

## Amy Christiansen, PhD

Assistant Professor of Chemistry, Division of Energy, Matter & Systems, School of Science and Engineering  
University of Missouri – Kansas City  
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### EDUCATION

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- Ph.D. **Chemistry, University of California, Irvine** 2020  
Thesis Advisor: Dr. Ann Marie Carlton  
Program: Chemistry, Overall GPA: 3.99, Advanced to Candidacy 04/04/2018  
**Atmospheric Science, Rutgers University, New Brunswick, NJ** 2015 – 2016  
(Transferred to Univ. of CA, Irvine, to continue thesis work with Dr. Carlton)  
Program: Atmospheric Science, Overall GPA: 4.0
- B.A. **Chemistry & Environmental Studies, Gustavus Adolphus College, St. Peter, MN** 2015  
Overall GPA: 3.95, *Summa cum laude*

### PROFESSIONAL

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- Assistant Professor of Chemistry, University of Missouri – Kansas City** 2022-Present
- Postdoctoral Research, University of Montana, Dr. Lu Hu** 2020-2022  
**Co-advised by Dr. Loretta Mickley, Harvard University**  
Constraining NO<sub>x</sub> emissions inventories using global observation networks to improve model representation of long-term trends of tropospheric ozone in GEOS-Chem.
- Thesis Research, UCI, Dr. Ann Marie Carlton** 2015 – 2020  
Spatiotemporal analysis of water chemistry and impacts on particle chemical composition and radiative implications over the United States assessed via model output, surface monitoring network data, and satellite information.
- Chemistry Research Assistant, Gustavus Adolphus College, Dr. Amanda Nienow** 2013 – 2015  
Photochemical fate of pure Imidazolinone herbicides in aqueous solution and on the epicuticular waxes of corn and soybean plants.
- Chemistry Research Assistant, Gustavus Adolphus College, Dr. Jeff Jeremiason** 2012 – 2013  
Prevalence, transport, and biological impact of mercury in a mining-affected watershed and in an experimental forest in northern Minnesota.

### HONORS AND AWARDS

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- Atmospheric Chemistry Colloquium for Emerging Senior Scientists (ACCESS XVI)** 2021
- Most Promising Future Faculty Award, Department of Chemistry, Univ. of CA, Irvine** 2020
- Women in the Sciences Leadership Workshop, Earth Science Women's Network, Boulder, CO** 2019
- Student Poster Award at the 2017 American Association for Aerosol Research Annual Conference**
- School of Environmental and Biological Sciences Excellence Fellowship, Rutgers Univ.** 2015-2016
- Phi Beta Kappa Society, inducted Spring 2014**
- American Chemical Society Division of Environmental Chemistry Undergraduate Student Award** 2014
- Barry Goldwater Scholarship Nominee** 2014

### PUBLICATIONS

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12. *In review*. Christiansen, A.; Mickley, L.J.; Hu, L.: Constraining Long-Term NO<sub>x</sub> Emissions over the United States and Europe using Nitrate Wet Deposition Monitoring Networks. *Atmos. Chem. Phys. Disc.*

11. [2022] Flesch, M.M.; **Christiansen A.E.**; Burns, A.M.; Ghate, V.P.; Carlton, A.G.: Ambient Aerosol is Physically Larger on Cloudy Days in Bondville, Illinois. *ACS Earth Space Chem.*, **6**, 12, 2910-2918, <https://doi.org/10.1021/acsearthspacechem.2c00207>.
10. [2022] **Christiansen, A.**; Mickley, L.J.; Liu, J.; Oman, L.D.; Hu, L.: Multidecadal increasing global tropospheric ozone derived from ozonesonde and surface site observations: Can models reproduce ozone trends? *Atmos. Chem. Phys.*, **22**, 14751-14782, <https://doi.org/10.5194/acp-22-14751-2022>.
9. [2021] Pratap, V.; Carlton, A.G.; **Christiansen, A.E.**; Hennigan, C.J.: Partitioning of ambient organic gases to inorganic salt solutions: influence of salt identity, ionic strength, and pH. *Geophys. Res. Lett.*, **48**, e2021GL095247.
8. [2021] Pratap, V.; **Christiansen, A.**; Carlton, A.G.; Lance, S.; Casson, P.; Dukett, J.; Hassan, H.; Schwab, J.; Hennigan, C.: Investigating the evolution of water-soluble organic carbon in evaporating cloud water. *Environ. Sci.: Atmos.*, **1**, 21-30.
7. [2020] Lance, S.; Zhang, J.; Schwab, J.; Casson, P.; Brandt, R.; Fitzjarrald, D.; Schwab, M.; Lu, C.-H.; Chen, S.-P.; Yun, J.; Freedman, J.; Shrestha, B.; Min, Q.; Beauharnois, M.; Crandall, B.; Everette, J.; Brewer, M.; Minder, J.; Orłowski, D.; **Christiansen, A.**; Carlton, A.G.; Barth, M.: Overview of the CPOC Pilot Study at Whiteface Mountain, NY: Cloud Processing of Organics within Clouds (CPOC). *Bull. Am. Meteorol. Soc.*, 1-63.
6. [2020] **Christiansen, A.E.**; Carlton, A.G.; Henderson, B.H.: Differences in Fine Particle Chemical Composition on Clear and Cloudy Days. *Atmos. Chem. Phys.*, **20**, 11607-11624.
5. [2020] Carlton, A.G.; **Christiansen, A.E.**; Flesch, M.; Hennigan, C.J.; Sareen, N.: Multiphase Atmospheric Chemistry in Liquid Water: Impacts and Controllability of Organic Aerosol. *Acc. Chem. Res.*, **53**, 9, 1715-1723.
4. [2020] **Christiansen, A.E.**; Carlton, A.G.; Porter, W.C.: Changing Nature of Organic Carbon over the United States. *Env. Sci. Technol.*, **54**, 17, 10524-10532.
3. [2019] **Christiansen, A.E.**; Ghate, V.P.; Carlton, A.G.: Aerosol Optical Thickness: Organic Composition, Associated Particle Water, and Aloft Extinction. *ACS Earth Space Chem.*, **3**, 3, 403-412.
2. [2016] Anderson, S.C.; **Christiansen, A.**; Peterson, A.; Beukelman, L.; Nienow, A.M.: Statistical Analysis of the Photodegradation of Imazethapyr on the Surface of Extracted Soybean (*Glycine max*) and Corn (*Zea mays*) Epicuticular Waxes. *Environ. Sci.: Processes Impacts*, **18**, 10, 1305-1315.
1. [2015] **Christiansen, A.**; Peterson, A.; Anderson, S.C.; Lass, R.; Johnson, M.; Nienow, A.M.: Analysis of the Photodegradation of the Imidazolinone Herbicides Imazamox, Imazapic, Imazaquin, and Imazamethabenzmethyl in Aqueous Solution. *J. Agric. Food Chem.*, **63**, 50, 10768-10777.

Copies of these publications are available upon request.

## PRESENTATIONS

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20. **\*\*Invited: Christiansen, A.** (2023): “Evaluating the Environmental Justice Air Quality Landscape in Kansas City, MO”, American Geophysical Union Early Career Seminar Series, Virtual, June 2023.
19. **Christiansen, A.** (2023) **Poster**: “Evaluating the Air Quality Environmental Justice Landscape in the Kansas City Metropolitan Area”, American Chemical Society Spring Meeting, Indianapolis, IN, March 2023
18. **\*\*Invited: Christiansen, A.** (2023) **Guest Lecture**: “Long-Term Trends in Air Pollutants: Implications for Health and Climate”, Avila University, Kansas City, MO, March 2023
17. **Christiansen, A.E.**; Mickley, L.J.; Liu, J.; Oman, L.D.; Hu, L. (2022) **Oral**: “Constraining Long-Term NO<sub>x</sub> Emissions over the United States and Europe to Improve Simulations of Tropospheric Ozone”, 10<sup>th</sup> International GEOS-Chem Meeting, Washington University in St. Louis, MO, June 2022
16. **\*\*Invited: Christiansen, A.E.** (2022) **Guest Lecture**: “A Brief Primer on Atmospheric Aerosols: Water, Water, Everywhere”, University of Montana CHMY 541, Missoula, MT, May 2022
15. **\*\*Invited: Christiansen, A.E.** (2022) **Oral**: “Spatiotemporal Trends of Trace Atmospheric Pollutants on Regional Scales: Impacts on Climate and Air Quality”, University of Missouri – Kansas City, February 2022
14. **Christiansen, A.E.**; Mickley, L.J.; Liu, J.; Hu, L. (2021) **Oral**: “Multidecadal Global Ozone Trends from Ozonesonde and Surface Background Sites: Why Can’t Models Reproduce Trends?”, American Geophysical Union Fall Meeting, December 2021

13. **Christiansen, A.E.**; Mickley, L.J.; Hu, L. (2021) **Oral**: “Constraining Long-Term NO<sub>x</sub> Emissions over the United States and Europe to Improve Model Simulations of Tropospheric Ozone”, American Geophysical Union Fall Meeting, December 2021
12. **Christiansen, A.E.**; (2021) **Oral**: “Constraining Long-Term NO<sub>x</sub> Emissions over the United States and Europe to Improve Model Simulations of Tropospheric Ozone”, Atmospheric Chemistry Colloquium for Emerging Senior Scientists XVI, December 2021
11. **\*\*Invited: Christiansen, A.E.** (2021) **Oral**: “Spatiotemporal Trends of Trace Atmospheric Pollutants and Their Impacts”, University of Montana, November 2021
10. **Christiansen, A.E.**; Mickley, L.; Hu, L. (2020) **Virtual Poster**: “Constraining long-term NO<sub>x</sub> emissions over the United States and Europe to improve model simulations of tropospheric ozone”, American Geophysical Union Fall Meeting, November 2020
9. **Christiansen, A.E.**; Carlton, A.G.; Henderson, B.H. (2020) **Virtual Poster**: “Differences in Fine Particle Chemical Composition on Clear and Cloudy Days”, American Association for Aerosol Research Annual Conference, October 2020
8. **Christiansen, A.E.**; Carlton, A.G.; Davis, J.M.; Porter, W.C. (2019) **Poster**: “Decadal Trends in Particulate Organic Carbon Volatility Fractions”, American Chemical Society National Meeting & Expo, San Diego, CA, August 27, 2019
7. **\*\*Invited: Christiansen, A.E.** (2019) **Oral**: “The Clear Sky Bias: A Perspective from a Girl with Her Head in the Clouds”, UCI Southern California Undergraduate Research Symposium, Irvine, CA, August 3, 2019
6. **Christiansen, A.E.**; Carlton, A.G.; Henderson, B.H.; Srivistava, D.; Daniels, J. (2019) **Oral**: “The Clear Sky Bias: Reconciling Satellite and Surface Measurements of Atmospheric Aerosol Burden” at the AirUCI Internal Symposium, Irvine, CA, March 28, 2019
5. **Christiansen, A.E.**; Ghate, V.P.; Carlton, A.G. (2018) **Poster**: “Aerosol Optical Thickness: Organic Volatility and Associated Particle Water” at the American Geophysical Union Fall Meeting, Washington, DC, December 13, 2018
4. **Christiansen, A.E.**; Ghate, V.P.; Carlton, A.G. (2018) **Oral**: “Aerosol Optical Thickness: Regional Variation in Organic Composition and Associated Particle Water” at the Lake Arrowhead AirUCI Retreat, Lake Arrowhead, CA, September 25, 2018
3. **Christiansen, A.E.** and Carlton, A.G. (2017) **Poster**: “Spatial Differences in Summertime Enhancement of Aerosol Optical Thickness: Organic Carbon Fractionation and Particle Size”, American Association for Aerosol Research Annual Conference, Raleigh, NC, October 17, 2017 **\*\*Awarded Student Poster Award**
2. **Christiansen A.**; Peterson, A.; Nienow, A.M. (2014) **Poster**: “Photodegradation of Imidazolinone Herbicides and Pesticides in Aqueous Solution and on Plant Surfaces” at the American Chemical Society National Meeting, San Francisco, CA, August 2014
1. **Christiansen A.**; Peterson, A.; Nienow, A.M. (2013) **Poster**: “Imidazolinone Herbicides: Photodegradation in Aqueous Solution and on Waxes” at the Midstates Consortium Undergraduate Research Symposium in the Physical Sciences, Math, and Computer Science at the University of Chicago, Chicago, IL, October 25, 2013

## TEACHING EXPERIENCE

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### At UMKC:

#### Environmental Chemistry I

University of Missouri – Kansas City

*Spring 2023*

### Prior to UMKC:

#### **\*\*Instructor of Record, General Chemistry Plus (Chem 1X)**

University of California, Irvine, Chemistry Department

*Fall 2019*

Wrote and taught lectures, assigned homework, wrote and graded exams, assigned final grades, and held office hours. Taught for 1 quarter.

#### **Graduate-Level Chemical Kinetics Teaching Assistant**

University of California, Irvine, Chemistry Department

*Spring 2018*

Led discussion sections, graded assignments and exams, and held office hours. Taught for 1 quarter.  
**General Chemistry Teaching Assistant, Lab and Lecture** *AY 2016-2017*  
 University of California, Irvine, Chemistry Department  
 In lab, led freshman chemistry majors through new skills, graded assignments, and held office hours for 2 quarters. In lecture, led discussion sections and review sessions, graded assignments and exams, and held office hours for 1 quarter.

**Introduction to Climate Science Teaching Assistant** *Spring 2016*  
 Rutgers University Meteorology Department  
 Graded in-class exercises and exams. Taught for 1 semester.

**Environmental Chemistry Teaching Assistant** *Spring 2015*  
 Gustavus Adolphus College Chemistry Department  
 Assisted students during laboratory exercises and held office hours. Taught for 1 semester.

**General Chemistry Teaching Assistant** *AY 2014-2015*  
 Gustavus Adolphus College Chemistry Department  
 Assisted students during laboratory exercises and graded all assignments. Taught for 1 semester.

**Chemistry Tutor** *AY 2014-2015*  
 Gustavus Adolphus College Chemistry Department  
 Assisted students at all levels of undergraduate chemistry with homework and test preparation. Participated for 2 semesters.

## PEDAGOGICAL TRAINING AND MENTORSHIP

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**Mobile Summer Institute on Scientific Teaching, University of Montana** *2021*  
 Summer intensive course on evidence-based practices to create inclusive, student-centered learning experiences and improve outcomes.

**UNI STU 390X: Developing Teaching Excellence** *2018*  
 Quarter-long graduate course offered through the University of California, Irvine, on fundamental pedagogical research and develop effective teaching practices.

**University of California, Irvine, Course Design Certificate** *2018*  
 Awarded for design of a course syllabus, including all readings, exercises, and exams.

**University of California, Irvine, Center for the Integration of Research, Teaching, and Learning Associate Level** *2018*  
 12 hours of evidence-based teaching training; 3 hours of training in Learning through Diversity; 3 hours of training in Teaching as Research; participation in one quarter of a learning community that meets weekly.

**Preparing for the Faculty Career Program** *2019*  
 Weekly seminars on pathways to employment, components of a faculty job application, interview skills, and transitioning to the academic workforce.

**Teaching Assistant Mentor** *AY 2018-2019*  
 Mentored 5 incoming first-year graduate teaching assistants in how to effectively run classes and labs while managing teaching, coursework, and research responsibilities.

**Near-Peer Mentor** *Spring 2019*  
 Mentored undergraduate chemistry students from Reed College, Portland, OR, about preparing for graduate school.

## INTERNSHIPS AND FELLOWSHIPS

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**Air Quality Monitoring Intern**, EPA Region 2 Environmental Center, Edison, NJ *Summer 2016*  
**School of Environmental and Biological Sciences Excellence Fellow**, Rutgers Univ. *AY 2015 – 2016*

## ACADEMIC SERVICE AND AFFILIATIONS

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American Chemical Society

American Geophysical Union

American Association for Aerosol Research

Served as reviewer for *Atmospheric Chemistry & Physics*, *Journal of Geophysical Research – Atmospheres*, *Environmental Science: Atmospheres*, and *Science of the Total Environment*

American Association for Aerosol Research Student Chapter at UCI

*2019-2020*

Founding Member, Undergraduate Liaison, and Secretary

In charge of engaging undergraduate students in chapter events such as Q&A panels and workshops, as well as responsible for chapter meeting minutes.

University of California, Irvine, Chemistry Graduate Recruitment Events

*Spring 2018*

Participated in tours, Q&A panels, and dinners to recruit prospective graduate students.