

My (Crystal) Hua, Ph.D.
Toxicologist

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Education and Degrees Earned

- Ph.D. Environmental Toxicology, University of California, Riverside, 2023
- Bachelor of Science degree in Biology, University of California, Riverside, 2014
- Bachelor of Arts degree in English, University of California, Riverside, 2014

Certifications

- Advanced Level 1 & 2 College Reading/Learning Association Certification (2022)
- UC Riverside University Teaching Certificate Program (January-June 2022)
- UC Riverside Science to Policy (S2P) Certificate (June 2020)

Membership and Service to Professional Societies

- Society of Toxicology (member)
- FDA/CTP-funded Tobacco Regulatory Science (TRS) Community (member)
- American Thoracic Society (member)
- American Association for the Advancement of Science (member)

State & University Grants/Scholarships Awarded

2023: Dissertation Year Program Fellowship. Award: \$11,782.57. University of California, Riverside.

2022: Earle C. Anthony Travel Award. Award: \$2,000. University of California, Riverside.

2022: Leonard Family Foundation Life Sciences Scholar. Award: \$9,500. University of California, Riverside.

2021: Tobacco-Related Disease Research Program Pre-doctoral Fellowship, Administrative Supplement: \$20,000. Tobacco-Related Disease Research Program of California.

2019: Graduate Fellowship Fees Award: \$17,378.91. University of California, Riverside.

2019: Gordon E. Hein Scholarship. Award: \$12,000. University of California, Riverside.

2018: Tobacco-Related Disease Research Program Pre-doctoral Fellowship. Award: \$118,350. Tobacco-Related Disease Research Program of California.

2018: Stem Cell Travel Award. Award: \$1,000. University of California, Riverside Stem Cell Core.

- 2018: Gary Allen Ross Endowed Book Memorial Scholarship. Award: \$600. University of California, Riverside.
- 2016: Propes Fellowship. Award: \$320. University of California, Riverside.
- 2015: Cornelius Hopper Diversity Supplement. Award: \$15,621.00. Tobacco-Related Disease Research Program of California.
- 2013: Chancellor's Research Fellowship. Award: \$4,500. University of California, Riverside.
- 2013: Medical Scholars Program Research Stipend: \$1,500. University of California, Riverside.
- 2011: Roy and Joan Lake Endowment. Award: \$4,000. University of California, Riverside.

Experience Summary (Professional Career)

1. Paustenbach and Associates

**Toxicologist
Glendale, California Office
October 2023 – Present**

- Consultant in toxicology, occupational health, industrial hygiene, risk assessment, state-of-the-art, and safety.
- Expert in electronic cigarette (e-cigarette) toxicology
- Currently focused on per- and polyfluorinated substances (PFAS), asbestos, new approach methods (NAMs), industrial chemicals, consumer products, pharmaceuticals, pesticides, cosmetics, household products, airborne particles, e-cigarettes (vaping), radionuclides, medical devices.
- Involved in litigation work, interpreting toxicological studies, conducting exposure assessments, assessing mathematical models for dose-response curves, and characterizing risks posed by chemicals in the environment.

2. Graduate Teaching Assistant

**University of California, Riverside; Riverside, CA
October 2022 - December 2022**

- During doctoral studies, taught 80 students in two discussion sections in undergraduate Introductory Environmental Sciences course.
- Graded, evaluated, and provided weekly feedback on student powerpoint debate presentations.
- Assisted major professor to proctor exams and helped students review course materials.

3. Graduate Writing Consultant (part-time, remote)

**University of California, Riverside; Riverside, CA
October 2021 - December 2022**

- Consulted graduate/professional (masters, medical, and PhD level) students and post-doctoral researchers on various documents (personal statements, scholarships, grants/fellowships, coursework, PowerPoints, manuscripts, dissertation chapters, job application materials).

- Developed workshop content for GradSuccess (scientific writing and communication). Experience with blog content on science communication.
- Involved in summer 2022 MED Support services to assist medical students applying for scholarships, summer research, and residency programs.

Key Projects (Partial List)

1. **PFAS science communication.** We were engaged to evaluate the broad literature and various topics pertaining to PFAS health effects and proposed drinking water regulations. (2024).
2. **PFAS relative source contribution.** We were engaged to research literature pertaining to PFAS relative source contribution and summarize the findings. (2024).
3. **PFAS background and toxicology.** We were engaged to discuss the general toxicology related to PFAS with clients. (2024).
4. **Dioxins and PFAS.** We created a PowerPoint discussing the toxicology of dioxins and PFAS and their similarities (historical and physiochemical properties). (2024).
5. **Risk assessment for alleged hydrazine exposure.** We were retained to determine whether individuals who used products that were allegedly contaminated with hydrazine were at risk of developing liver disease or acute effects. (2024).
6. **Evaluation of general PFAS toxicology.** We were retained by a major client to provide technical expertise concerning the overall toxicology of various PFAS chemicals. (2024).
7. **Potential occupational exposure and alleged mesothelioma.** We were retained by a major company to evaluate the occupational exposure of a worker alleging mesothelioma caused by work exposure. (2023).
8. **Para-occupational asbestos exposure and alleged spontaneous mesothelioma.** Assembled and examined the literature on background and factors related to spontaneous mesothelioma. (2023).

PUBLICATIONS

Peer-Reviewed Publications

1. **Hua, M.,** Luo, W., Khachatoorian, C., Leung, S., Martinez, T., McWhirter, K., Talbot P. 2023 Exposure, Retention, Exhalation, Symptoms, and Environmental Accumulation of Chemicals During JUUL Vaping. *Chemical Research in Toxicology*, 36(3), pp.492-507. [doi: 10.1021/acs.chemrestox.2c00390](https://doi.org/10.1021/acs.chemrestox.2c00390).

2. **Hua, M.**, Shouq, S., Hristidis, V., Talbot, P. 2019. Health Effects Associated with Online Forums: Automated Mining of Forums. *Journal of Medical Internet Research*, 22(1), e15684 [doi: 10.2196/15684](https://doi.org/10.2196/15684)
3. Sakamaki-Ching, S., Williams, M., **Hua, M.**, Bates, S.M., Robinson, A.N. Lyons, T.W., Goniewicz, M., Talbot, P. 2019. Correlation Between Biomarkers of Exposure, Effect, and Potential Harm in the Urine of Electronic Cigarette Users. *Open Respiratory Research*, 7, e000452. [doi: 10.1136/bmjresp-2019-000452](https://doi.org/10.1136/bmjresp-2019-000452)
4. **Hua, M.**, Omaiye, E.E., Luo, W. Pankow, J.F., Talbot, P. 2019. Identification of Cytotoxic Flavor Chemicals in Top-Selling Electronic Cigarette Refill Fluids. *Scientific Reports*, 9, 2782. <https://doi.org/10.1038/s41598-019-38978-w>
5. **Hua, M.** and Talbot, P. 2016. Potential health effects of electronic cigarettes: A systematic review. *Preventive Medicine Reports*, 4, pp.169-178. [doi: 10.1016/j.pmedr.2016.06.002](https://doi.org/10.1016/j.pmedr.2016.06.002)
6. Behar, R., **Hua, M.***, and Talbot, P. 2015. Puffing Topography and Nicotine Intake of Electronic Cigarette Users. *PLoS ONE*, 10(2), e0117222. [doi: 10.1371/journal.pone.0117222](https://doi.org/10.1371/journal.pone.0117222). * = Co-First Author.
7. **Hua, M.**, Alfi, M., and Talbot, P. 2013. Health-related Effects Reported by Electronic Cigarette Users from Online Forums. *Journal of Medical Internet Research*, 15(4), e59. [doi: 10.2196/jmir.2324](https://doi.org/10.2196/jmir.2324).
8. **Hua, M.**, Yip, H., and Talbot, P. 2011. Mining data on usage of electronic nicotine delivery systems (ENDS) from YouTube videos. *Tobacco Control*, 10, pp.1136-1140. [doi: 10.1136/tobaccocontrol-2011-050226](https://doi.org/10.1136/tobaccocontrol-2011-050226).

Presentations at Scientific Conferences

1. 2023. (October). **M. Hua, T. Martinez, W. Luo, K. McWhirter, N. Hendricks, M. Wong,** and P. Talbot. From Infodemiology to Proteomics: Unraveling the Toxicological Profile of Hydroxyacetone and Its Association with Adverse Symptoms Reported by Electronic Cigarette Users. National Institutes of Health Tobacco Regulatory Science Meeting. October 16-18, 2023. Bethesda, Maryland. Poster presentation.
2. 2022. (October). **M. Hua, W. Luo, C. Khachatoorian, S. Leung, K. McWhirter, J.F. Pankow,** and P. Talbot. Human Exposure and Margin of Exposure for Solvents, Nicotine, and Flavor Chemicals During JUUL Vaping. Southern California Chapter Society of Toxicology. October 6, 2022. San Diego, California. Poster presentation.
3. 2022. (March). **M. Hua, W. Luo, C. Khachatoorian, S. Leung, K. McWhirter, J.F. Pankow,** and P. Talbot. Human Exposure and Margin of Exposure for Solvents, Nicotine, and Flavor Chemicals During JUUL Vaping. Society of Toxicology Meeting. March 27-31, 2022. San Diego, California. Poster presentation.

4. 2019. (October). **M. Hua**, S. Shouq, V. Hristidis, and P. Talbot. Automated Mining of Vaping-Associated Health Effects Reported in Online Forums. National Institutes of Health Tobacco Regulatory Science Meeting. October 21-23, 2019. Bethesda, Maryland. Poster presentation.
5. 2018. (May). **M. Hua**, E.E. Omaiye, W. Luo, K. McWhirter, J.F. Pankow, and P. Talbot. Identification of Cytotoxic Flavor Chemicals in Top-Selling Electronic Cigarette Refill Fluids. National American Thoracic Society Meeting. May 18-23, 2018. San Diego, California. Oral and Poster presentation.
6. 2017. (March). **M. Hua**, W. Luo, I. Cordova, E.E. Omaiye, J.F. Pankow, and P. Talbot. Electronic Cigarettes: Users' Flavor Preferences from Online Survey Participants, Online Websites, and Local Vendor Shops. Society of Toxicology Meeting. March 12-16, 2017. Baltimore, Maryland. Poster presentation.
7. 2016. (March). **M. Hua**, J. Whitehead, and P. Talbot. Electronic Cigarettes: Users' Flavor Preferences and Associated Health Effects. Society of Toxicology Meeting. March 13-17, 2016. New Orleans, Louisiana. Poster presentation.
8. 2015. (October). **M. Hua**, R.Z. Behar, and P. Talbot. Conventional and Electronic Cigarette Topography Differs. Tobacco-Related Disease Research Program Conference. October 27-29, 2015. Sacramento, California. Poster presentation.
9. 2014. (March). **M. Hua**, R.Z. Behar, and P. Talbot. Conventional and Electronic Cigarette Topography Differs. Society of Toxicology Meeting. March 23-27, 2014. Phoenix, Arizona. Poster presentation.
10. 2013. (March). **M. Hua**, M. Alfi, and P. Talbot. Online Assessment of Health Effects Reported by Electronic Cigarette Users. Society of Toxicology Meeting. Austin, Texas. March 10-14, 2013. Poster presentation.
11. 2013. (February). **M. Hua**, M. Alfi, and P. Talbot. Adverse health effects reported by electronic cigarette users: are these really a harm reduction product? University of California Global Health Day Conference. February 2013. Riverside, California. Poster presentation.
12. 2011. (April). **M. Hua**, S. Lin, P. Talbot. Measuring the effects of harm reduction cigarettes on prenatal development using human embryonic stem cells (hESC) as an in-vitro model. 36th Annual West Coast Biological Sciences Undergraduate Research Conference. April 16, 2011. Tacoma, Washington. Poster presentation.
13. 2010. (October). **M. Hua** and P. Talbot. Analyzing Online Smoking Styles from YouTube Videos. 2nd Annual Tobacco-Related Disease Research Program Symposium, October 2010. Riverside, California. Poster presentation.

Published Abstracts

1. 2022. (March). **M. Hua**, W. Luo, C. Khachatoorian, S. Leung, K. McWhirter, J.F. Pankow, and P. Talbot. Human Exposure and Margin of Exposure for Solvents, Nicotine, and Flavor Chemicals During JUUL Vaping. Society of Toxicology Meeting. Abstract #3942. March 27-31, 2022. San Diego, California. Poster presentation.
2. 2018. (May). **M. Hua**, E.E. Omaiye, W. Luo, K. McWhirter, J.F. Pankow, and P. Talbot. Identification of Cytotoxic Flavor Chemicals in Top-Selling Electronic Cigarette Refill Fluids. National American Thoracic Society Meeting. Abstract #D106. May 18-23, 2018. San Diego, California. Oral and Poster presentation.
3. 2017. (March). **M. Hua**, W. Luo, I. Cordova, E.E. Omaiye, J.F. Pankow, and P. Talbot. Electronic Cigarettes: Users' Flavor Preferences from Online Survey Participants, Online Websites, and Local Vendor Shops. Society of Toxicology Meeting. Abstract #1874. March 12-16, 2017. Baltimore, Maryland. Poster presentation.
4. 2014. (March). **M. Hua**, R.Z. Behar, and P. Talbot. Conventional and Electronic Cigarette Topography Differs. Society of Toxicology Meeting. Abstract #645. March 23-27, 2014. Phoenix, Arizona. Poster presentation.
5. 2013. (March). **M. Hua**, M. Alfi, and P. Talbot. Online Assessment of Health Effects Reported by Electronic Cigarette Users. Society of Toxicology Meeting. Abstract #141. Austin, Texas. March 10-14, 2013. Poster presentation.

Invited Presentations

1. 2022. (October). **M. Hua**. How to write a scientific abstract. GradQuant. October 18, 2022. UC Riverside, California. Invited workshop presentation.
2. 2021. (November). **M. Hua**. How to be successful at undergraduate research. Natural, Agricultural, and Science College (NASC) Freshman Seminar Series. November 2021. UC Riverside, California. Invited workshop presentation.
3. 2021. (February). **M. Hua**. How to write a scientific abstract. CIRM Bridges Seminar. February 4, 2021. UC Riverside, California. Invited workshop presentation.
4. 2018. (May). **M. Hua**, S. Sadah, V. Hristidis, and P. Talbot. Mining health-related effects associated with electronic cigarettes from online forums. SoCal Social Symposium. May 11, 2018. UC Irvine, California. Invited poster presentation.
5. 2015. (July). **M. Hua**. Electronic Cigarettes: Usage, Topography, and Health Effect Studies." Portland State University. July 2015. Portland, Oregon. Podium presentation.

6. 2012. (May). **M. Hua**. How to be successful at undergraduate research. Natural, Agricultural, and Science College (NASC) Freshman Seminar Series. 2912. UC Riverside, California. Invited workshop presentation.

Professional Honors/Awards

- 2022: 1st Place Poster Award at Southern California Chapter Society of Toxicology (SOT) Annual Meeting in San Diego, California
- 2021: ComSciCon Participant (Atlanta, Georgia) (remote)
- 2021: Audience Participation Award for Annual Environmental Toxicology Graduate Program Symposium
- 2020: Honorable Mention for the Annual UCR Environmental Toxicology Program Symposium
- 2019, 2013: Orion Fund Grant
- 2016: Society of Toxicology Graduate Travel Award
- 2015: Tobacco-Related Disease Research Program Cornelius Hopper Diversity Award
- 2014, 2012: Chancellor's Research Fellowship
- 2014: Biology Award for Excellence - UCR Undergraduate Honors Convocation
- 2014: Rosemary Schrarer Award - UCR Undergraduate Honors Convocation
- 2012, 2011: UC Riverside Winter Quarter Undergraduate Research Grant
- 2013: Medical Scholars Summer Research Program Internship
- 2013: Society of Toxicology Regulatory Safety Evaluation Specialty Section Travel Award
- 2011: UC Riverside (UCR) Student Affairs Award for "Leadership and Service"
- 2011: Howard Hughes Medical Institute Mini Research Grant
- 2010: Clinical Care Extender Internship Program & Certificate of Completion
- 2008: California Arts Scholar
- 2008: Advanced Placement (AP) Scholar

Service to Scientific Journals

- Chemical Research in Toxicology (ad-hoc reviewer)
- Journal of Environmental Health and Exposome (Editorial Board)
- Nicotine and Tobacco Research (ad-hoc reviewer)
- Western Journal of Nursing (ad-hoc reviewer)
- International Journal of Environmental Research and Public Health (ad-hoc reviewer)
- Journal of Medical Internet Research (ad-hoc reviewer)

Languages

Fluent in English and Vietnamese.