KATRINE L. WHITESON — CURRICULUM VITAE

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EDUCATION

2001 – 2007	Ph.D., University of Chicago, Chicago, Illinois Biochemistry and Molecular Biology
1996 – 2000	B.A., University of California, Berkeley Molecular Cell Biology, Biochemistry

APPOINTMENTS

July 2025 –	Professor, UC Irvine (Dept. of Mol. Biology and Biochemistry)
July 2020 –	co-Director, UCI Microbiome Center
July 2020 – 2025	Associate Professor, UC Irvine (Dept. of Mol. Biology and Biochemistry)
July 2017 – 2020	Associate Director, UCI Microbiome Initiative
Sept. 2015 –	Courtesy Faculty, Dept. of Pediatrics, UC Irvine School of Medicine
Oct. 2014 – June 2020	Assistant Professor, UC Irvine (Dept. of Mol. Biology and Biochemistry)
Sept. 2011– August 2014	Post-doc/Adjunct Faculty, Dept. of Biology, San Diego State University,
August 2008 - August 2011	Research Scientist, University of Geneva Hospitals
Sept. 2007- June 2008	Lecturer. Molecular Biology and Biochemistry, UC Irvine
Sept. 2001 - August 2007	PhD Student, University of Chicago, Advisor: Prof. Phoebe Rice
Sept. 2000 - June 2001	Research Assistant, Hagedorn Research Institute, Copenhagen, Denmark

AWARDS

Chancellor's Fellow, University of California, Irvine, 2022-25
Susan Samueli Integrative Health Institute (SSIHI) Scholar, 2022-25
Faculty Mentor Award, UCI Bio Sci, 2022
Dry Bean Health Research Program Fellow, 2021
Visiting Researcher Fellowship, University of Copenhagen, 2021
Best Lab, Lake Arrowhead Microbial Genomics meeting, 2018
Gilead CF Research Scholar Award, 2015
Lake Arrowhead Microbial Genomics Poster Award, 2012
Molecular Cell Biology Training Grant, University of Chicago, 2001– 2007
Regents and Chancellors Scholar, UC Berkeley, 1996 – 2000
Alumni Scholarship, UC Berkeley, 1996 – 2000

RESEARCH SUPERVISION

Post-doctoral Research Supervision

2025 –	Sayali Mulay, PhD
2023 –	Gina Faraci, PhD (*UCI Mind T32 fellowship recipient)*
2021 –	Sage Dunham, PhD (*Cystic Fibrosis Foundation fellow, CFRI Nash Fellow*)
2024 – 25	Amit Lavon, PhD
2022 – 25	Mirjam Zünd, PhD (*Swiss National Science Foundation fellow*)
2020 – 21	Veronica Peterson, PhD
2019 – 2024	Jason Rothman, PhD *(Hewitt Foundation Fellow, now faculty at UC Riverside)*

Doctoral Thesis Advisor

2024 –	Kayla Raygoza *(GAANN & T32 fellowships, Best Poster Lake Arrowhead)*
2020 – 2025	Alisha Monsibais (defended in May 2025, now a scientist at Applied BioCode)
2018 – 2022	Julio Avelar-Barragan (defended in Nov. 2022, now a scientist at Thermo Fisher)
2017 – 2021	Joann Phan, PhD (defended in March 2021, now a research scientist at Sun Genomics)
2017 – 2021	Andrew Oliver, PhD (defended in June 2021, now an ORISE fellow at USDA)
2016 – 2020	Tara Gallagher, PhD (defended in June 2020, post-doc at CDC, now at Retrogen)

2015 – 2019 Stephen Wandro, PhD (defended in May 2019, post-doc at UCSD, now at Agilent)

I have also supervised ~50 Undergraduate, ~15 Masters' students, ~20 PhD rotations, ~5 Medical students and fellows, and ~15 staff in research.

TEACHING

Lecture courses

Microbiomes (UCI M190/E134: new course developed, 4 quarters 2022-26, ~60-84 students)
General Microbiology (UCI M122: 9 quarters from 2016-25, 200-400 students)
General Virology (UCI M124A: 2 shared quarters from 2021-22, ~130 students)
Graduate Genomics (UCI DB214/MBB244; 5 shared quarters from 2016-21, 15-25 students)

Lectures Regular guest lectures in graduate and undergraduate microbiology, medical school and engineering courses. Regular grand rounds presentations and public talks (*see Presentations*). Microbial Group winter and spring research presentations and journal clubs

LEADERSHIP and SERVICE

2026 Ad Hoc NIH Study Sections, 2 panels
2026 Organizer, SoCal Microbiome Symposium to be held at UCI Sept 18, 2026
2026 Organizer, Microbial Dark Matter Symposium, Laguna Beach, CA
2025 – Senior Editor, mBio, American Society for Microbiology
2025 Organizer, SoCal Microbiome Symposium held at Caltech Sept 19, 2025
2025 Organizer, Microbial Dark Matter Symposium, Laguna Beach, CA
2024 Keynote Speaker, Cystic Fibrosis Research Institute, Mountain View, CA
2025 Organizer, 3rd National Microbiome Centers Consortia Meeting, Irvine, CA
2024 Keynote Speaker, Viral Ecogenomics Meeting, Berkeley, CA
2024 Ad Hoc NIH Study Sections, 2 panels
2023-25 UCI Culinary Health Understanding the Microbiome Lecture Series
2023 Ad Hoc NIH Study Sections, 2 special emphasis panels
2022 – Diverse Educational Community and Doctoral Experience (DECADE) representative, UCI
2022 – DEI Committee for Mathematical Computational Systems Biology PhD program
2021 – International Microbiome and MultiOmics Standards Alliance (IMMSA) Steering Committee for the National Institute of Standards and Technology
2020-25 Senior Editor, mSystems, American Society for Microbiology
2020 – MD Anderson Cancer Center Houston Prime-TR microbiome center Advisory Board
2022 Organizer, 2022 National Microbiome Centers Consortia Meeting (Chicago)
2022 Center for Innovative Phage Applications and Therapeutics (IPATH) seminar series organizer
2021 Organizer, 2021 National Microbiome Centers Consortia Meeting (*online*)
2017-20 Associate Director, UCI Microbiome Initiative
2016 National Microbiome Initiative unveiling at The White House, attended as PI of the UC Center for Pediatric Microbiome research
2016-20 Associate Editor, mSystems
2016 – Associate Editor, PeerJ
2015 – Meeting Organizer for annual 3rd through 11th annual SoCal Microbiome Symposium, Calit2 UC Irvine (*2020 and 2021 postponed, resumed 2022, 2023 at UCR, 2024 Beckman NAS, 2025 CalTech*)
2014 – Graduate recruitment: Cell and Molecular Biosciences program, Mathematical, Computational and Systems Biology program, and Medical Scientist Training Program
2013 – Meeting Organizer, "Cystic Fibrosis: Ecology, Evolution, and Eradication" Telluride, CO

Reviewerships

mBio • mSystems • Nature • Nature Microbiology • Nature Biofilms and Microbiomes • Nature Communications • Microbiome • Thorax • Journal of Cystic Fibrosis • ISME Journal • Journal of Bacteriology • Plos One • Trends in Microbiology • peerJ • Garland Science • Swiss National Foundation • NSF Career program • EU JPI HDHL Intestinal Microbiomics • Canadian Research Council NSERC Discovery Grants • Journal of Breath Research • African Journal of Microbiology • Applied Microbiology and Biotechnology • Agence Nationale de la Recherche (ANR, France) 2011 Equipex panel

Memberships
American Society for Microbiology (ASM)
American Association for the Advancement of Science (AAAS)
Rancho Gordo Bean Club
UC Irvine Center for Viral Research, UC Irvine Institute for Genomics and Bioinformatics,
UC Irvine Cancer Research Institute, UC Irvine Center for Complex Systems Biology

PRESENTATIONS

2026 Infectious Disease Grand Rounds, UC Irvine; Rise-Up for Breast Cancer, San Francisco CA, European Society for Cystic Fibrosis meeting in Malta, Petri-Dishes to Painbrushes San Diego, CA; UCI Center for Neural Circuit Mapping; Keystone meeting Beyond Antibiotics: Emerging Strategies for Combating Bacterial Infection; Targeting Phage Therapy, Valencia, Spain. Guest lectures at Cornell and UCI. *Coming soon: I-SPY Breast Cancer Community Engagement talk, Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB), Southern California Alzheimer's Disease Research Conference, Microbial Dark Matter meeting organizer and panelist, (Laguna Beach, CA), SoCal Cystic Fibrosis Foundation community talk, Campbell/Sacher phage seminar series talk*

2025 UCSF Microbiome Symposium, Soka University, UCLA Anthropology Center for Behavior Evolution and Culture seminar series, Clalit-SSIHI visit day seminar, Osher Lifelong Learning Institute (OLLI), Zymo Research webinar, Telluride Science and Innovation Center, Cystic Fibrosis Research Institute keynote talk at annual meeting, COSMOS (California State Summer School for Science and Mathematics), Evergreen Phage meeting, Microbial Dark Matter meeting organizer and panelist, (Laguna Beach, CA), UCI Illuminations, Gladstone UCSF Phage Working Group

2024 Inaugural Microbes in Wastewater meeting (Laguna, CA), UCI Culinary Health, International Microbiome & Metabolomics Standards Alliance (IMMSA, NIST) panel, Microbiome & Probiotics R&D Forum (San Diego, CA), University of Southern California Human Evolutionary Biology Seminar, Center for Microbiome Innovation International Microbiome Meeting (CIMM, San Diego, CA), UC Irvine Research Associates, University of Minnesota Biofilms & Microbiomes Symposium, International Food Information Council webinar, University of British Columbia (Okanaga, BC, Canada), Cystic Fibrosis Research Institute (San Francisco, CA), University of Tennessee, Knoxville, TN. Lake Arrowhead Microbial Genomics opening night talk, North American Cystic Fibrosis Conference, Boston, MA, Society for Neuroscience, Chicago, IL, VEGA keynote talk, UC Berkeley, CA, UCI BioSci Dean's Lecture

2023 Flinders Accelerator for Microbiome Exploration Cystic Fibrosis Hackathon Keynote (Flinders, Australia via zoom), American Society for Microbiology Ecology & Evolution Retreat Keynote, UCI Cancer Center Symposium, OC Farm & Food lab, Institute for Interdisciplinary Salivary Bioscience Research, Harvard Medical School Clinical & Translational Epidemiology Unit, Cystic Fibrosis Evolution & Ecology workshop Telluride (CO), California Department of Public Health and University of California Office of the President Partnership, UC San Francisco Breast Care Center, Gordon Conference on Microbial Population Biology, I-SPY Breast Cancer Survivor Patient Advocate Group, Evergreen Phage Meeting (Evergreen, Washington), International Society for Evolution, Medicine & Public Health (Beckman NAS Center, Irvine, CA), International Conference on Enterococci (Porto, Portugal), Cystic Fibrosis Foundation workshop on Polymicrobial Infection models (Georgia Tech, Atlanta), Samueli Center for Integrative Health gala, ASM mSystems Thinking Fiber and Microbiome Webinar, UC San Francisco Taste for the Cure, Markets&Markets Biotechnology San Diego, Samueli Center for Integrative Health (UCI) Seminar, Wisdom Trial

2022 National Institute for Standards and Technology (IMMSA quarterly webinar), Seattle Study Club, Phage Summit – London, UK (*online*), Microbiome & Probiotics R&D Forum – San Diego, CA, UCI Alzheimer's Disease Research Center, Association of Biomolecular Resource Facilities, Microbiome Centers Consortia meeting Chicago, World Asthma Foundation Congress, University of Chicago, 3rd Annual Microbiome Data Congress – Boston, American Society for Microbiology – DC, UCI Minority Science Program, California Water Environment Association PS3 – Long Beach, CA, Beneficial Microbes – Madison, WI, Gordon Conference on Streptococcal and Enterococcal Biology, International Society for Microbial Ecology, Switzerland, UCI Artificial Intelligence Symposium, Osher Lifelong Learning Institute, UCI Gastroenterology Grand Rounds

2021 University of Pittsburgh, UCI Gastroenterology and Hepatology Symposium, Metabiomics, University of Copenhagen, Danish Technical University, UC Irvine Illuminations, Clemson University, Kisaco Connect Oral Microbiome Boston (*online*), Global Engage Microbiome Futures, MarketsandMarkets Next Gen Microbiome and Probiotics Virtual Conference, Kisaco Microbiome Conference, UCI Gastroenterology Microbiome Module for Fellows

2020 UCI Medical Center Grand Rounds, Center for Microbiome Innovation meeting UCSD, Society for Leukocyte Biology, UCI Chief Executive Roundtable, Morning Sign Out, *>12 presentations post-poned/cancelled due to COVID-19*

2019 NTU-UCI-UTHealth Symposium, National Taiwan University College of Medicine, Taipei, Taiwan; Microbiological Society Meeting, Belfast, UK; University of Exeter Penryn Campus, UK; Orange County Water District, Fountain Valley, CA; YogaFest, Anteater Recreation Center, UC Irvine, CA; American Thoracic Society, Dallas, TX; Microbiome Center, Medical College of Wisconsin, Milwaukee, WI; Telluride Science Research Center, Telluride, CO; iPath Center for Innovative Phage Applications, UCSD and SDSU, San Diego, CA; Center for Systems Biology Graduate student Bootcamp, UC Irvine, MD Anderson Cancer Center Houston Prime-TR microbiome center keynote speaker

2018 Caltech CEMI Winter Lecture; Human Microbiome Congress, San Diego, CA, Gavin Herbert Eye Institute Bench to Bedside Symposium; UCI Infectious Diseases Grand Rounds; VI4 Symposium, Vanderbilt University; UCI Medical School Grand Rounds; WholeBiome, San Francisco, CA; MetaOrganisms CRC Seminar, Kiel, Germany; Microbial Diversity Course, Marine Biological Lab, Woods Hole, MA; NACFC Session chair presentation, Denver, CO; Math and the Microbiome Workshop, Ohio State University; SoCal American Society for Microbiology (SCASM) meeting, San Diego, CA;

2017 Human Microbiome Congress, San Diego; University of Nebraska; University of Michigan; PittConn (Chicago); San Diego Microbiology Group; Cellular Communities in Infection (Hannover, Germany); Gordon Conference on Animal-Host Symbioses; EpiBiome (San Francisco); Telluride Science Research Center; UCI: Stem Cell Center, Molecular Microbiology and Genetics, GI DOT, Pathology Grand Rounds; USC-CHLA Microbiome Symposium; Asilomar Bacterial Physiology

2016 UCI Endocrinology Dept, Beckman Laser Institute, Long Beach Miller's Pulmonary Fellows, Attendee at the White House OSTP announcement of the National Microbiome Initiative, UCI Neonatology, Cosmos summer program at UCI, Lake Arrowhead Microbial Genomics

2015 ASM session (co-convener and speaker), Illumina Medical Genomics Summit, SoCal Systems Biology, UC Riverside, Cal State San Bernadino, UCI Ayala Scholars, SoCal Toxicology Society

2014 NACFC Atlanta invited speaker: "Metabolites as biomarkers of microbial activity in CF"; U Wisconsin Madison: "Metabolites, Germs and People, Eavesdropping on host-associated microbial communities"; U Michigan; U Chicago; UC Irvine; Illumina; Chapman U; Lake Arrowhead Microbial Genomics; NESCENT NSF workshop: "Fecal phage dark matter and other stories of the human virome"

2013 "Cystic Fibrosis: Ecology, Evolution, and Eradication" Telluride, CO; Human Microbiome Project Vision, Bethesda, MD; Systems and Synthetic Microbiology Investigative Workshop, NIMBioS, Knoxville, TN, SDSU Biology Seminar; NIH workshop: Dynamics of Host Associated Microbial Communities; San Diego Microbiology Group; Institute for Clinical Translational Science, UC Irvine (poster)

2012 Sonoma International Breath Analysis meeting; Microbiology of CF Airways Workshop, Rigshospitalet, Copenhagen; International Society of Microbial Ecology, invited talk at ISME14, Copenhagen; Wine'ing about CF, San Diego; University of Amsterdam; Lake Arrowhead Microbial Genomics (invited talk, won best poster award); U. Washington Seattle; Innate Immunity and the Microbiome, Keystone, Colorado (poster)

2011 UCL London, University of Copenhagen, EPFL Lausanne, FEMS Microbiology Congress, Geneva, Switzerland, Keystone meeting: Microbial Communities Drive Ecosystem Complexity, UC Irvine Dept of Ecology and Evolution, Microbial Group

2010 Lake Arrowhead Microbial Genomics meeting, International Association of Dental Research (IADR), Barcelona, Spain *declined*, Swiss Society of Microbiology Annual Meeting, Zurich, Switzerland, Systems Biology of Micro-organisms Meeting, Paris, France,

2009 Swiss Society of Microbiology Annual Meeting, Lausanne, Switzerland *declined*

PUBLIC OUTREACH

2026 "Microbial Dark Matter Is an Unknown World That Exists in Earth's Harshest Environments and Our Own Bodies," *Discover Magazine*, June 2026 (plus companion video)

2025 "A literal gut check," *UC Irvine News*, September 2025

2025 "Paving the way for microbiome-based therapy in clinical practice," *Gut Microbiota for Health*

2025–2026 Featured guest, *Daniel and Kelly's Extraordinary Universe* (iHeartRadio), episodes on Phage Therapy, Biofilms, and The Hygiene Hypothesis

2024 Featured guest, *Integrative Insider* podcast, "Fiber & the Quest to Optimize Metabolic Health"

2023 "A Little Fiber for your Health," SSIHI Research News, November 2023

2021 "Telluride Science Presents: Katrine Whiteson," *Telluride Daily Planet*, May 2021

2021 "UCI 'Fiber Force' Study Finds High-fiber Diet Brings Significant Changes to Human Gut Microbiome," UCI School of Biological Sciences, March 2021

2021 Featured guest, *Superhuman Radio* podcast

2020 "Microbiome Connections," *Interface Magazine*, June 2020

2019 "UCI biologists spearhead creation of Microbiome Centers Consortium," *UCI News*, December 2019

PUBLICATIONS

preprints

104. Goddard TR, Carlson-Jones JA, et al., **Whiteson KL**, et al. "Microbial Ecological Signatures Predict Pathogen Emergence and Multidrug Resistance in Cystic Fibrosis Airways up to a Year in Advance." *medRxiv* (preprint), 2026 Jan 02. PMID: 41503489

103. Kanhirun N, Blanc A, Aindow A, You M, Antani JD, Ghatbale P, Leonard J, Garcia AG, Nghiem K, Whiteson K, Schooley RT, Turner PE, Pogliano J, Cobián Güemes AG, Pride DT. Identification of a large cohort of *Enterobacter* jumbo phages with broad host ranges across pathogenic *Gammaproteobacteria*. *bioRxiv.* Preprint. 2024. doi: 10.1101/2024.10.29.620934.

102. Adams, E., Gille, A., Alaniz N., Jamie, C., Patton, J., **Whiteson, K.** Comparing Fecal, Saliva, and Chicha Microbiomes Between Mothers and Children in an Indigenous Ecuadorian Cohort bioRxiv 2020.10.02.323097; doi: https://doi.org/10.1101/2020.10.02.323097 (*Related Manuscript under revision at Current Biology*)

Related protocol: Eric Adams, Stephen Wandro, Julio Avelar-Barragan, Andrew Oliver, **Katrine Whiteson** 2020. Low Volume Methodology for Nextera DNA Flex Library Prep Kit (96 Samples). protocols.io https://protocols.io/view/low-volume-methodology-for-nextera-dna-flex-librar-be6rjhd6 **Featured protocol, October 2020

Peer-reviewed publications

101. Flamholz ZN, Mulay SA, Leshyk V, Caporaso JG, Eisen JA, Kelly L, Lloyd KG, Osburn MR, Podar M, Roux S, Regberg SAB, Ruff SE, Tierney B, Tighe S, Trembath-Reichert E, Venkateswaran K, Woyke T, Locken KM,

Sapers HM, **Whiteson K**. "Exploring life's hidden majority: microbial dark matter symposium highlights." *mSphere*, 2026;0:e00587-25. https://doi.org/10.1128/msphere.00587-25

100. Dunham SJB, Willkeen GA, Darby B, Corley JM, Hahn A, Klapper I, Bean HD, Caverly LJ, Thornton CS, Martin C, Quinn RA, Widder S, Bailey BA, Wagner BD, Garg N, Planet PJ, Hunter RC, LiPuma JJ, Rohwer F, **Whiteson KL**. "The Guild Model of CF Airway Microbial Ecology." *mBio*, 2026 Apr 30. PMID: 42059556 *Selected for Cover

99. Faraci G, Goodfriend B, Bishop J, Vu M, Avelar-Barragan J, Dunham SJB, Rothman JA, **Whiteson KL**, Cheema AK, Milinkeviciute G, Tenner AJ, LaFerla FM, MacGregor GR, Green KN, Mapstone M. "The TREM2 R47H variant is associated with liver-plasma-brain axis dyshomeostasis in the 5xFAD mouse model of Alzheimer's disease." *Neurobiol Aging*, 2026 Apr 29;165:24-37. PMID: 42102578

98. Grimm SL, Rothman JA, Bradshaw WJ, Langlois K, Steele JA, Griffith JF, Kaufman JT, **Whiteson KL.** Deep metatranscriptomic sequencing data of wastewater from Los Angeles, USA, 2023–2024. *Sci Data.* 2025 Dec 24. doi:10.1038/s41597-025-06475-7. PMID: 41444257.

97. Ghatbale P, Blanc A, Sue A, Leonard J, Bates M, Garcia AG, Hensley J, Gomes Nunes DD, Hitchcock N, Shiach J, Bardaró R, Sah G, Ghose C, **Whiteson KL,** Schooley RT, White RA III, Cobián Güemes AG, Meyer JR, Pride DT. Experimental phage evolution results in expanded host ranges against antibiotic-resistant *Klebsiella pneumoniae* isolates. *Nat Commun.* 2025 Nov 19;16(1):9903. doi:10.1038/s41467-025-66062-7. PMID: 41258013.

96. Gilbert JA, Azad MB, Bäckhed F, Blaser MJ, Byndloss M, Chiu CY, Chu H, Dugas LR, Elinav E, Gibbons SM, Gilbert KE, Henn MR, Ishaq SL, Ley RE, Lynch SV, Segal E, Spector TD, Strandwitz P, Suez J, Tropini C, Whiteson K, Knight R. Clinical translation of microbiome research. *Nat Med.* 2025 Apr;31(4):1099-1113. doi: 10.1038/s41591-025-03615-9. Epub 2025 Apr 11. PMID: 40217076. Review.

95. Kline A, Cobián Güemes AG, Yore J, Ghose C, Van Tyne D, Whiteson K, Pride DT. Current Clinical Laboratory Challenges to Widespread Adoption of Phage Therapy in the United States. *Antibiotics (Basel).* 2025 May 29;14(6):553. doi: 10.3390/antibiotics14060553. PMID: 40558145. Review.

94. Gallagher, T., Leemans, S., Dvornikov, A. S., Perinbam, K., Fong, J., Kim, C., Kapcia, J., Kagawa, M., Grosvirt-Dramen, A., Hochbaum, A. I., Digman, M. A., Gratton, E., Siryaporn, A., & **Whiteson, K**. (2025). Fluorescence lifetime imaging detects long-lifetime signal associated with reduced pyocyanin at the surface of *Pseudomonas aeruginosa* biofilms and in cross-feeding conditions. *ACS Infect Dis.* 2025 Mar 14;11(3):543-549. doi: 10.1021/acsinfecdis.4c00489. Epub 2025 Mar 4. PMID: 40034082.

93. Monsibais AN, Tea O, Ghatbale P, Dunham SJB, Zünd M, Phan J, Lam K, Paulson M, Tran N, Suder DS, Blanc AN, Samillano C, Suh J, Atif H, Vien E, Nguyen R, Vo A, Gonen S, Pride D, **Whiteson K**. Enhanced suppression of *Stenotrophomonas maltophilia* by a three-phage cocktail: genomic insights and kinetic profiling. *Antimicrob Agents Chemother.* 2025 Mar 5;69(3):e0116224. doi: 10.1128/aac.01162-24. Epub 2025 Jan 22. PMID: 39840957.

92. Ghatbale P, Sah GP, Dunham S, Khong E, Blanc A, Monsibais A, Garcia A, Schooley RT, Cobián Güemes AG, **Whiteson K**, Pride DT. *In vitro* resensitization of multidrug-resistant clinical isolates of *Enterococcus faecium* and *E. faecalis* through phage-antibiotic synergy. Antimicrob Agents Chemother. 2024 Dec 19:e0074024. doi: 10.1128/aac.00740-24. Epub ahead of print. PMID: 39699213.

91. Kim M, Parrish RC II, Tisza MJ, Shah VS, Tran T, Ross M, Cormier J, Baig A, Huang CY, Brenner L, Neuringer I, **Whiteson K**, Harris JK, Willis AD, Lai PS. Host DNA depletion on frozen human respiratory samples enables successful metagenomic sequencing for microbiome studies. *Commun Biol.* 2024 Nov 28;7(1):1590. doi: 10.1038/s42003-024-07290-3. PMID: 39609616. Free PMC article.

90. Alam Y, Hakopian S, Ortiz de Ora L, Tamburini I, Avelar-Barragan J, Jung S, Long Z, Chao A, **Whiteson K**, Jang C, Bess E. Variation in human gut microbiota impacts tamoxifen pharmacokinetics. *mBio.* 2024 Nov 25:e0167924. doi: 10.1128/mbio.01679-24. Online ahead of print. PMID: 39584836.

89. Rojas-Andrade MD, Perinbam K, Nguyen QT, Kim JS, Palomba F, **Whiteson K,** Digman MA, Siryaporn A, Hochbaum AI. Rapid Antibiotic Susceptibility Determination by Fluorescence Lifetime Tracking of Bacterial Metabolism. *ACS Infect Dis.* 2024 Dec 13;10(12):4057-4065. doi: 10.1021/acsinfecdis.4c00491. Epub 2024 Nov 21. PMID: 39572010.

88. Akob DM, Oates AE, Girguis PR, Badgley BD, Cooper VS, Poretsky RS, Tierney BT, Litchman E, Whitaker RJ, **Whiteson KL**, Metcalf CJE; Ecology Evolutionary and Biodiversity Retreat Participants. Perspectives on the future of ecology, evolution, and biodiversity from the Council on Microbial Sciences of the American Society for Microbiology. *mSphere.* 2024 Nov 21;9(11):e0030724. doi: 10.1128/msphere.00307-24. Epub 2024 Oct 10. PMID: 39387587. Free PMC article. Review.

87. Capocchi JK, Figueroa-Romero C, Dunham SJB, Faraci G, Rothman JA, **Whiteson KL**, Seo DO, Holtzman DM, Grabrucker S, Nolan YM, Kaddurah-Daouk R, Jett DA. Symposium: What Does the Microbiome Tell Us about Prevention and Treatment of AD/ADRD? *J Neurosci.* 2024 Oct 9;44(41):e1295242024. doi: 10.1523/JNEUROSCI.1295-24.2024. PMID: 39384409. Review.

86. Rothman, J.A., Piccerillo, H.L., Dunham, S.J.B., Riis, J., Granger, D., Thomas, B., and **Whiteson, K.L**. The salivary metabolome of children and parental caregivers in a large-scale family environment study. *npj Metab Health Dis* **2**, 22 (2024). https://doi.org/10.1038/s44324-024-00024-3

85. Pérez-Prieto, I., Vargas, E., Salas-Espejo, E., Lüll, K., Canha-Gouveia, A., Pérez, L.A., Fontes, J., Salumets, A., Andreson, R., Aasmets, O., Estonian Biobank research team, **Whiteson, K**., Org, E., Altmäe, S. "Gut microbiome in endometriosis: a cohort study on 1000 individuals." *BMC Medicine.* 2024 Jul 18;22(1):294. doi: 10.1186/s12916-024-03503-y. PMID: 39020289 Free PMC article.

84. Dunham, S.J.B., Avelar-Barragan, J., Rothman, J.A., Adams, E.D., Faraci, G., Forner, S., Kawauchi, S., Tenner, A.J., Green, K.N., LaFerla, F.M., MacGregor, G.R., Mapstone, M., **Whiteson, K.L**. "Sex-specific associations between AD genotype and the microbiome of human amyloid beta knock-in (hAβ-KI) mice." *Alzheimer's & Dementia.* 2024 Jul;20(7):4935-4950. doi: 10.1002/alz.13794. Epub 2024 Apr 4. PMID: 38572865 Free PMC article.

83. Mendez Luque LF, Avelar-Barragan J, Nguyen H, Nguyen J, Soyfer EM, Liu J, Chen JH, Mehrotra N, Huang X, Kosiorek HE, Dueck A, Himstead A, Heide E, Lem M, El Alaoui K, Mas E, Scherber RM, Mesa RA, **Whiteson KL**, Odegaard A, Fleischman AG. The NUTRIENT Trial (NUTRitional Intervention among myeloproliferative Neoplasms): Results from a Randomized Phase I Pilot Study for Feasibility and Adherence. Cancer Res Commun. 2024 Mar 5;4(3):660-670. doi: 10.1158/2767-9764.CRC-23-0380. PMID: 38391189; PMCID: PMC10913729.

82. Routy B, Jackson T, Mählmann L, Baumgartner CK, Blaser M, Byrd A, Corvaia N, Couts K, Davar D, Derosa L, Hang HC, Hospers G, Isaksen M, Kroemer G, Malard F, McCoy KD, Meisel M, Pal S, Ronai Z, Segal E, Sepich-Poore GD, Shaikh F, Sweis RF, Trinchieri G, van den Brink M, Weersma RK, **Whiteson K**, Zhao L, McQuade J, Zarour H, Zitvogel L. Melanoma and microbiota: Current understanding and future directions. Cancer Cell. 2024 Jan 8;42(1):16-34. doi: 10.1016/j.ccell.2023.12.003. Epub 2023 Dec 28. PMID: 38157864.

81. Bru JL, Kasallis SJ, Chang R, Zhuo Q, Nguyen J, Pham P, Warren E, **Whiteson K**, Høyland-Kroghsbo NM, Limoli DH, Siryaporn A. The great divide: rhamnolipids mediate separation between *P. aeruginosa* and *S. aureus*. Front Cell Infect Microbiol. 2023 Sep 15;13:1245874. doi: 10.3389/fcimb.2023.1245874. PMID: 37780859; PMCID: PMC10540625.

80. Petrisko TJ, Gargus M, Chu SH, Selvan P, **Whiteson KL**, Tenner AJ. Influence of complement protein C1q or complement receptor C5aR1 on gut microbiota composition in wildtype and Alzheimer's mouse models. J Neuroinflammation. 2023 Sep 19;20(1):211. doi: 10.1186/s12974-023-02885-9. PMID: 37726739; PMCID: PMC10507976.

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FUNDING

NIH/NIA MODEL-AD PIs: LaFerla, Green & Tenner 09/21/2022 – 08/31/2027
Parent grant: 2U54AG054349-06
Title: *UC Irvine MODEL-AD*
The goal of my contribution to this project is to characterize the microbiome and metabolome in fecal and cecal samples from novel late-onset mouse models of Alzheimer's disease.

Nestlé Health Science co-PI: Whiteson 07/01/2025 – 06/31/2027
Title: Impact of Lifestyle Factors on the Microbiome; A Longitudinal Collaboration Study
To examine the impact of lifestyle factors including stress and dietary intervention (chia seed supplementation) on protective mechanisms in the gut (IgA) in healthy participants.

Cystic Fibrosis Research Institute PI: Whiteson 06/01/2023 – 12/31/2025
Title: *Targeting recalcitrant CF pathogens with phages, antibiotics, and small molecule adjuvants*.

The major goal of this project is to develop synergistic approaches for targeting cystic fibrosis relevant pathogens with combinations of phage, volatiles and antibiotics.

NIH R01EB030558-01A1 PI: Chen, Z 09/15/2021 – 7/14/2026
Title: Continuous Monitoring and Management of Vaginal Health via Multifunctional OCT/OCTA Endoscopy
The major goal of this project is to study the use of non-invasive laser microablation to treat genitourinary syndrome in menopausal women. Our role in the project is to study the vaginal microbiome in cervicovaginal samples collected from the study participants. Role: Co-I *pending NCE*

Susan Samueli Integrative Health Institute Pilot Studies Award PI: Whiteson 10/2024 – present
Title: Antibiotic Alternatives: The Path to Phage Therapy at UC Irvine
Major Goals: The purpose of this pilot project is to prepare phages for clinical use, and establish a system for compassionate use phage therapy cases at UC Irvine.

Susan Samueli Integrative Health Institute Pilot Studies Award PI: Whiteson 3/2024–8/2025
Title: Priming Breast Cancer Survivors for success with High Fiber Diets to promote microbiome and immune health
Major Goals: The purpose of this research study is to examine the effects of normal lifestyle perturbations (e.g. diet changes) on the gut microbiota of breast cancer survivors. We are undertaking a Chia seed fiber intervention for 60 participants, >30 recruited as of February 2025.

Samueli Integrative Health Scholar Award PI: Whiteson 01/2023 – 01/2026
The goal of this project is to conduct integrative health focused research at UCI in collaboration with the culinary medicine, building on diet and microbiome or phage therapy components of our ongoing research.

UC Irvine Chancellors Fellow Whiteson 07/2022 – 07/2025
This is a distinction awarded to tenured faculty whose body of scientific work supports a strong trajectory towards distinction. Further information here: https://www.bio.uci.edu/professor-katrine-whiteson-chancellors-fellow

Northarvest Bean Growers Association PI: Whiteson 09/2021 – present
Title: May the Fiber be with you: Promoting health through dietary manipulation of the gut microbiome
The major goal of the Dry Bean Health Research Program incentive award to support research projects involving dry beans and health. It will support graduate student Julio Avelar-Barragan to culture fibers including several kinds of dry beans with gut microbial community samples from colonoscopy patients in Orange County, CA and healthy volunteers from Morocco. The fiber enriched microbial communities will be sequenced and analyzed with GC-MS to determine the microbes and molecules resulting from gut microbial metabolism of dry bean fibers.

In-Kind Support

Cystic Fibrosis Foundation and Cystic Fibrosis Research Institute (CFRI) Nash fellowships supporting phage-bacteria interaction research (Dr. Sage Dunham); an NIH T32 predoctoral fellowship and Department of Education GAANN award supporting phage-antibiotic synergy research (Kayla Raygoza); an NIH T32 postdoctoral fellowship supporting Alzheimer's-focused microbiome research (Dr. Gina Faraci); and donations supporting phage therapy research.

Completed Research Support within the last several years. *Complete list available upon request*

Environmental Protection Agency PI: Jiang, S. 08/01/2021 – 08/31/2025
84025701
Title: Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse
The major goal of this project is to assess the efficacy of viral surrogates in determining water quality in the context of water reuse; Whiteson lab contributions will include wastewater influent and effluent sequencing.

Susan Samueli Integrative Health Institute Pilot Studies Award PI: Martiny, J 10/1/2023–10/30/2024
Title: Investigating the role of Bifidobacterium diversity on fiber degradation for development of multi-strain Probiotics”

Major Goals: The overall objective of this project is to determine which specific strains of bifidobacteria degrade which specific types of polysaccharide dietary fiber. Bess is a co-I on this project with the role of preparing magnetic beads that are coated with polysaccharides and measuring polysaccharide degradation by bifidobacteria.

Cystic Fibrosis Foundation Whiteson, Pride co-I 06/2021 – 05/2024
Title: *Phages against Stenotrophomonas maltophilia as alternatives to antibiotics*
The major goal of this project is to develop phage cocktails comprised of phages with orthogonal characteristics and functional properties can work cooperatively to kill antibiotic resistant *Stenotrophomonas maltophilia*.

R00RG2814 PI: Whiteson 4/2020 –4/2023
University of California Office of the President (UCOP)
Title: *Sewage Surveillance to monitor COVID19 outbreak*
The goal of this project is to concentrate, extract and sequence the SARS-CoV-2 virus from wastewater samples at 8 SoCal wastewater districts to assess population level viral concentration and diversity.

R21 AI149354-01 PI: Whiteson 03/15/2020 – 3/16/2023
NIH/NIAID
Title: *Developing synergistic antibiotic and phage cocktails to target bacterial pathogens*
This project's goal is to identify *Enterococcus* phage and antibiotic combinations that have synergistic effects for targeting antibiotic resistant *Enterococcus* spp. infections.

NIH/NHLBI 1 R01 HL136647-01 PI: LiPuma; role: co-PI 4/1/2017 – 3/31/2023
Title: *Dynamics of airway microbiota at pulmonary exacerbation in cystic fibrosis*
The major goal of this project is to track microbial community composition and activity with samples from adult cystic fibrosis patients in collaboration with Prof. John LiPuma at U. Michigan.

NIH/NIA MODEL-AD Supplement PI: Whiteson 09/01/2019 – 08/31/2021
Parent grant: U54AG054349-01
Title: *Microbiome and metabolome analysis of late onset AD mouse models to understand the role of microbial colonization on AD onset timing*
The goal of this project is to characterize the microbiome and metabolome in fecal and cecal samples from several mouse models of Alzheimer's disease.

F0018-05 PIs: Granger (UCI) and Blair (NYU), Whiteson sub-award 09/01/2018 – 08/31/2021
New York University (OD023332 Blair)
Early Life Stress and the Environmental Origins of Disease: a population-based Prospective Longitudinal Study of Children in Rural Poverty (ECHO)
We will study saliva microbial and metabolome composition in a cohort of ~800 mothers and their 1st grade children, to determine how the oral microbiome and metabolome are shared within a family and in comparison to other lifestyle factors including smoking.

Cystic Fibrosis Foundation STOP-MB OOC PI: LiPuma; role: co-PI 01/01/2017 – 01/01/2021
Title: *Airway Microbiome Changes Associated with Antibiotic Treatment Response in CF Pulmonary Exacerbations (STOP-MB)*
The major goal of this project is to add metabolomics data to an existing clinical trial, CFF-STOP2, to identify microbial metabolite biomarkers of CF pulmonary exacerbation in a trial comparing the duration of antibiotic therapy to treat CF pulmonary exacerbations.

American Cancer Society Institutional Research Grant PI: Whiteson 1/1/2018 – 12/31/2019
Title: "Variations in local microbiome populations in normal colorectal tissue and polyps".
The major goal of this project is to study biogeography of colon microbiomes in the context of colon cancer

OPP1159806 MPIs: Slifka/Messaoudi, role: Co-I 12/01/2016 – 11/30/2019
Bill and Melinda Gates Foundation
Title: Campylobacter vaccination to reduce enteric disease and improve infant growth velocity
Our lab's role in this project is to advise a joint student to study composition and activity microbiome of infant and mother rhesus macaque gut microbiomes in the context of health and enteric disease.

Parent 1UL1TR001414-01 04/2016 – 10/2019
Institute for Clinical Translational Science BRAID
Title: UC Pediatric Microbiome Institute PI: Whiteson

The major goal of this project is to establish an institute including microbiome focused researchers across all of the University of California campuses. Participants include: UCSF: Fischbach, M; Pollard, K., Lynch, S.; LBL: Northen, T.; UC Davis: Fiehn, O., Mills, D., Eisen, J., Lebrilla, C.; UCLA: Mayer, E., Li, H., Tillisch, K., Ziring, D., Braun, J.; UCI: Hochbaum, A., Ragan, R.,; UCSD: Knight, R., Dorrestein, P.

UCI School of Medicine – Bio Sci Research Award 11/2017 – 11/2019
PIs: Dr. Nimisha Parekh & Dr. Katrine Whiteson
Title: "*Microbial community composition following fecal transplant for recurrent* C. difficile *infection"*
The major goal of this project is to study the microbial communities in fecal transplant donors and recipients at UCI, and to work toward an understanding of why fecal transplants are able to treat *C. difficile* infections

GS-203575 (Whiteson) 04/2016 – 12/2018
Gilead CF Research Scholar Award PI: Whiteson
Title: Microbial fermentation products as indicators of pulmonary infection
The major goals of this project are to study metabolites from adult cystic fibrosis patients, and to carry out model culture experiments.

Air Force Office of Scientific Research PI: Wilder-Smith; role: collaborator 04/01/2017 – 04/01/2020
Title: Personalized Treatment of Wound Infection Biofilm
The major goal of this project is to develop technology to identify biomarkers of microbial physiology that detect the conversion from acute to chronic infection.

UC Irvine Seed Grant 02/08/16 – 02/07/17
Title: The evolutionary ecology of the human virome
PI: Martiny Role: co-PI
The goal of this study is to demonstrate the feasibility of characterizing phage-bacteria interactions in the human gut.