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ADAM M.-A. SIMPSON
(He/Him)

University of Southern California
Viterbi School of Engineering
Sonny Astani Dept of Civil & Environmental Engineering
Kaprielian Hall – 268C

EDUCATION

Stanford University, Stanford CA 2022
PhD Civil & Environmental Engineering
Stanford University, Stanford CA 2018
MS Civil & Environmental Engineering
Carnegie Mellon University, Pittsburgh PA 2016
BS Chemical Engineering

REASEARCH EXPERIENCE

Stanford University, Department of Civil & Environmental Engineering, Stanford CA
Faculty Advisor: Professor William A. Mitch
IDEAL Provostial Fellow for Studies in Race and Ethnicity (2022–2023)

Stanford University, Department of Civil & Environmental Engineering, Stanford CA
Principal Investigator: Professor William Mitch
Research Assistant (2016 – 2022)
Dissertation title: "Predicting Initial Transformation Products of Food-Based Bio-Polymers and –Molecules During Food Disinfection"

United Stated Department of Agriculture, Agricultural Research Service, Parlier CA
Visiting Research Advisor: Dr. Spencer Walse
Visiting Researcher (2021– 2022)

Carnegie Mellon University, Department of Chemistry, Pittsburgh PA
Principal Investigator: Professor Danith Ly
Research Assistant (2014 – 2016)

Kiel University, Otto Diels Institute of Organic Chemistry, Schleswig-Holstein, Germany
DAAD Rise Summer Research Internship
Principal Investigator: Professor Frank Sönnichsen
Research Assistant (Summer 2015)

SCHOLARSHIPS & FELLOWSHIPS

1. Stanford University – IDEAL Provostial Fellowship for Studies in Race and Ethnicity, (2022 – 2023)
2. Stanford University – DARE (Diversifying Academia, Recruiting Excellence) Fellowship, (2020 – 2022)
   Mentored by former Stanford University President Dr. John Hennessy

3. NSF-GRFP, (2018 – 2020)
4. Stanford Graduate Fellowship in Science & Engineering (SGF), (2016 –2020)
5. DAAD Rise Summer Research Internship, Christiana Albertina University of Kiel, (Summer 2015)
6. Howard Hughes Medical Institute (HHMI) Summer Undergraduate Research Program, Carnegie Mellon University, (Summer 2014)

ACADEMIC AWARDS

1. Stanford University, School of Engineering – JEDI Graduation Award for service to Diversity Equity and Inclusion in the Civil and Environmental Engineering Department (June 2022)
2. Stanford University, School of Engineering – Justice Equity Diversity and Inclusion (JEDI) Appreciation Award for service to Diversity Equity and Inclusion in the Civil and Environmental Engineering Department, (June 2021)
3. Geoffrey D. Parfitt award for Excellence in Research in the field of Colloids, Polymers and Surfaces, Carnegie Mellon University, (May 2016)
4. The McCabe Society Award for Unparalleled Dedication to Carnegie Mellon University Community, (May 2016)
5. Carnegie Mellon Chemical Engineering University Honors, (May 2016)
6. Molecular Design Grand Challenge Winners, (Spring 2014)
7. Carnegie Institute of Technology Dean's List, (2014 – 2015)
8. Carnegie Institute of Technology Dean's List, (Fall Semester 2013)
9. Carnegie Institute of Technology Dean's List, (Fall Semester 2012)

PUBLICATIONS

1. Suh, M.-J., **Simpson, A. M.-A.**, & Mitch, W. A. (2023). Purified Chlorine Dioxide as an Alternative to Chlorine Disinfection to Minimize Chlorate Formation During Postharvest Produce Washing. *Environ. Sci. Technol.*, *57*(32), 12063–12071.
2. **Simpson, A. M.-A.**, & Mitch, W. A. (2022). Chlorine and ozone disinfection and disinfection byproducts in postharvest food processing facilities: A review. *Critical Reviews in Environmental Science and Technology*, 1–43.
3. **Simpson, A. M.-A**., Suh, M.-J., Plewa, M.J., & Mitch, W.A. (2021) Formation of Oleic Acid Chlorohydrins in Vegetables During Post-Harvest Chlorine Disinfection. *Environmental Science & Technology*, *5*(2), 1233-1243.
4. Choe, J. K., Hua, L.-C., Komaki, Y., **Simpson, A. M.-A.**, McCurry, D. L., & Mitch, W. A. (2021). Evaluation of Histidine Reactivity and Byproduct Formation during Peptide Chlorination. *Environmental Science & Technology*, *55*(3), 1790–1799.
5. Komaki, Y., **Simpson, A. M.-A.**, (**Co First Author**), Choe, J. K., Pinney, M. M., Herschlag, D., Chuang, Y.-H., & Mitch, W. A. (2019). Serum electrolytes can promote hydroxyl radical-initiated biomolecular damage from inflammation. *Free Radical Biology and Medicine*, *141*, 475–482.
6. Komaki, Y., **Simpson, A. M.-A.**, (**Co First Author**), Choe, J. K., Plewa, M. J., & Mitch, W.

A. (2018). Chlorotyrosines versus Volatile Byproducts from Chlorine Disinfection during Washing of Spinach and Lettuce. *Environmental Science & Technology*, *52*(16), 9361–9369.

7. Choe, J. K., Hua, L.-C., Komaki, Y., **Simpson, A. M.-A.**, McCurry, D. L., & Mitch, W. A. (2021). Evaluation of Histidine Reactivity and Byproduct Formation during Peptide Chlorination. *Environmental Science & Technology*, *55*(3), 1790–1799.

PRESENTATIONS

Talks:

1. Simpson, A. M.-A., Osman, K. K., Morello-Frosch, R., Trotz, M. A. (2023, October). Materialities of Race: Systemic Racism and Ethnic Marginalization Materialized through Environmental Injustice. Presented at the "*2nd IDEAL Provostial Fellows Conference*," [Conference Panel]. Stanford University, Stanford, CA, USA.
2. Simpson, A. M.-A.; Mitch, W.A. (2023, August). Chlorinated byproducts form in chlorine disinfected meats, but high background levels may indicate their existence as a natural inflammatory byproduct. Presented at the "*ACS Fall 2023 Virtual Meeting & Expo: Harnessing the Power of Data*," [Hybrid Session]. San Francisco, CA, USA.
3. Simpson, A. M.-A., (2023, March), What's in Our Food? Presented at the "*Edison Lecture Series*." University of Notre Dame, Notre Dame, IN, USA.
4. Simpson, A. M.-A. (2022, June). Weighted Chemical Exposure to Oleic acid Chlorohydrins and Chlorotyrosines formed inside Assorted Vegetables during Post-harvest Chlorine Washing Outweigh that of Disinfection Byproducts in Water at US EPA Regulatory Limits. Presented at the "*3rd IWA International Conference on Disinfection and DBPs,"* [Hybrid session]. Milan, Italy.
5. Simpson, A. M.-A. **(**2021, November). Predicting Initial Transformation of Food-Based Bio-Polymers and -Molecules During Food Disinfection. Presented at the "*Civil and Environmental Engineering Research Seminar*," University of Southern California, Los Angeles, CA, USA.
6. Simpson, A. M.-A. (2021, September). New Food-Based Disinfection Byproduct of Oleic acid from Chlorine Disinfection during Washing of Spinach and Lettuce. Presented at the "*EMCON: International Conference on Emerging Contaminants 2021"* [Virtual Event].
7. Simpson, A. M.-A. (2021, April). Influencing public opinion through #scicomm: Humanizing academia with a focus on STEM. Presented at the "*ACS Spring 2021, Macromolecular Chemistry: The second century*" [Virtual Event].
8. Simpson, A. M.-A.; Mitch, W.A. (2020, August). Oleic acid chlorohydrin: A new food-disinfection byproduct (F-DBP) isolated in chlorine disinfected lettuce. Presented at the "*ACS Fall 2020 Virtual Meeting & Expo: Moving Chemistry from Bench to Market*" [Virtual Event].
9. Simpson, A. M.-A.; Sönnichsen, F. (2015, August). Observing the Stabilizing Effects of the Trp-Cage (tc10b) Mini-protein on the Amoebapore A. α-Helix (II) Protein Sequence. Presented at the "*2015 RISE Heidelberg Meeting*," Heidelberg University, Heidelberg, Baden-Württemberg, Germany.

Posters:

1. Simpson, A. M.-A., Mitch, W. A., (2023, July). Chlorohydrins and chlorotyrosines form in chlorinated meat but high background levels may indicate their existence as a natural inflammatory byproduct. Poster presented at the *"Water Disinfection, Byproducts and Health Gordon Research Conference,"* Mount Holyoke College, South Hadley, MA, USA.
2. Simpson, A. M.-A. (2019, July). Tracking Chlorinated Biomolecules Relative to the Total Organic Halide. Poster presented at the *"Drinking Water Disinfection Byproduct (DBP) Gordon Research Conference,"* Mount Holyoke College, South Hadley, MA, USA.
3. Simpson, A. M.-A. (2018, July). Chlorotyrosines versus Volatile Byproducts from Chlorine Disinfection During Washing of Spinach and Lettuce. Poster presented at the *"Environmental Sciences Water Gordon Research Conference,"* The Holderness School, Holderness, NH, USA.
4. Simpson, A. M.-A. (2017, July). Juxtaposing Volatile DBP Formation with the Formation of Tyrosine Derivatives during Chlorination of Spinach and Lettuce. Poster presented at the *"Drinking Water Disinfection Byproduct (DBP) Gordon Research Conference,"* Mount Holyoke College, South Hadley, MA, USA.
5. Simpson, A. M.-A. (2017, May). The Kinetics of Lysine and Histidine Oxidation in Surface Waters and Microorganisms engulfed by White Blood Cells. Poster presented at the *"ReNUWIt (Re-Inventing the Nation's Urban Water Infrastructure Annual Meeting,"* Stanford University, Stanford, CA, USA.
6. Simpson, A. M.-A.; Atwood, J.; Long, K.; Harwitz, E. (2015, May). Development of Broad-Spectrum Antibiotics. Poster presented at the *"Meeting of the Minds-Undergraduate Research Symposium,"* Carnegie Mellon University, Pittsburgh, PA, USA.
7. Simpson, A. M.-A. (2014, July). RTD-1M: Modifications to the Backbone by Introducing Hydrophobic Side Chains Derived from Existing Glycolipopetide Antibiotics. Poster presented at the *"Howard Hughes Medical Institute Summer Undergraduate Research Program Symposium,"* Carnegie Mellon University, Pittsburgh, PA, USA.

TEACHING

1. **Guest Lecturer.** University of Southern California, CE 110: Introduction to Environmental Engineering (Fall, 2023).
   Undergraduate level course, 20 students
   Introduce basic concepts in two lectures related to water disinfection and disinfection byproducts, food disinfection and disinfection byproducts, and toxicology.
2. **Lead Teaching Assistant (TA) and Guest Lecturer**. Stanford University, CEE 245E: Equitable Infrastructure Solutions (Winter Quarter, 2023).
   Mixed level course, 20 students
   Present guest lecture on chemical exposures from food
   Create engaging case studies for course projects

Grade course assignments
Assist instructor in administrative tasks

3. **TA.** Stanford University (STS) 1: The Public Life of Science and Technology (Winter Quarter 2021).
   Undergraduate level course, 10 students per section
   Taught two 50-minute sections per week based on course lectures, readings and activities
   Held office hours to tend to students' questions about course objectives
   Graded weekly writing assignments based on course readings that demonstrated students' understanding of the material
   Graded three major writing projects that tackled STS topics such as "Trust and Accountability" in relation to: Climate Change, Healthcare, Medical Technology, and the USA COVID-19 response

SERVICE

Departmental:

1. **PhD Screening Exam Committee:**
   a. Yishi Wang (PI: Dr. Kelly Sanders)
2. **Panel Judge.** University of Southern California, Sonny Astani Department of Civil and Environmental Engineering PhD Awards Celebration, (October 2023), Los Angeles, CA, USA.
3. **Faculty Presenter.** University of Southern California, Discover USC: ViterbiEXPO, (October 2023), University of Southern California, Los Angeles, CA, USA.
4. **Faculty & Student Diversity Equity and Inclusion Committee.** Stanford University, Civil & Environmental Engineering Department (2020 – 2022), Stanford, CA, USA.
5. **Dean's Graduate Student Advisory Council**. Stanford University, Civil & Environmental Engineering Department (2020 – 2022), Stanford, CA, USA.
6. **Graduate Leadership Committee**. Civil & Environmental Engineering Department (2017 – 2020), Stanford, CA, USA.
7. **ReNUWIt Student Leadership Council Treasurer & Graduate Application Committee Lead**. Stanford University, Civil & Environmental Engineering Department (2018 – 2019), Stanford, CA, USA.

Conference Session Organizer:

1. **2023 2nd IDEAL Provostial Fellows Conference**. "Materialities of Race: Systemic Racism and Ethnic Marginalization Materialized through Environmental Injustice."

Conference Seminar Co-Chair:

1. **2022 Environmental Sciences: Water Gordon Research Seminar**. "Water Quality, Technology and Distribution from Glacial Sources to Contaminated Runoff."

OUTREACH

Original Works:

1. **Author of "Adam's General Graduate School Application Guide."** See website resources page.
2. **Science and Higher Education Communicator on Adam M.-A. Simpson – Personal YouTube Channel**

Workshop Activities:

1. **Graduate School Personal Statement Workshop Presenter**. ReNUWIt Summer Research Experience for Undergraduate (REU) Students, Stanford University, Civil & Environmental Engineering Department (Summer 2019 and 2020), Stanford, CA, USA.
2. **Graduate School Application and Funding Workshop Presenter**. ReNUWIt Summer Research Experience for Undergraduate (REU) Students, Stanford University, Civil & Environmental Engineering Department (Summers 2019 and 2020), Stanford, CA, USA.
3. **NSF GRFP Application Workshop Presenter**. Stanford University, School of Engineering Summer Exposure to Research and Graduate Education Program (Summers 2018 and 2019), Stanford, CA, USA.

Mentorship:

1. **Graduate Pathways to STEM Pair Advisor.** University of California Berkeley (February 2020), Berkeley, CA, USA.
2. **Graduate Pathways to STEM Pair Advisor.** Stanford University (November 2019), Stanford, CA, USA.
3. **Let's Have an Awesome Time Doing Science (LHAATDS) Organizer**. Stanford University (May 2019). Stanford, CA, USA.

Community Building:

1. **Stanford Black Graduate Student Association Treasurer and Co-Academic Chair**. Stanford University, (2016 – 2018), Stanford, CA, USA.

JOURNAL REVIEWER

1. Environmental Science and Technology
2. Journal of Hazardous Materials
3. Industrial and Engineering Chemistry Research

GRANT REVIEWER

1. National Science Foundation (2022)

MEMBERSHIPS

1. American Chemical Society (ACS)

2. Association of Environmental Engineering and Science Professors (AEESP)