

GRACIE WONG

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EDUCATION

PhD	Earth System Science, University of California, Irvine (GPA: 4/4)	Aug. 2023
MS	Earth System Science, University of California, Irvine (GPA: 4/4)	Dec. 2021
BS	Earth System Science, University of California, Irvine (GPA: 3.9/4) Campuswide Honors Collegium, Magna Cum Laude, Phi Beta Kappa	Dec. 2018

PROFESSIONAL EXPERIENCE

Air Pollution Specialist April 2023 – Present

California Air Resources Board, Riverside

- Implement strategies to control VOC emissions in consumer products for ozone control in California.
- Update the VOC emission inventory using surveys and market data in Snowflake using SQL.
- Conduct technical and policy analysis to determine feasibility, costs and impacts of regulations.

Research Scientist Sept 2019 – Aug. 2023

Advisor: Dr. Saewung Kim, UC Irvine

- Develop top-down methodology to quantify industrial emissions using airborne datasets.
- Identify emission trends to track progress on goals and validate national inventories.
- Operate CIMS and PTR-MS instrumentation for a 3-year airborne field campaign.
- Process large datasets from airborne campaigns using IGOR Pro, MATLAB, and python.

Junior Specialist Jan. 2019 – Sept. 2019

Advisor: Dr. Saewung Kim, UC Irvine

- Engineered a whole air sampling system for VOC observations in airborne campaigns.
- Operated a CIMS aboard a research aircraft to measure SO₂ and trace gases in S. Korea.
- Corresponded with collaborators in an international field campaign.

Undergraduate Researcher Jan. 2017 – Dec. 2018

Advisor: Dr. Saewung Kim and Alex Guenther, UC Irvine

- Devised an ideal method for offline gas cartridge sampling and analysis of VOCs.
- Evaluated the efficacy of VOC sampling using multi-compound calibration standards.
- Characterized VOC species using mass spectrometry and vacuum UV spectroscopy.
- Assessed biogenic VOC distribution in the Arctic and Antarctic from cruise measurements.

Global Food Initiative Fellow Sept. 2016 – Dec. 2018

University of California, Office of the President, UC Irvine

- Collaborated with partners to develop engaging programs for food waste reduction.
- Secured grants totaling over \$25,000 for campus-wide sustainability projects.
- Contributions recognized as one of four innovations resulting in UCI's title of #1 "Coolest" School from Sierra and a Platinum sustainability rating in AASHE STARS.

AWARDS

Rose Hills Foundation Science & Engineering Fellowship	2022
Dan and Jean Aldrich Fellowship	2021

NSF Graduate Research Fellowship Program Honorable Mention	2020/2019
Provost Ph.D. Fellowship	2019
UCI Graduate Dean's Recruitment Fellowship	2019
UCI Minority Serving Institution Enhancement Award	2019
UCI Lauds & Laurels Outstanding Undergraduate Student	2019
Chancellor's Award of Distinction	2019
Reward Opportunity Advancing Distinguished Students Scholarship	2018

PUBLICATIONS

Wong, G., Wang, H., Park, M., Park, J., Ahn, J.Y., Sung, M., Choi, J., Park, T., Ban, J., Kang, S., Lee, T., Kim, J., Seo, B.K., Yu, J.H., Kim, J., Woo, J.H., and Kim, S.: Optimizing an airborne mass-balance methodology for accurate emission rate quantification of industrial facilities: A case study of industrial facilities in South Korea, *Sci. Total Environ.*, 169204, 0048-9697, <https://doi.org/10.1016/j.scitotenv.2023.169204>, 2023.

Sarkar, C., **Wong, G.**, Mielnik, A., Nagalingam, S., Gross, N. J., Guenther, A. B., Lee, T., Park, T., Ban, J., Kang, S., Park, J.-S., Ahn, J., Kim, D., Kim, H., Choi, J., Seo, B.-K., Kim, J.-H., Kim, J.-H., Park, S. B., and Kim, S.: Unexplored volatile organic compound emitted from petrochemical facilities: implications for ozone production and atmospheric chemistry, *Atmos. Chem. Phys.*, 21, 11505–11518, <https://doi.org/10.5194/acp-21-11505-2021>, 2021.

GRANTS

Pepsi Co. Zero Impact Fund Mar. 2019
Awarded \$10,000 to develop zotZero, a waste sorting app, to improve waste sorting accuracy at UCI

#MyLastTrash Grant Nov. 2017
Awarded \$1,000 to host zero-waste cooking programs in student residences for UCI zero waste goal

The Green Initiative Fund May 2017
Awarded \$5,000 to print and distribute 6000 copies of a personally-designed sustainability cookbook to undergraduate students

Pepsi Co. Zero Impact Fund Dec. 2016
Awarded \$10,000 to develop interactive digital waste bins to increase waste separation accuracy

PRESENTATIONS

Poster Presentation, “Evaluating the uncertainties of a top-down mass balance emissions estimation method using aircraft measurements of industrial facilities in South Korea,” American Geophysical Union Fall Meeting 2021, December 17, 2021.

Oral Presentation, “Characterizing sulfur dioxide emissions from point sources in South Korea via aircraft measurements,” American Geophysical Union Fall Meeting 2019, December 12, 2019.

Oral Presentation, “Student Institute for Sustainability Leadership: Cultivating a culture of sustainability,” California Higher Education Sustainability Conference, June 11, 2018.

Poster Presentation, “Food waste reduction through education and social behavior change,” California Higher Education Sustainability Conference, July 10, 2018.

Oral Presentation, “Characterization of dimethyl sulfide and methyl halides using mass spectrometry and vacuum UV spectroscopy,” Undergraduate Research Opportunities Program Symposium, June 5, 2018.

Poster Presentation, “Food waste at UCI Housing and Dining,” California Higher Education Sustainability Conference, June 27, 2017.

COMMUNITY OUTREACH AND INVOLVEMENT

The Diverse Education Community and Doctoral Experience (DECADE) Sept. 2021 – June 2023

DECADE Representative, Irvine

Create an inclusive climate to increase participation, retention and success of women and underrepresented minorities in graduate programs through events and advocating for students

zotCAMS: Student Chapter of American Meteorological Society at UC Irvine Sept. 2019 – Sept. 2021

Vice President, Irvine

Expand the image of atmospheric and climate science and encourage participation from underrepresented minorities in STEM fields

Earth System Science Club June 2017 – June 2019

Vice President, Irvine

Coordinate with faculty and board members to host alumni and industry networking events

Catalina Island Sustainability Experience Alternative Spring Break Jan. 2018 – April 2018

Trip Leader, Irvine

Led a week-long trip to Catalina Island to educate peers on sustainability practices

Student Institute for Sustainability Leadership June 2016 – Sept. 2017

Mentor/Facilitator, Irvine

Facilitated 3-day long retreats to introduce incoming students to sustainability leadership and mentored students throughout the academic year

Student-Led Congress Jan. 2017 – May 2017

Facilitator, Irvine

Coordinated a weekend retreat to inspire students to start their own sustainability projects

Costa Rica Program Dec. 2015 – June 2016

Student Ambassador, Irvine

Traveled to Costa Rica to research food waste and farming practices and administered outreach programs to engage the UCI community in sustainability

TEACHING

Environmental Sustainability Honors Winter 2023

Teaching Assistant, UCI Campuswide Honors Program

Catastrophes Spring 2022

Teaching Assistant, UCI Department of Earth System Science

Earth System Biology Winter 2021

Teaching Assistant, UCI Department of Earth System Science

Air Pollution: From Urban Smog to Global Change

Spring, Fall 2020

Teaching Assistant, UCI Department of Earth System Science

SKILLS

Computer Skills: Igor Pro, MATLAB, ArcGIS, Python, LabVIEW, Ionicon software, SQL, Microsoft Office

Instrumentation: chemical ionization mass spectrometry (CIMS), PTR-ToF-MS, Particle into Liquid Sampler System (PILS), rotating drum impactor (RDI), gas chromatography, vacuum UV, flame ionization detector, aircraft sampling, gas cartridge sampling, whole-air sampling, plumbing of air quality measurement instruments

Fluent in English and Mandarin Chinese