Polyfluoroalkyl Substances within a Forensic Context: Current and Future Techniques. *Environ. Sci. and Technol.* (2021). DOI: 10.1021/acs.est.0c08506
- Charbonnet, J. A.**, Duan Y., Van Genuchten, C. & Sedlak, D. L. Regenerated manganese-oxide coated sands: The role of mineral phase in organic contaminant reactivity. *Environ. Sci. and Technol.* **55**, 5282-5290 (2021). DOI: 10.1021/acs.est.0c05745
- Charbonnet, J.A.**, Weber, R. & Blum, A. Flammability Standards for Furniture, Building Insulation and Electronics: Benefit and Risk. *Emerg. Contam.* **6**, 432-441 (2020). DOI: 10.1016/j.emcon.2020.05.002
- Charbonnet, J. A.**, Duan Y. & Sedlak, D. L. The use of manganese oxide-coated sand for the removal of trace metal ions from stormwater. *Environ. Sci.: Water Res. & Tech.* (2019) DOI: 10.1039/C9EW00781D
- Charbonnet, J. A.**, Duan Y., Van Genuchten, C. & Sedlak, D. L. Chemical regeneration of manganese oxide coated sand for oxidation of organic stormwater contaminants. *Environ. Sci. and Technol.* **53**, 10728-10736 (2018). DOI: 10.1021/acs.est.8b03304
- Grebel, J. E. \*, **Charbonnet, J. A.\*** & Sedlak, D. L. Oxidation of organic contaminants by manganese oxide geomedia for passive urban stormwater treatment systems. *Water Res.* **88**, 481–491 (2016). DOI: 10.1016/j.watres.2015.10.019
- Teixido, M., **Charbonnet, J. A.**, LeFevre, G.H., Luthy, R. & Sedlak, D.L. Geomedia-amended infiltration system to enhance metal and trace organic compound removal in urban stormwater runoff. *In review*

\*equal contributions

## SCHOLARLY PRESENTATIONS

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- Charbonnet, J. A.**, Rodowa, A., Helbling, D., Houtz, E., Higgins, C. Source Tracking for PFAS Forensics: Current and Future Techniques. *GRA Western Groundwater Congress*. Burbank, CA. September 14, 2021. *Oral Presentation*

- Charbonnet, J. A.** I Want to Be in the Room Where It Happens: Environmental Engineers Shaping Policy. *Department of Civil & Environmental Engineering, Colorado School of Mines*. Golden, CO. September 25, 2020. *Departmental Seminar*
- Charbonnet, J. A.,** Duan Y., Van Genuchten, C. & Sedlak, D. L. Manganese oxide-coated sand for the removal of trace metal ions from stormwater. *260th National Meeting of the ACS*. San Francisco, CA (virtual meeting). August 19, 2020. *Oral Presentation*
- Charbonnet, J. A.** Sewers to Slabs: radically Re-imagining a Less Toxic World. *California Department of Toxic Substances Control*. Berkeley, CA. July 10, 2019. *Environmental Chemistry Lab Departmental Seminar*
- Charbonnet, J.A.,** Babrauskas, V., Diamond, M. & Blum, A. How to limit flame retardant use: the class concept or code reform? *9<sup>th</sup> International Symposium on Flame Retardants*. Montréal, QC. May 14, 2019.<sup>†</sup>
- Charbonnet, J. A.** Mind in the Gutter: Radically Rethinking Stormwater with Environmental Chemistry. *Department of Civil & Environmental Engineering, University of California, Berkeley*. Berkeley, CA. April 27, 2018. *Departmental Seminar* ([youtu.be/zzBU9EzSesg](https://youtu.be/zzBU9EzSesg))
- Charbonnet, J. A.,** Duan Y., Van Genuchten, C. & Sedlak, D. L. Chemical regeneration of Mn-oxide coated sand for oxidation of organic stormwater contaminants. *255th National Meeting of the ACS*. New Orleans, LA. March 20, 2018. *Oral Presentation*
- Charbonnet, J. A.,** Grebel, J. E., Lammers, L. N. & Sedlak, D. L. Manganese Oxide Geomedia and its Regeneration for Passive Treatment of Urban Stormwater Contaminants. *2015 AEESP Research and Education Conference*. New Haven, CT. June 15, 2015. *Poster Presentation*
- Charbonnet, J. A.,** Grebel, J. E., & Sedlak, D. L. Novel Manganese Oxide Geomedia for Passive Treatment of Urban Stormwater Contaminants. *248th National Meeting of the ACS*. San Francisco, CA. August 13, 2014. *Oral Presentation*
- Charbonnet, J. A.,** Grebel, J. E., & Sedlak, D. L. Manganese Oxide Geomedia for Passive Treatment of Urban Stormwater Contaminants. *Gordon Research Seminar on Environmental Sciences: Water*. Holderness, NH. June 21, 2014. *Poster Presentation*

<sup>†</sup>*Session Chair*

## **INVITED TALKS AND KEYNOTE ADDRESSES**

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| School So Nice You Do It Twice: Everything to Know About Graduate School<br><i>Colorado School of Mines SHPE Chapter Meeting; Golden, CO</i>                                                              | November 6, 2020  |
| (I Want to Be in) The Room Where It Happens: Private Code Making.<br><i>Flame Retardant &amp; PFAS Dilemma; Berkeley, CA.</i>                                                                             | February 7, 2020  |
| Radically Reimagining a Less Toxic World<br><i>Science Leadership and Management Club; University of California, Berkeley</i>                                                                             | September 9, 2019 |
| Water You Talking About? Myths and Facts About the World's Most Vital Resource<br><i>Pint of Science Festival-San Francisco; Martinez, CA</i>                                                             | May 20, 2019      |
| Better than an Elevator Deal: The Value of Pitch Contests<br><i>University of California GradSlam, Campus Finals; University of California, Berkeley</i>                                                  | April 3, 2019     |
| Mind in the Gutter: Radically Rethinking Stormwater<br><i>California Water Environment Association Pretreatment, Pollution Prevention, Stormwater Conference; Seaside, CA</i>                             | February 11, 2019 |
| Student Address: Why We're Called Bears ( <a href="https://youtu.be/up4P1Nw6rEM?t=2137">youtu.be/up4P1Nw6rEM?t=2137</a> )<br><i>Graduate Engineering Commencement; University of California, Berkeley</i> | May 15, 2018      |

Manganese Oxide Media for Stormwater Treatment <i>Kennedy-Jenks Consultants Brown Bag Seminar Series; San Francisco, CA</i>	March 7, 2018
Start Using Stormwater <i>California Science Translators Showcase; State Capitol, Sacramento, CA</i>	February 20, 2018
Engineered Geomedia for Contaminant Removal during Aquifer Recharge <i>NSF REU Symposium Series; University of California, Berkeley</i>	July 20, 2017

## **STUDENT MENTORING AND RESEARCH ADVISING**

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### Graduate Students

#### Undergraduate Students

<b>Ms. Eden Novak:</b> URA, Colorado School of Mines	2021-present
<b>Ms. Angelina Rivera:</b> SHPE Chapter Leadership, Colorado School of Mines	2020-present
<b>Ms. Kayleen Chee:</b> URA, Colorado School of Mines	2020-2021
<b>Mr. Yanghua Duan:</b> Undergraduate/Master's Student, UC Berkeley	2017-2018
<b>Mr. Francis Ledesma:</b> NSF REU, Cornell University	2017
<b>Ms. Julianne Rolf:</b> UC LEADS REU, UC Riverside	2014

## **GRANTS AWARDED**

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Iowa Water Environment Association Research Grant Program. \$10,000 "Evaluation of per- and polyfluoroalkyl substances in Iowa wastewater treatment facilities, treated effluent, and biosolids" <b>Co-PI</b> with PI Kaoru Ikuma, Co-PI Say Kee Ong, and student Henry Croll (CCEE, Iowa State University)	2021-2022
Iowa State University Presidential Cost-Sharing Program for Research Tools (CoSPRT). \$53,333.33 "Acquisition of a high-performance ion chromatography (HPIC) system for versatile, robust, and high-quality measurements of water chemistry" <b>Co-PI</b> with PI Kaoru Ikuma, Co-PIs Say Kee Ong (CCEE, Iowa State University) and Michelle Soupier (ABE, Iowa State University)	2021

## **AWARDS AND HONORS**

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### Iowa State University

- Featured "Iowa Latino in Higher Education" by IA Department of Human Rights 2021

### University of California, Berkeley

- GradSlam Pitch Contest 2018  
*Berkeley Campus-Wide Competition: 1<sup>st</sup> Place Winner, Audience Choice Winner*  
*University System-Wide Competition: 1<sup>st</sup> Place Winner ([youtu.be/xsGU5AYMUaE](https://youtu.be/xsGU5AYMUaE))*
- Outstanding Graduate Student Instructor, CEE Department 2017
- NSF Graduate Research Fellow 2013

### ReNUWIt Engineering Research Center

- NSF National Elevator Pitch Competition: 1<sup>st</sup> Place Winner 2014

### Georgia Institute of Technology

- G. Ben Turnipseed Scholar 2010
- President's Scholar—Stamps Leadership Scholar 2008
- National Merit Scholar 2008
- National Hispanic Scholar 2008

Other Honors  
Eagle Scout with 3 palms

2008

## **PROFESSIONAL AFFILIATIONS AND ACCREDITATION**

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- Engineer-In-Training, State of Georgia
- American Chemical Society
- Society of Hispanic Professional Engineers

## **COMMUNITY OUTREACH, SERVICE, AND LEADERSHIP**

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**Society of Hispanic Professional Engineers, Colorado School of Mines** 2020-Present

- Campus chapter co-adviser

***Water You Talking About* Podcast** 2016-Present

- Founder and producer ([soundcloud.com/water-podcast](https://soundcloud.com/water-podcast))

**ReNUWit NSF Research Center** 2015

- Student Leadership Council President

**King Middle School, Berkeley, CA** 2013-2018

- Classroom Volunteer Tutor and Mentor

### **Academic Journal Peer Reviewer**

- *Environmental Science & Technology*
- *Water Research*
- *Environmental Science: Processes & Impacts*
- *Journal of Environmental Quality*
- *Environmental International*
- *Journal of Hazardous Materials*

### **Grant Proposal Peer Reviewer**

- *Army Research Office Core HBC Program*