Soroush E. Neyestani

Curriculum Vitae

Department of Environmental Sciences
University of California, Riverside
Riverside, CA 92507
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Research Interests

- Air quality and climate modeling
- Aerosols-radiation interaction
- Biomass burning smoke plume rise
- Remote-sensing data analysis

Education

Ph.D., Engineering — 2017 – 2021
University of Georgia
Advisor: Rawad Saleh

M.Sc., Environmental Engineering — 2013 – 2016
University of Tehran
Advisor: Khosro Ashrafi and Majid Shafiepour

B.Sc., Mining Engineering — 2007 – 2012
Azad University - South Tehran

Research Experience

Postdoctoral Scholar — 2021 - present
Department of Environmental Sciences, UC Riverside
Projects: (1) Constrained heat flux input in WRF-Chem plume rise using MODIS fire radiative power and modeled air quality effects. (2) Applying Freitas plume rise in GEOS-Chem model and accounting for combustion phase temporal distribution in the model using TROPOMI data.

Graduate Research Assistant — 2017 – 2021
College of Engineering, University of Georgia
Projects: (1) Modified emission inventory then calculated gasoline vehicles direct radiative effect and attributable fraction using WRF-Chem. (2) Added a parameterization for brown carbon light absorption to WRF-Chem and constrained the model results with observational data.

Research Intern — 2018 (Fall)
NASA DEVELOP, Athens, GA
Project: Retrieved water turbidity and sea surface temperature over Golfo Dulce in Costa Rica using Aqua-MODIS and Landsat-OLI.

Graduate Researcher — 2013 – 2016
Faculty of Environment, University of Tehran
Project: Detected (MODIS/AIRS) dust storms over the Middle East and modeled the effect on air quality and radiation using WRF-Chem.

Teaching Experience

Guest Lecturer

Department of Environmental Sciences, UC Riverside

Course 1: Introductory atmospheric science 2022 (Spr.)

Course 2: Weather and climate 2022 (Win.)

Teaching Assistant

College of Engineering, University of Georgia 2021 (Spr.)

Course: Air pollution engineering 2020 (Spr.)

Honors and Awards

Excellence in graduate research award 2020

College of Engineering, University of Georgia

Top 5% in civil/environmental engineering national graduate entrance exam 2013

Skills

- Regional/global chemical transport models (WRF-Chem and GEOS-Chem)
- Emission processing models (SMOKE)
- Programming languages (Fortran, Python, and NCL)
- Geospatial analytical tools (GEE)
- Unix-based HPC systems

Selected Graduate Courses

Air Quality Modeling, Air Pollution Meteorology, Atmospheric Chemistry, Climatology, Atmospheric Aerosols, Aerosol Science and Engineering, Advanced Fluid Mechanics, Computational Engineering, Engineering Mathematics.

Publications

- Brumberg, H.; Furey, S.; Bouffard, M. G.; Mata Quirós, M. J.; Murayama, H.; **Neyestani, S.**; Pauline, E.; Whitworth, A.; Madden, M., Increasing forest cover and connectivity both inside and outside of protected areas in southwestern Costa Rica. *Remote Sensing*. **2024**, 16(6), 1088. doi:10.3390/rs16061088.
- Kiely, L.; **Neyestani, S. E.**; Binte-Shahid, S.; York, R. A.; Porter, W. C.; Barsanti, K. C., California case study of wildfires and prescribed burns: $PM_{2.5}$ emissions, concentrations, and implications for human health. *Environmental Science & Technology*. **2024**. doi: 10.1021/acs.est.3c06421

- **Neyestani, S. E.**; Porter, W. C.; Kiely, L., Air quality impacts of observationally constrained biomass burning heat flux inputs. *Science of the Total Environment*. **2024**, 917-170321. doi:10.1016/j.scitotenv.2024.170321.
- Islam, M. M.; **Neyestani, S. E.**; Saleh, R.; Grieshop, A. P., Quantifying brown carbon light absorption in real-world biofuel combustion emissions. *Aerosol Science and Technology*. **2022**, 56 (6), 502-516. doi:10.1080/02786826.2022.2051425.
- **Neyestani, S. E.**; Saleh, R., Observationally constrained representation of brown carbon emissions from wildfires in a chemical transport model. *Environmental Science: Atmospheres*. **2022**, 2 (2), 192-201. doi:10.1039/D1EA00059D.
- **Neyestani, S. E.**; Walters, S.; Pfister, G.; Kooperman, G. J.; Saleh, R., Direct radiative effect and public health implications of aerosol emissions associated with shifting to gasoline direct-injection (GDI) technologies in light-duty vehicles in the United States. *Environmental Science & Technology.* **2020**, 54 (2), 687-696. doi:10.1021/acs.est.9b04115.
- Ashrafi, K.; Motlagh, M. S.; **Neyestani, S. E.**, Dust storms modeling and their impacts on air quality and radiation budget over Iran using WRF-Chem. *Air Quality Atmosphere and Health.* **2017**, 10 (9), 1059-1076. doi:10.1007/s11869-017-0494-8.

Presentations

Conferences:

- AGU Fall Meeting (poster). San Francisco, CA. December 2023.
- AGU Fall Meeting (poster). Chicago, IL. December 2022.
- IAWF Fire & Climate Conference (poster). Pasadena, CA. May 2022.
- AAAR 37th Annual Conference (platform). Portland, OR. October 2019.
- 10th International Aerosol Conference (poster). St. Louise, MO. September 2018.

Seminars:

- Graduate seminar course at the University of Georgia. Athens, GA. April 2020.
- Riverbend research highlight seminar at the University of Georgia. Athens, GA. June 2019.

Professional Activities

Peer reviewing:

- Environmental Science & Technology - Air, March 2024.
- Atmospheric Pollution Research, November 2023.
- Environmental Science & Technology, April 2023.

Conference convening:

- Convener and Co-chair, American Geophysical Union Fall Meeting, session "*Advances in Wildland Fire – Atmosphere Interactions*". Chicago, IL. December 2022.

Mentorship:

- Mentoring (unofficial) six graduate students. University of California, Riverside, Graduate Student Mentorship Program. 2023-24 (ongoing).

Media Coverage

- Obama helped make cars more efficient, but now they spew black carbon. Grist, February 2020.
- Fuel efficient tech may threaten climate, public health. Eurekalert, January 2020.