Sumira Phatak, PhD

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Professional Summary

Passionate toxicologist and SciComm advocate with broad experience that includes industry (regulatory safety role), *in vivo* research (diet, cancer, air pollution), *in vitro* research (mammalian stem and microbial culture), molecular techniques (obesogens, nucleic acids, immunostaining), large data (curation, analysis, visualization), field research (keystone species, aquatic invasives), pedagogy (modern physics, animal science), mentoring, leadership, and volunteerism.

Education

University of New Mexico, Albuquerque, New Mexico
Postdoctorate in pharmaceutical sciences

University of California, Irvine, California
Postdoctorate in cell & developmental biology

Utah State University, Logan, Utah
Doctoral Degree in Toxicology

Northeastern Illinois University, Chicago, Illinois
Baccalaureate Degree in Biology and Interdisciplinary Studies

Selected professional experience

NIH IRACDA Fellow University of New Mexico, September 2023 to present
- Accepted into the Academic Science Education and Research Training (ASERT) K12 Institutional Research Career and Development Award (IRACDA) program.

Nutritional Toxicologist Nutrilite, Access Business Group, April 2022 to Sept 2023
- Performed safety risk assessments, prepared product safety dossiers for nutritional products sold globally in 108 countries, and supported PR with food safety inquiries.

Assistant Research Specialist University of California, February 2021 to March 2022
- Validated suspected endocrine disruptors as obesogens via the adipogenesis assay in mammalian mesenchymal stem cell culture.

Graduate Research Assistant Utah State University, April 2014 to January 2021
- Preclinical experience completing general rodent care, selective breeding, experimental treatments via multiple routes of administration, qualitative symptom assessment, MRI, oGTT, cardiac puncture, and micro-dissection.

Predoctoral Research Fellow USDA AFRI NIFA, March 2018 to April 2020
- Developed and optimized multiple protocols to complete proposed work.

Laboratory Manager // Technician II Utah State University, May 2016 to April 2018
- Trained, managed, and/or mentored dozens of students from six laboratories across USU campus; reduced quarterly spending by over 50% within six months.

Pet Food Nutritionist Blue Buffalo Company, March 2008 to April 2014
- Received awards for increased regional level sales and exceptional performance.

Wildlife Technician Utah Department of Natural Resources, May to September 2013
- Received 2 Excellence Awards for outstanding job performance.

Field Research Assistant University of Colorado, May to August 2010
- Coordinated logistics among multiple agencies and members of the community.

Selected project management & funded proposal preparation

University of New Mexico Environmental Health and Toxicology Pilot

Single cell transcriptome analysis to investigate effects of dietary plastic intake on mesenteric adipose tissue. Primary Investigator, $50,000; funded Sept 2024

National Institute of Health 424 R&R and PHS-398

Interactions between prenatal obesogen exposure and Western dietary pattern lead to a transgenerational thrifty phenotype: functional and epigenomic analysis of effects in fat and liver. Co-investigator, $628,537; funded Oct 2019

USDA National Institute of Food and Agriculture (NIFA) Agriculture and Food Research Initiative Predoctoral Fellowship Grant 2018-67011-28043

Basal diet, green tea extract and gut microbiome interactions in a multi-generational murine study. Project Director, $94,647; funded March 2018

Utah State U. Undergraduate Research and Creative Opportunities Grant

Fermentation of oligosaccharides in agave, pomegranate peel, green banana, black raspberries, and baobab fruit by NCFM and HN019 lactic-acid producing bacteria. Graduate Student Mentor, $2,992; funded April 2018

Utah State U. Undergraduate Research and Creative Opportunities Grant

Impact of the Total Western Diet and supplementation on TNFα, a biomarker of inflammation. Graduate Student Mentor, $2,993; funded December 2016

Selected invited toxicology & nutrition peer review

- Provided 5 manuscript reviews for academic journals.
- Served on 6 award selection committees.
- Judged 9 platform and 13 poster competitions.

Selected teaching experience

Instructor on Record University of New Mexico, March to May 2025

Graduate Teaching Assistant Utah State University, August 2014 to December 2015

Undergraduate Teaching Assistant Northeastern Illinois University, Jan to Dec 2010

Selected mentoring experience

- Invited to serve as a mentor at 24 mentoring events.
- Mentored 4 high school, 28 undergraduates, 3 veterinary medicine candidates, 9 graduate students, and 2 postdoctoral scholars.

Selected societal leadership experience

Society of Toxicology (SOT #13485)

- Mountain West Regional Chapter Representative, 2024 to 2026
- Southern California Regional Chapter Representative, 2021 to 2022
- Education and Career Development Committee, 2021 to 2022
- GSLC Professional Development Subcommittee Chair, 2020-2021
- Mountain West Regional Chapter Representative, 2017 to 2020
- Food Safety Specialty Section Representative, 2018 to 2022

American Society for Nutrition (ASN #54061)

- Student Interest Group Chair series, 2020 to 2023
- Finance and Audit Committee, 2020 to 2021
- Social Media Chair, 2019 to 2020

Environmental Mutagenesis and Genomics Society (EMGS #3102)

- Epigenomics Special Interest Group Cochair, 2017 to 2021

Utah State University

- Center for Integrated Bioscience Seminar Committee, 2018 to 2020
- ADVS Graduate Student Committee Chair and Founder, 2017 to 2020

American College of Toxicology (ACT #1402) 2016 to present

- Diversity, Equity, & Inclusion Inaugural Working Group, 2020 to 2021
- ToxChats Podcast Subcommittee, 2018 to 2020

Selected speaking experience

- Delivered 7 invited talks.
- Delivered 24 platform and 21 poster research presentations related to Western diet, colorectal cancer, transgenerational inheritance, gut microbial composition, epigenetic mechanisms, functional food bioactives, evergreen needle retention, Gunnison's prairie dog, and invasive plants.
- Delivered 33 academic presentations related to fentanyl analogues, glyphosate, circadian disruption, CRISPR, oligosaccharide fermentation, ketogenic diet, insulin-like growth factor 2, azoxymethane, cannabinoids, datura, mammalian venoms, melancholic microbes, artificial food colorings, meat induced carcinogenesis, G-quadruplex structures, neurotoxins, sperm histone methylation, functional foods, neuralbehavioral epigenetics, double-stranded RNA, mosaicism, fecal microbiota transplantation, tenofovir gel, sexual selection evolution, and reverse osmosis.

Selected science communication

- ComSciCon 2021 Flagship Workshop participant.
- Organized 1 scientific meeting, 4 mentoring events, and 4 seminars.
- Chaired 1 poster session and 8 platform sessions, and moderated 2 discussions.
- Hosted 9 webinars, 3 podcasts, 2 interviews, and 7 scientific socials.
- Authored 4 blog posts and edited 7 scientific blogs.
- Prepared 7 scientific newsletters and 3 societal posters.
- Delivered 2 public presentations within the general community.

Selected honors & awards

- Received 16 presentation awards, 18 travel awards, and 6 scholarships.
- SOT Science Communication Training Award in collaboration with the Alan Alda Center for Communicating Science, June 2021
- USUSA Graduate Enhancement Award, September 2020 ($5,000)
- Pinnacle Honor Society for Graduate Studies inductee, May 2020
- SOT GSLC Outstanding Graduate Student Leadership, March 2020 ($400)
- Federation of American Societies for Experimental Biology (FASEB) Diversity Resources for Enrichment, Access and Mentoring (DREAM), May 2019 ($1,000)
- Dharm V. Singh Graduate Student Endowment Award, February 2019 ($400)
- The Yost Outstanding Graduate Student Award, September 2018 ($100)
- USU Nutrition, Dietetics, and Food Sciences Bonita Wyse Dietetics Mediterranean Diet Study Abroad in Greece scholarship, February 2018 ($1,000)
- Frank C. Lu Student Award, February 2018 ($600)
- Dr. Laxman Desai Best Abstract Award, February 2018 ($400)
- American College of Toxicology North American Graduate Fellowship, August 2017 ($10,000)
- USU Noelle and John Cockett Graduate Fellowship, April 2017 ($1,734)
- USU Department of Animal, Dairy & Veterinary Sciences Doctoral Student Researcher of the Year Award, February 2017 ($600)

Selected publications

- **Phatak S,** AS Janesick, TT Schug, JJ Heindel, B Blumberg. 2 November 2023. Environmental Chemicals and Obesity. George A. Bray and Claude Bouchard Handbook of Obesity, Fourth Edition. Vol. 1, Epidemiology, Etiology, and Physiopathology. Chapter 45, pp 441-448. Taylor & Francis Ltd. ISBN 9781003437673. doi.org/10.1201/9781003437673-50
- Rodriguez DM, Hintze KJ, Rompato G, Wettere AJV, Ward RE, **Phatak S,** Neal C, Armbrust T, Stewart EC, Thomas AJ, Benninghoff AD. Dietary Supplementation with Black Raspberries Altered the Gut Microbiome Composition in a Mouse Model of Colitis-Associated Colorectal Cancer, although with Differing Effects for a Healthy versus a Western Basal Diet. Nutrients. 2022 Dec 10;14(24):5270. doi: 10.3390/nu14245270. PMID: 36558431; PMCID: PMC9786988.
- **Phatak, Sumira**, "Promotion of Colon Tumorigenesis in C57BL/6J Mice Following Multigenerational or Ancestral Exposure to the Total Western Diet and Intervention with Green Tea Extract" (2021). All Graduate Theses and Dissertations. 8360. https://digitalcommons.usu.edu/etd/8360
- Benninghoff AD, Hintze KJ, Monsanto SP, Rodriguez DM, Hunter AH, **Phatak S**, Pestka JJ, Wettere AJV, Ward RE. Consumption of the Total Western Diet Promotes Colitis and Inflammation-Associated Colorectal Cancer in Mice. Nutrients. 2020 Feb 20;12(2):E544. doi: 10.3390/nu12020544. PMID: 32093192.
- Rodriguez, DM, AD Benninghoff, NDJ Aardema, **S Phatak**, KJ Hintze. Basal Diet Determined Long-Term Composition of the Gut Microbiome and Mouse Phenotype to a Greater Extent than Fecal Microbiome Transfer from Lean or Obese Human Donors. Nutrients. 2019 Jul 17;11(7). pii: E1630. doi: 10.3390/nu11071630. PubMed PMID: 31319545; PubMed Central PMCID: PMC6682898.
- Chaudhary A, Kablan A, Edwards A, Stratton AE, Otto C, Stöckle C, Khoury Colin K, Sonke D, Gustafson D, Klauser D, Holley F, Thoma G, Blonk H, Otten J, Nelson J, Bogard J, Finley J, Guan K, Schaffner K, Wiebe K, Steenwerth K, Bryan K, Sibanda L, Frank M, Fukagawa N, Naylor R, Asseng S, **Phatak S**, Rowe S, Hess T, Sulser T, Chen W-T, Li Y, Conrad Z (2018) " Sustainable and Equitable Increases in Fruit and Vegetable Productivity and Consumption are Needed to Achieve Global Nutrition Security". Aspen Global Change Institute Position Paper.