

Zachary C.J. Decker – Curriculum Vitae

Zachary.Decker@NOAA.gov // ZacharyCJDecker@gmail.com // ZacharyCJDecker.com

About me

I am an atmospheric scientist specializing in operating atmospheric instrumentation to study air quality impacts from aerosols and gases. I go where we need answers, whether that be a flying laboratory through wildfire smoke or a long-term monitoring station atop the Swiss Alps. I am motivated by my love for the outdoors and to affect positive change for the environment.

Education

- Aug 2016 – Ph.D. University of Colorado at Boulder (CU)
Aug 2021 Physical Chemistry
- Aug 2012 – B.A. New College of Florida, Florida's Honors College (NCF)
Jan 2016 Honors / Physical Chemistry

Appointments

- Jan 2024 – Research Scientist II
Current Atmospheric Composition & Chemical Processes Group
Cooperative Institute for Research in Environmental Sciences (CIRES)
National Oceanic and Atmospheric Administration (NOAA)
- Jan 2022 – Postdoctoral Fellow
Dec 2023 Paul Scherrer Institute (PSI), Switzerland
- Aug 2021 – Career Break
Dec 2021 Camping and hiking across Western North America
- May 2016 – Graduate Research Assistant
Jul 2021 Tropospheric Chemistry Group at CIRES & NOAA

Synergistic Activities

Science Outreach

- Senior Editor at Science Buffs: 2017 – 2021
- CU Wizards organizer and performer: 2019 – 2021
- NOAA Outreach presenter at conferences: 2018 – 2020

Mentoring

- Ph.D. student mentor at PSI: 2022
- Colorado Mountain Club volunteer instructor for the Alpine Climbing School: 2025 –
- Graduate student peer mentor at CU Boulder: 2020

Teaching

- STEM tutoring for middle to college level: 2013 – 2021
- Teaching Assistant in Chemistry: 2013 – 2017
- Teacher for SAT/ACT prep courses at the IMG Academy: 2014 – 2016

Honors, Awards, and Fellowships

- Postdoctoral Fellow (PSI): 2022
- Irish Research Council Postdoctoral Fellowship (*declined*): 2021
- Bronze Medal – CIRES: 2021
- Administrator Award – CIRES: 2021
- Group Achievement Award – NASA, for FIREX-AQ: 2021
- Graduate Research Fellowship – CIRES: 2019
- Outstanding Student Presentation Award – American Geophysical Union: 2018
- 1st place at the 12th Annual Earth System and Space Science Conference: 2018

Select Publications & Metrics – See google scholar for up-to-date metrics

Total publications: 15 [6 first author] // Times cited: 369 // H-index: 12

- Feb 2024 **Decker Z. C. J.,...**, Brem B.T. Emission and Formation of Aircraft Engine Oil Ultrafine Particles *Env. Sci. Tech. Air*. 2024, 1, 12, doi.org/10.1021/acsestair.4c00184
- Feb 2024 **Decker Z. C. J.,...**, Brown S.S. Airborne Observations Constrain Heterogeneous Nitrogen and Halogen Chemistry on Tropospheric and Stratospheric Biomass Burning Aerosol *Geophys. Res. Lett.* 2024, 51, 4, doi.org/10.1029/2023GL107273
- Nov 2021 **Decker Z. C. J., ...**, Brown S.S. A Novel Analysis to Quantify Plume Crosswind Heterogeneity Applied to Biomass Burning Smoke *Environ. Sci. Technol.* 2021, 55, 23, 15646 – 15657, doi.org/10.1021/acs.est.1c03803
- Jan 2019 **Decker Z. C. J.,...**, Brown S.S., Nighttime chemical transformation in biomass burning plumes: a box model analysis initialized with aircraft observations *Environ. Sci. Technol.* 2019, 53, 5, 2529-2538. doi.org/10.1021/acs.est.8b05359

Select Field Research Campaigns

Total deployments: 8 // Platforms: Ground (5), Mobile (2), Aircraft (1), Chamber (1)

- Sep 2021 – **APPROPRIATE** | Campaign lead for VOC and particle comp. measurements
 Nov 2021 *Aviation Plume PROPeRtles AT point of Exposure*
- Jun 2019 – **FIREX-AQ** | Co-operator for VOC measurements
 Sep 2019 *Fire Influence on Regional to Global Environments Experiment - Air Quality*
- May 2017 – **FAST-LVOS** | Instrument lead for Nitrogen Oxides measurements
 Jul 2017 *Fires, Asian, and Stratospheric Transport-Las Vegas Ozone Study*