Haroula D. Baliaka

LinkedIn · Google Scholar
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EDUCATION

Sep 2021 – present **Ph.D., Environmental Science and Engineering**
California Institute of Technology, Pasadena, CA

Sep 2021 – Jun 2023 **M.S., Environmental Science and Engineering (GPA 3.9/4.0)**
California Institute of Technology, Pasadena, CA

Sep 2015 – Jul 2020 **Dipl. Ing., Chemical Engineering (5-year degree, GPA 8.98/10)**
University of Patras, Greece
Graduated 1st out of 120 students | Professional Engineering License, Technical Chamber of Greece (2021).

RESEARCH EXPERIENCE

Sep 2021 – present **Graduate Student Researcher**
California Institute of Technology, Pasadena, CA
Advisor: Prof. Paul Wennberg

- Led rapid-response research on air quality after 2025 Eaton Fire. Published findings on elevated lead levels in the air. Featured in *The New York Times*.
- Designed and deployed a time-sensitive network of air quality sensors to assess post-fire dust mitigation activities (PHOENIX) in Altadena, CA. Provided critical data to community members, public agencies, and LA County Public Health during recovery efforts (>11,000 website views).
- Led an air quality monitoring site in Los Angeles as part of a multi-million and multi-institution project (ASCENT). Supported lifecycle management of environmental monitoring instruments, including deployment, maintenance coordination, documentation, and troubleshooting.
- Developed sulfur isotope methods for source apportionment in the Los Angeles basin (funded by Resnick Sustainability Institute).

Sep 2019 – Aug 2021 **Research Scholar**
Foundation for Research and Technology – Hellas, Patras, GR
Advisors: Prof. Spyros Pandis, Prof. Athanasios Nenes

- Developed study protocols and optimized a semi-automated measurement system for atmospheric studies, supporting both field and laboratory research.
- Conducted measurements as part of PANACEA and PyroFEVER campaigns focusing on oxidative potential and brown carbon.

SCIENCE POLICY EXPERIENCE

Summer 2026 **Science Policy Intern**, Washington State Department of Health
Caltech LCSSP Fellowship focused on energy resource constraints and built environment policy planning.

2026 – present **Community Scientist**, AGU Thriving Earth Exchange
Community-Led Sulfur Pollution Assessment, Port Townsend, WA. Supporting community air quality monitoring design and policy engagement for sulfur emissions.

Dec 2024 – Feb 2025 **California Council on Science & Technology (CCST) Science Translator**
Completed science policy communications training for translating research for policy audiences.

AWARDS & FELLOWSHIPS

2025 **CCID Celebration of Excellence Award**, Caltech
Led the PHOENIX air quality project following the Eaton Canyon fire.

2025 **Three Minute Thesis (3MT) Finalist**, Caltech
Recognized for compelling communication of doctoral research to a non-specialist audience.

2024 **GPS Mentoring and Outreach Award**, Caltech
Led and scaled Caltech's K–12 outreach program GO-Outdoors; developed lesson plans, oversaw 10+ projects, and doubled reach within one year to 1000+ students from underrepresented schools.

2024 **ESE Community Building Award**, Caltech
Recognized for contributions to supporting and enhancing the Caltech Environmental Science and Engineering option.

2023 – 2026 **Onassis Foundation Academic Excellence Scholarship** ($36,000)
A competitive, merit-based scholarship awarded to 70 Greek scholars worldwide for academic excellence and research potential.

2023 **Ariston–NHSA Prize** ($1,000)
Selective merit-based scholarship awarded to distinguished students of Hellenic descent for academic excellence and leadership.

2022 – 2026 **Resnick Sustainability Institute Explorer Grant** ($94,906)
Competitive research funding supporting sustainability-focused doctoral work.

2017 – 2021 **6 Undergraduate Academic Excellence Awards**
Technical Chamber of Greece Honorary Award (2024); University of Patras Valedictorian Award (2021); State Scholarships Foundation (IKY) Award (2020); "Alkiviades Payatakes" Award (2019); Dept. of Chemical Engineering Award (2018); "Dimitris Evanggelou" Award (2017).

OUTREACH & COMMUNITY SERVICE

Mar 2026 **Conference Symposium Co-Organizer**, American Chemical Society (ACS) Spring Meeting, Atlanta, GA.
Co-led and organized the symposium "Wildland Urban Interface (WUI) Fire Impacts on Environmental Systems: Integrating Soil, Water, Air, and Public Health Perspectives" and served as session presider.

2021 – 2025 **ASCENT Standard Operating Procedures Student Committee Member**, NSF Atmospheric Science and Chemistry mEasurement NeTwork (12 institutions).
Coordinated measurement protocols across a multi-institutional research network and received a Certificate of Appreciation in recognition of outstanding contributions to ASCENT.

2022 – 2024 **Lab Safety Officer**, Seinfeld Group, Caltech.
Enforced safety standards and ensured safe laboratory operations.

2024	**Scientific Outreach Event Co-Organizer**, Caltech. Linde Center Open House (100 participants); Two-day Science Symposium (150 participants).
2024	**International Student Programs (ISP) Orientation Leader**, Caltech
2023 – 2024	**GO-Outdoors Program Lead**, Caltech
2022 – present	**Founder & President, Hellenic Students Association of Caltech**

TEACHING & MENTORING

Sep 2022 – present **Teaching Assistant**
California Institute of Technology, Pasadena, CA

- Atmospheric Chemistry I (ESE/Ge/Ch 171)
- Climate Change Impacts, Mitigation and Adaptation (ESE/ME/EST/Ec/ChE/EE 179)
- Mentoring and Outreach for GO-Outdoors (Ge/ESE 298; 3 quarters)

2023 – 2026 **Guest Lecturer**
California Institute of Technology, Pasadena, CA

- Current Problems in Environmental Science and Engineering (ESE 104; 2024, 2026)
- Environmental Impacts of Wildfire (ESE 200; 2025)
- Atmospheric Chemistry I (ESE 171; 2023)

Summer 2024 **SURF Student Mentor**
California Institute of Technology, Pasadena, CA

- Mentored an undergraduate researcher over a 10-week Caltech SURF program. Project: "Evolution of black and brown carbon in the Los Angeles Basin."
- Received Caltech's Certificate of Interest in Undergraduate Research Mentoring.

SCIENCE COMMUNICATION & MEDIA COVERAGE

- *The New York Times*, "Airborne Lead and Chlorine Levels Soared as L.A. Wildfires Raged," January 2025
- *Caltech Science Exchange Public Webinar*, "Environmental Impacts of Fires at the Wildland-Urban Interface," (∼2,000 attendees), January 31, 2025
- *Caltech News*, "Caltech Aerosol Monitoring Site Collects Data in Aftermath of Urban Firestorm," 2025
- *Caltech News*, "PHOENIX Air Monitoring Project in Altadena Rises from the Ashes," 2025
- *Caltech Science Exchange Public Webinar*, "Air Quality and Health After the Fires," (∼600 attendees), May 2, 2025
- *Caltech News*, "One Year Later, Fire Research Continues to Support the Community," 2026

PUBLICATIONS

In Preparation (pre-print available upon request)

- **Baliaka, H.D.**, Ward, R.X., Raffuse, S.M., Ries, B., Cui, Y., Wu, D., Liu, R., Barut, C., Hasheminassab, S., Tissot, F., Russell, A., Seinfeld, J.H., Flagan, R.C., Wennberg, P.O., Bahreini, R., Ng, N.L. Real-Time Trace Element Insights from the 2025 Los Angeles Urban Eaton Firestorm.
- **Baliaka, H.D.**, Roehl, C., Kanakaris, N., de la Torre Juarez, M., McDowell, M., Aguilar Rivera, I., Tacail, T., Tissot, F.L.H., Blankenship, V., Hasheminassab, S., Morrell, T., Habre, R., Ng, N.L., Seinfeld, J.H., Flagan, R.C., Wennberg, P.O. PHOENIX: A dense sensor network for outdoor PM monitoring in Altadena, CA after the 2025 Eaton Fire.
- **Baliaka, H.D.**, Dalleska, N., Sessions, A., Wennberg, P.O. New isotopic analysis for sulfur source attribution in Los Angeles.

Peer-Reviewed

- **Baliaka, H.D.**, Ward, R.X., Bahreini, R., Dillner, A.M., Russell, A.G., Seinfeld, J.H., Flagan, R.C., Wennberg, P.O., Ng, N.L. (2025). Notes from the field: Elevated atmospheric lead levels during the Los Angeles urban fires. *CDC MMWR*. doi:10.15585/mmwr.mm7405a4
- Ward, R.X., **Baliaka, H.D.**, Schulze, B.C., Kerr, G.H., Crounse, J.D., Hasheminassab, S., Bahreini, R., Dillner, A.M., Russell, A., Ng, N.L., Wennberg, P.O., Flagan, R.C., Seinfeld, J.H. (2025). Poorly quantified trends in ammonium nitrate remain critical to understand future urban aerosol control strategies. *Science Advances*. doi:10.1126/sciadv.adt8957
- Chen, H., Nie, Q., Yu, Q., Li, J., Niu, M., Yao, Y., Boo, P., Kyi, A., Chao, C.-Y., Deveraux, E., Sung, D.H., Lin, C.-H., Neville, A.C., Blankenship, V., **Baliaka, H.D.**, Flagan, R., Ng, N.L., Bahreini, R., Dillner, A.M., Russell, A.G., Misztal, P.K., Hildebrandt Ruiz, L., Zhu, Y. (2026). Characterizing Post-Fire Fine and Ultrafine Particles in the 2025 Eaton Fire Burn Zone and Nearby Areas. *ChemRxiv Preprint*. doi:10.26434/chemrxiv.10001972/v1
- Murphy, S.E., Buenconsejo, R.S., Draper, D.C., Crounse, J.D., **Baliaka, H.D.**, Ward, R.X., Schulze, B.C., Rezgui, S.P., Ball, K., Susskind, T., Kappaganthula, G., Wennberg, P.O. (2025). Multi-functional Organic Nitrogen in the Los Angeles Air Basin. *ACS ES&T Air*. doi:10.1021/acsestair.5c00206
- Kaltsonoudis, C., Florou, K., Kodros, J.K., Jorga, S.D., Vasilakopoulou, C.N., **Baliaka, H.D.**, Matrali, A., Aktypis, A., Georgopoulou, M.P., Nenes, A., Pandis, S.N. (2024). Significant contributions of fresh and aged biomass burning organic aerosol from residential burning in a wintertime urban environment. *Atmospheric Environment*. doi:10.1016/j.atmosenv.2024.121018

INVITED TALKS

- **Baliaka, H.D.** Air quality changes during and after the 2025 Eaton Fire in Los Angeles. *ENV H 580: Environmental and Occupational Health Seminar*, DEOHS, University of Washington, April 30, 2026.
- **Baliaka, H.D.** Air quality changes during and after the 2025 Eaton Fire in Los Angeles. *9zero Climate Innovation Hub*, Seattle, WA, April 30, 2026.
- **Baliaka, H.D.** Air quality changes during and after the 2025 Eaton Fire in Los Angeles. *Department of Chemistry and Biochemistry*, California State University Fullerton, April 9, 2026.
- **Baliaka, H.D.** Air quality changes during and after the 2025 Eaton Fire in Los Angeles. *ATMOS 523: Seminar in Atmospheric Physics and Chemistry*, Department of Atmospheric and Climate Science, University of Washington, February 23, 2026.
- **Baliaka, H.D.** Air quality changes during and after the 2025 Eaton Fire in Los Angeles. *Breakfast Exchange in Environment & Sustainability (BEES)*, Caltech, April 29, 2025.
- **Baliaka, H.D.** New isotopic analysis for Sulfur source attribution in Los Angeles. *RSI Research Seminar Series*, Resnick Sustainability Institute, Caltech, October 30, 2023.

CONFERENCE PRESENTATIONS – MAIN PRESENTER

- **Baliaka, H.D.**, et al. PHOENIX: A dense sensor network for outdoor PM monitoring in Altadena, CA after the 2025 Eaton Fire. *Air Sensors International Conference (ASIC)*, Los Angeles, CA, 2026. (Oral)
- **Baliaka, H.D.**, et al. Real-Time Trace Element Insights from the 2025 Los Angeles Urban Eaton Firestorm. *American Chemical Society (ACS) Spring Meeting*, Atlanta, GA, 2026. (Oral)
- **Baliaka, H.D.**, et al. PHOENIX: A dense sensor network for outdoor PM monitoring in Altadena, CA after the 2025 Eaton Fire. *American Geophysical Union (AGU) Fall Meeting*, New Orleans, LA, 2025. (Oral)
- **Baliaka, H.D.**, et al. Real-Time Trace Element Insights from the 2025 Los Angeles Urban Eaton Firestorm. *American Association for Aerosol Research (AAAR) Annual Conference*, Buffalo, NY, 2025. (Oral)
- **Baliaka, H.D.**, et al. Real-Time Trace Element Insights from the 2025 Los Angeles Urban Eaton Firestorm.

1st Annual LA Fires Research Conference, University of California, Los Angeles, CA, 2025. (Poster)

- **Baliaka, H.D.**, et al. PHOENIX: A dense sensor network for outdoor PM monitoring in Altadena, CA after the 2025 Eaton Fire. *1st Annual LA Fires Research Conference*, University of California, Los Angeles, CA, 2025. (Poster)
- **Baliaka, H.D.**, et al. Yearlong variability and source apportionment of $PM_{2.5}$ at the Los Angeles ASCENT site. *American Geophysical Union (AGU) Fall Meeting*, Washington, DC, 2024. (Poster)
- **Baliaka, H.D.**, et al. Impact of ambient particulate metals in Los Angeles and their sources. *American Association for Aerosol Research (AAAR) Annual Conference*, Albuquerque, NM, 2024. (Oral)
- **Baliaka, H.D.**, et al. Characterizing Los Angeles aerosol through long-term high-resolution measurements. *American Association for Aerosol Research (AAAR) Annual Conference*, Portland, OR, 2023. (Poster)
- **Baliaka, H.D.**, et al. Secondary organic aerosol formation from the oxidation of volatile chemical products. *International Aerosol Conference (IAC)*, Athens, Greece, 2022. (Oral)
- **Baliaka, H.D.**, et al. Source apportionment of brown carbon at a south-eastern European site. *IGASP*, University of California, Irvine, CA, 2022. (Poster)