Lauren Schmeisser

POSTDOCTORAL RESEARCHER

LAUREN.SCHMEISSER@NOAA.GOV

LINKEDIN: LAUREN SCHMEISSER

BOULDER, COLORADO

EDUCATION

PhD // ATMOSPHERIC SCIENCES
University of Washington, Seattle | 2015-2020

MSc // EARTH SCIENCES
Universiteit van Amsterdam, Netherlands | 2012-2013

BS/MS // CIVIL & ENVIRONMENTAL ENGINEERING
University of Colorado, Boulder | 2007-2012

RESEARCH EXPERIENCE

POSTDOCTORAL RESEARCHER

Cooperative Institute for Research in Environmental Sciences, NOAA | Boulder | 2020-present

Responsible for using aerosol optical property measurements from the NOAA Federated Aerosol Network to evaluate representation of aerosol in global climate models.

PhD STUDENT AND RESEARCHER

University of Washington | Seattle | 2015 – 2020

Responsible for PhD project analyzing the role of the atmosphere in the persistence of marine heatwaves using in-situ data, satellite data, and ensembles of climate model output. Funded by NSF IGERT fellowship, through UW Program on Ocean Change, with focus on interdisciplinary atmosphere-ocean climate research.

PROFESSIONAL RESEARCH ASSISTANT

National Oceanic and Atmospheric Administration | Boulder | 2014 – 2015

Responsible for standard operation procedure and quality control of Global Monitoring Division's global network of black carbon monitoring instruments (Aethalometers). Analyzed global aerosol data collected from surface in-situ instruments and published results in peer-reviewed journals. Worked with international collaborators on projects involving measurements from many monitoring stations around the world.

VISITING RESEARCHER - CLIMATE CHANGE & VARIABILITY

National Center for Atmospheric Research | Boulder | 2013

Analyzed long-term and flash drought characterization in various climate model runs. Explored impact of model parameterizations on drought using perturbed physics ensemble. Yielded master's thesis entitled: *Uncertainties in Predicting Drought with Climate Models.*

PUBLICATIONS & PRESENTATIONS

Peer-reviewed publications

1. **Schmeisser, L.**, et al. The role of net heat flux feedbacks in the persistence of marine heatwaves, in preparation.
2. **Schmeisser, L.**, et al. The role of the atmosphere in global marine heatwaves, submitted.
3. Backman, J., **Schmeisser, L.** & Asmi, E. Source area analysis of aerosol optical properties in the Arctic, submitted.
4. **Schmeisser, L.**, Siedlecki, S., Bond, N., & Ackerman, T.P. (2019). Cloud & radiative effects of a Northeast Pacific marine heatwave, J. Geophys. Res. Atmos, 124, 10772-10783.
5. **Schmeisser, L.,** Hinkelman, L. M., & Ackerman, T. P. (2018). Evaluation of Radiation and Clouds from Five Reanalysis Products in the Northeast Pacific Ocean. J. Geophys. Res. Atmos.:, 123(14), 7238-7253.
6. **Schmeisser, L.,** Backman, J., Ogren, J. A., et al. (2018). Seasonality of aerosol optical properties in the Arctic. Atmos. Chem. & Phys., 18(16), 11599-11622.
7. Bolden, I. W., Seroy, S. K., Roberts, E. A., **Schmeisser, L.,** et al. (2018). Climate-related community knowledge networks as a tool to increase learning in the context of environmental change. Climate Risk Management, 21, 1-6.
8. Backman, J., **Schmeisser, L.,** Virkkula, A., et al. (2017). On Aethalometer measurement uncertainties and an instrument correction factor for the Arctic. Atmos. Meas. Tech., 10(12).
9. **Schmeisser, L.,** Andrews, E., Ogren, J. A., et al. (2017). Classifying aerosol type using in situ surface spectral aerosol optical properties. Atmos. Chem. & Phys., 17(19), 12097-12120.
10. Sheridan, P., Andrews, E., **Schmeisser, L.,** et al. (2016). Aerosol Measurements at South Pole: Climatology and impact of local contamination. Aero. & Air Qual. Res., 16, 855-872.
11. Uttal, T., **et al.** (2016). International Arctic systems for observing the atmosphere: an international polar year legacy consortium. BAMS, 97(6), 1033-1056.
12. Sherman, J. P., Sheridan, P. J., Ogren, J. A., ... **Schmeisser, L.,** et al. (2015). A multi-year study of lower tropospheric aerosol variability and systematic relationships from four North American regions. Atmos. Chem. & Phys., 15(21), 12487-12517.

Conference presentations

1. **Schmeisser, L.**, Siedlecki, S.A., Bond, N.A. and Ackerman, T.P. Disruption of the Ocean Mixed Layer Heat Budget in Response to Marine Heat Waves, AGU Ocean Sciences, 15 February 2018, Portland, OR, USA
2. **Schmeisser, L.**, Siedlecki, S.A., Bond, N.A. and Ackerman, T.P. Surface Energy Budget Response During a Northeast Pacific Marine Heat Wave, Gordon Research Conference, 18 July 2017, Lewiston, ME, USA.
3. **Schmeisser, L.**, Siedlecki, S.A., Ackerman, T.P. and Bond, N.A. Surface Energy Budget Disruption in the Northeast Pacific in Response to a Marine Heat Wave, AGU Fall Meeting, 13 December 2016, San Francisco, CA, USA.
4. **Schmeisser, L.**, Ogren, J.A., Sharma, S., Asmi, E., Bergin, M.H., Jefferson, A. Andrews, E., Tunved, P., Backman, J., and Starkweather, S. Climatology and Characteristics of In-Situ Aerosol Optical Properties in the Arctic, AGU Fall Meeting, 15 December 2015, San Francisco, CA, USA.
5. **Schmeisser, L.,** Andrews, E., et al. AeroCom INSITU Project: Comparison of Aerosol Optical Properties from In-situ Measurements and Model Simulations, AGU Fall Meeting, 17 December 2015, San Franciscos, CA, USA.
6. **Schmeisser, L.,** Backman, J. et al. Climatology and Characteristics of Aerosol Optical Properties in the Arctic. Arctic Observing Open Science Meeting, 18 November 2015, Seattle, WA, USA.
7. **Schmeisser, L.,** Ogren, J. A., and Andrews, E. Can We Characterize Aerosol Type Using Aerosol Optical Properties?, NOAA ESRL Global Monitoring Annual Conference, 20 May 2014, Boulder, CO, USA.

AWARDS & HONORS

UW COLLEGE OF ENVIRONMENT DEAN'S MEDALIST // *2019*
NSF IGERT FELLOWSHIP // *2015-17*
CUM LAUDE MSc // *2013*
ROTARY INTERNATIONAL AMBASSADORIAL SCHOLAR // *2012*
UNIVERSITY OF AMSTERDAM FULL RIDE SCHOLARSHIP // *2013*
UNIVERSITY OF COLORADO NOMINEE FOR OUTSTANDING GRADUATE // *2012*
1st PLACE AECOM WATER DESIGN COMPETITION // *2012*
DEAN'S LIST COLLEGE OF ENGINEERING // *2009-12*
ENGINEERING HONORS PROGRAM at UNIVERSITY OF COLORADO // *2007-12*

TEACHING EXPERIENCE

INSTRUCTOR

Introduction to Global Warming | ATMS 111 | 2019,20

Developed syllabus and instructional materials , delivered 45+ hours of lectures for undergraduate climate course

INSTRUCTOR

Exploring the Atmospheric Sciences | ATMS 220 | 2017,18,19

Developed syllabus and organized guest speakers for undergraduate atmospheric science course

LEAD TEACHING ASSISTANT

ATMS 111, 101 & 211 | 2017,18

Responsible for training and supervising all department TAs

TEACHING ASSISTANT

Introduction to Global Warming | ATMS 111| 2017,18

Taught quiz sections and provided support for course professor, guest lectured 3+ hours

ADDITIONAL PROJECTS

CONSULTANT - MICRONESIA CLIMATE KNOWLEDGE NETWORK

NSF IGERT Program on Ocean Change | Pohnpei | 2015-2019

Consultant with NGO Pacific Resources for Education and Learning on climate knowledge network and climate adaptation strategies in Pohnpei. Outcomes included scientific publication, teacher's workshop, and ongoing knowledge network on island.

WHITE PAPER AUTHOR

Extreme Event Attribution & Climate Litigation | Seattle | 2019

Collaborated with practicing attorneys, UW law professors and graduate students to write a white paper on climate event attribution science in climate litigation cases.

PROJECT MANAGER – SPRING WATER CATCHMENT SYSTEM

Engineers Without Borders | Peru | 2007 – 2012

Led team of ~30 students per semester in planning, designing and implementing water projects in Peru. Granted the EWB-USA Outstanding Project Award of 2011.

PROJECT ENGINEER – WATER SOFTENING & TREATMENT

International AECOM Water Design Team | Boulder | 2012

Designed water softening treatment using USEPA Water Treatment Plant Model . Conducted lifecycle analysis, cost analysis, work plan, etc. with team of engineering students. Presented at international competition in New York City at AECOM headquarters and won 1st place.

INDEPENDENT STUDY RESEARCHER

Collaboration with CU Engineering Professor | Boulder | 2012

Researched environmental and socioeconomic impacts of climate change on communities in Andean region of South America, with Professor Paul Chinowsky.

STUDENT MENTOR & STUDENT LEADERSHIP DIRECTOR

CU Engineering Honors Program | Boulder | 2007-2012

Worked as peer mentor & tutor for underclassmen engineering honors students. Planned and implemented program events (e.g., speaker series, cultural activities, community outreach).

TECHNICAL SKILLS

- Programming: Python, R, NCL
- Linux environment
- Microsoft Office suite
- Data analysis & visualization
- Statistics with research applications
- Technical writing
- Climate model analysis
- Atmospheric instrumentation

COMMUNITY ENGAGEMENT

- Mentoring program coordinator
- Industry seminar coordinator
- Women's group coordinator
- Engineers Without Borders
- K-12 outreach leader
- Climate voices speaker
- Rotary Boulder Flatirons board member

ADDITIONAL INTERNATIONAL EXPERIENCE

UNFCCC COP24 ATTENDEE
***Katowice, Poland* | 2018**
Observer at United Nations Framework on Climate Change 24th Conference of the Parties

IMBeR SUMMER SCHOOL
***Yogyakarta, Indonesia* | 2018**
Selected attendee for school on interdisciplinary climate and marine science

INVITED VISITING SCIENTIST
***Oslo, Norway* | 2015**
Collaborator at Norwegian Meteorological Institute on project validating aerosols in climate models using in-situ data