Matthew M. Coggon – Curriculum Vitae

Chemical Sciences Laboratory, National Oceanic and Atmospheric Administration
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Interests

Chemistry of volatile organic compounds, chemical ionization mass spectrometry, emissions from anthropogenic and natural sources, secondary organic aerosol formation, heterogeneous aerosol chemistry.

Education

PhD. Chemical Engineering, California Institute of Technology, 2015
B.S. Chemical Engineering, University of Massachusetts, 2010

Appointments

Research Chemist **2022 – Present**
NOAA Chemical Sciences Laboratory, Boulder, CO

Research Scientist **2016 – 2022**
CIRES, University of Colorado, Boulder, CO

CIRES Visiting Postdoctoral Researcher **2015 – 2016**
CIRES, University of Colorado, Boulder, CO

Graduate Research Assistant **2010 – 2015**
California Institute of Technology, Pasadena, CA.

Multi-Institutional Field and Laboratory Campaigns

Eastern Pacific Emitted Aerosol Cloud Experiment **2011**
(E-PEACE, Aircraft, California Coast)

Nucleation in California Experiment **2013**
(NiCE, Aircraft, California Coast)

Focused Isoprene Experiment at Caltech **2013**
(FIX-CIT, Laboratory, Caltech, Pasadena, CA)

Biogenic Organic Aerosol Study **2015**
(BOAS, Aircraft, California Coast)

Fire Sciences Laboratory **2016**
(Firelab 2016, Laboratory, USFS, Missoula, MT)

New York Investigation of Consumer Emissions **2018**
(NY-ICE, Mobile Laboratory, New York, NY)

Long Island Sound Tropospheric Ozone Study **2018**
(LISTOS, Mobile Laboratory, New York, NY)

Fire Influence on Regional to Global Environments **2019**
(FIREX-AQ, Aircraft,Western/Eastern US)

COVID Air Quality Study **2020**
(COVID-AQS, Ground Study, Boulder, CO)

	Southwest Urban NOx and VOC Experiment (SUNVEX, Mobile Laboratory, Las Vegas, NV)	**2021**
	Re-Evaluating the Chemistry of Air Pollutants in California (RECAP-CA, Mobile Laboratory, Pasadena, CA)	**2021**
	Marshall Fire Rapid Response (Marshall Fire, Mobile Laboratory, Boulder, CO)	**2022**
	Secondary organic aerosol Chamber Experiments for Non-Traditional Species (SCENTS, Laboratory, CSU, Fort Collins, CO)	**2022**
	Atmospheric Emissions and Reactions Observed from Megacities to Marine Areas (AEROMMA, Aircraft, Western / Eastern US)	**2023**

Awards

CO-LABS Governors Award for High-Impact Research, 2022
Boulder Healthy Community Awards for Marshall Fire Response, 2022
CIRES Outstanding Performance Award, 2021
NASA Group Achievement Award for FIREX-AQ, 2021
CIRES Administrator Award for FIREX-AQ, 2021
CIRES Visiting Postdoctoral Fellowship, 2015–2016

Funding

EPA STAR (grant 84001001), PI, (2020–2023). "Evaluating Chemical Mechanisms with Recent Field Data to Account for the Contributions of Volatile Chemical Product Emissions to Urban Ozone Pollution" $394,000

Clark County, NV, Co-I (2021). "Las Vegas Field Measurements of Volatile Chemical Product and Mobile Source Emissions: Ozone formation and its sensitivity to NO_x and VOCs." $386,0000

CIRES Innovative Research Program, PI, (2018). "Do people or forests emit more monoterpenes? Detection of monoterpene emissions from volatile chemical products in urban areas" $24,000

Synergistic Activities

Science Outreach: (i) Colorado Science Fair judge (2016). (ii) University of Colorado Science Ambassador (2017-2018) (iii) Co-organizer for monthly NOAA science seminars (2018–2019) (iv) Member of the Global Emissions InitiAtive (GEIA) VOC working group (2023 – present)

Mentoring: (i) Research mentor for NOAA Hollings Scholars (2020, 2021) (ii) Mentor for NSF SOARS Interns (2021)

Teaching: (i) Teaching assistant for Chemical Engineering classes, with 5 lectured classes, in Separation Processes, Dynamics and Control of Chemical Systems, and Thermodynamics (Caltech, 2011-2014). (ii) Guest lecturer for atmospheric science classes at University of Denver and CU Boulder.

Select Publications

Coggon, M.M. Gaktzelis, G.I., Mcdonald, B.C., Gilman, J.B., Abuhassan, N., Aikin, K., Arend, M., Berkoff, T., Campos, T., Gronoff, G., Hurley, J., Isaacman-VanWertz, G., Koss, A.R., Li, M., McKeen, S.A., Moshary, F., Peischl, J., Pospisilova, V., Wilson, A., Wu, Y., Brown, S., Trainer, M., Warneke, C. (2021). Volatile chemical product emissions enhance ozone and modulate urban chemistry. *PNAS*, 118 (32), 1-9, DOI:10.1073/pnas.2026653118.

Coggon, M.M., Lim, C., Koss, A.R., Sekimoto, K., Yuann, B. Gilman, J.B., Hagan, D.H., Selimovic, V., Zarzana, K.J., Brown, S.S., Roberts, J.M., Muller, M.,, Yokelson, R., Wisthaler, A., Krechmar, J., Jimenes, J., Cappa, C., Kroll, J., de Gowu, J., and Warneke, C. (2019). OH chemistry of non-methane organic gases (NMOGs) emitted from laboratory and ambient biomass burning smoke: evaluating the influence of furans and oxygenated aromatics on ozone and secondary NMOG formation, *Atmos. Chem. Phys.*, 19, 14875-14899, DOI:10.5194/acp-19-14875-2019.

Coggon, M.M., McDonald, B., Vlasenko, A., Veres, P., Bernard, F., Koss, A., Yuan, B., Gilman, J., Peischl, J., Aikin, K., DuRant, J., Warneke, C., Li, S-M., and de Gouw, J.A. (2018). Diurnal variability and emission pattern of decamethylcyclopentasiloxane (D5) from the application of personal care products in two North American cities. *Environ. Sci. Technol.*, 52, 5610–5618.

Yuan, B., Koss, A.R., Warneke, C., **Coggon, M.M.**, Sekimoto, K., and de Gouw, J.A. (2017). Proton-transfer-reaction mass spectrometry: Applications in atmospheric sciences. *Chem. Rev.*, 117 (12), 13187–13229.

Coggon, M.M., Veres, P., Yuan, B., Koss, A., Warneke, C., Gilman, J., Lerner, B., Peischl, J., Aikin, K., Stockwell, C., Hatch, L., Ryerson, T., Roberts, J., Yokelson, R., and de Gouw, J. (2016). Emissions of nitrogen-containing organic compounds from the burning of herbaceous and arboraceous biomass: fuel composition dependence and the variability of commonly used nitrile tracers. *Geophs. Res. Lett.*, 43.

ResearcherID: I-8604-2016

Other Service

Caltech Title IX graduate representative	2014-2015.
Caltech Paddling Club co-founder and president	2012-2015.
Kayaking instructor for Colorado Whitewater	2015-present.
Volunteer, Boulder Shelter for the Homeless	2016-present.