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Cell and Molecular Biology Program
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EDUCATION

1987-1991 B.A., *magna cum laude*, Cornell University
Department of Neurobiology and Behavior
Honors Thesis: The regulation of comb building in honeybee colonies
Thesis Advisor: Thomas D. Seeley

1993-1998 Ph.D., University of Colorado
Department of Environmental, Population and Organismal Biology
Dissertation: Resource use in the bark beetle genus *Dendroctonus*
Thesis Advisors: Brian D. Farrell, Ph.D. and Jeffry B. Mitton, Ph.D.

PROFESSIONAL EXPERIENCE

1991-1992 Elementary School Teacher, Houston, Texas
1992-1993 Research Technician, Cornell University, Ithaca, New York
1993-1996 Graduate Teaching Assistant, University of Colorado, Boulder
1998-2002 Postdoctoral Fellow, University of Colorado, Boulder
2002-2008 Assistant Professor, San Diego State University
2008-2012 Associate Professor, San Diego State University
2012-Present Professor, San Diego State University

2020-Present Director, Bioinformatics and Medical Informatics Program, San Diego State University

PUBLICATIONS

Peer-Reviewed Papers (*h*-index = 56; *i10*-index=97, as of October 2024)
Google Scholar: https://scholar.google.com/citations?user=oHXnsCEAAAAJ
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2. Kelley ST, Farrell BD. 1998. Is specialization a dead end? The phylogeny of host use in Dendroctonus bark beetles (Scolytidae). Evolution (N Y) 52:1731–1743.
3. Kelley ST, Thackray VG. 1999. Phylogenetic Analyses Reveal Ancient Duplication of Estrogen Receptor Isoforms. J Mol Evol 49:609–614.
4. Kelley ST, Mitton JB, Paine TD. 1999. Strong Differentiation in Mitochondrial Dna of Dendroctonus brevicomis (Coleoptera: Scolytidae) on Different Subspecies of Ponderosa Pine. Ann Entomol Soc Am 92:193–197.
5. Akmaev VR, Kelley ST, Stormo GD. 1999. A phylogenetic approach to RNA structure prediction. Proc Int Conf Intell Syst Mol Biol 10–17.
6. Kelley ST, Farrell BD. 1999. Phylogenetic Analysis of Resource Use and Specialization in Dendroctonus (Coleoptera: Scolytidae) UNITED STATES DEPARTMENT OF AGRICULTURE FOREST SERVICE GENERAL TECHNICAL REPORT PNW. US Department of Agriculture.
7. Ramey RR, Kelley ST, Boyce WM, Farrell BD. 2000. Phylogeny and Host Specificity of Psoroptic Mange Mites (Acarina: Psoroptidae) as Indicated by ITS Sequence Data. J Med Entomol 37:791–796.
8. Scott VL, Kelley ST, Strickler K. 2000. Reproductive Biology of Two Coelioxys Cleptoparasites in Relation to Their Megachile Hosts (Hymenoptera: Megachilidae). Ann Entomol Soc Am 93:941–948.
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11. Akmaev VR, Kelley ST, Stormo GD. 2000. Phylogenetically enhanced statistical tools for RNA structure prediction. Bioinformatics 16:501–512.
12. Kelley ST, Harris JK, Pace NR. 2001. Evaluation and refinement of tmRNA structure using gene sequences from natural microbial communities. RNA 7:1310–1316.
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14. Harris JK, Kelley ST, Pace NR. 2004. New perspective on uncultured bacterial phylogenetic division OP11. Appl Environ Microbiol 70:845–9.
15. Rohwer F, Kelley S. 2004. Culture-Independent Analyses of Coral-Associated Microbes, p. 265–277. *In* Coral Health and Disease. Springer Berlin Heidelberg, Berlin, Heidelberg.

16. Breitbart M, Felts B, Kelley S, Mahaffy JM, Nulton J, Salamon P, Rohwer F. 2004. Diversity and population structure of a near–shore marine–sediment viral community. Proc R Soc London Ser B Biol Sci 271:565–574.
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18. McManus CJ, Kelley ST. 2005. Molecular survey of aeroplane bacterial contamination. J Appl Microbiol 99:502–508.
19. Jensen JL, Bohonak AJ, Kelley ST. 2005. Isolation by distance, web service. BMC Genet 6:13.
20. Angenent LT, Kelley ST, St Amand A, Pace NR, Hernandez MT. 2005. Molecular identification of potential pathogens in water and air of a hospital therapy pool. Proc Natl Acad Sci U S A 102:4860–5.
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22. Ellis DG, Bizzoco RLW, Maezato Y, Baggett JN, Kelley ST. 2005. Microscopic examination of acidic hot springs of Waiotapu, North Island, New Zealand. New Zeal J Mar Freshw Res 39:1001–1011.
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101. Richard L, Bizzoco W, Kelley ST. 2020. Volcanic Steam Vents: Life at Low pH and High Temperature, p. 1–20. *In* Seckbach, J, Stan-Lotter, H (eds.), Extremophiles as Astrobiological Models. John Wiley & Sons, Hoboken, NJ, USA.
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104. Sisk-Hackworth L, Kelley ST. 2020. An application of compositional data analysis to multiomic time-series data. NAR Genomics Bioinforma 2:lqaa079.
105. McGhee JJ, Rawson N, Bailey BA, Fernandez-Guerra A, Sisk-Hackworth L, Kelley ST. 2020. Meta-SourceTracker: application of Bayesian source tracking to shotgun metagenomics. PeerJ 8:e8783.
106. Zhao D, Cardona C, Gottel N, Winton VJ, Thomas PM, Raba DA, Kelley ST, Henry C, Gilbert JA, Stephens B. 2020. Chemical composition of material extractives influences microbial growth and dynamics on wetted wood materials. Sci Rep 10:14500.
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108. Bendik J, Kalia R, Sukumaran J, Richardot WH, Hoh E, Kelley ST. 2021. Automated high confidence compound identification of electron ionization mass spectra for nontargeted analysis. J Chromatogr A 1660:462656.
109. Sau L, Olmstead CM, Cui LJ, Chen A, Shah RS, Kelley ST, Thackray VG. 2021. Alterations in Gut Microbiota Do Not Play a Causal Role in Diet-independent Weight Gain Caused by Ovariectomy. J Endocr Soc 5:1–11.
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111. Ho B, Ryback D, Benson B, Mason CN, Torres PJ, Quinn RA, Thackray VG, Kelley ST. 2021. Gut Metabolites Are More Predictive of Disease and Cohoused States than Gut Bacterial Features in a Polycystic Ovary Syndrome-Like Mouse Model. mSystems 6:e0114920.
112. Sisk-Hackworth L, Ortiz-Velez A, Reed MB, Kelley ST. 2021. Compositional

Data Analysis of Periodontal Disease Microbial Communities. Front Microbiol 0:846.

113. Marcroft TA, Rasmussen C, Kelley ST. 2023. Computing in Bioinformatics and Engaged Student Learning. J Coll Sci Teach 52:80–87.
114. Allsing N, Kelley ST, Fox AN, Sant KE. 2023. Metagenomic Analysis of Microbial Contamination in the U.S. Portion of the Tijuana River Watershed. 1. Int J Environ Res Public Health 20:600.
115. Rastegar K, Kelley ST, Thackray VG. 2023. Metagenome-Assembled Genomes from Murine Fecal Microbiomes Dominated by Uncharacterized Bacteria. Microbiol Resour Announc 0:e01162-22.
116. Sisk-Hackworth L, Kelley ST, Thackray VG. 2023. Sex, puberty, and the gut microbiome. Reprod Camb Engl 165:R61–R74.
117. Mason CN, Shahar S, Beals KK, Kelley ST, Lipson DA, Swingley WD, Barber NA. 2023. Taxonomic and functional restoration of tallgrass prairie soil microbial communities in comparison to remnant and agricultural soils. FEMS Microbiology Ecology 99:fiad120.
118. Sisk-Hackworth L, Brown J, Sau L, Levine AA, Tam LYI, Ramesh A, Shah RS, Kelley-Thackray ET, Wang S, Nguyen A, Kelley ST, Thackray VG. 2023. Genetic hypogonadal mouse model reveals niche-specific influence of reproductive axis and sex on intestinal microbial communities. Biology of Sex Differences 14:79.
119. Chen A, Handzel A, Sau L, Cui L, Kelley ST, Thackray VG. 2024 Metabolic dysregulation and gut dysbiosis linked to hyperandrogenism in female mice. Endocrinology, Diabetes & Metabolism 7:e443.
120. Shahar S, Sant KE, Allsing N, Kelley ST. 2024. Metagenomic analysis of microbial communities and antibiotic resistant genes in the Tijuana river, and potential sources. Environmental Pollution 342:123067.
121. Ortiz-Velez A, Kelley ST. 2024. Data-driven mathematical and visualization approaches for removing rare features for Compositional Data Analysis (CoDA). NAR Genomics and Bioinformatics 6:lqad110.
122. Ortiz-Velez AN, Sukumaran J, Rouzbehani R, Kelley ST. 2024. AutoPhy: Automated phylogenetic identification of novel protein subfamilies. PLOS ONE 19:e0291801.

Software Development (Kelley Lab)

Isolation by distance webs service: http://sourceforge.net/projects/ibdws/

ghost-tree: https://github.com/JTFouquier/ghost-tree

SourceTracker-Diagnostics: https://github.com/residentjordan/SourceTracker2-diagnostics

AutoPhy: https://github.com/aortizsax/autophy

CurvCut: https://github.com/aortizsax/curvcut

PyBootNet: https://github.com/Shayan-Akhavan/pybootnet

AncFlow: https://github.com/rrouz/AncFlow

SourceTracker-Mapping: https://github.com/andy6a/ST-Mapping

Textbooks

Kelley, S.T., and D. Didulo (2018) Computational Biology: A Hypertextbook. ASM Press, Washington, DC.

Textbook Entries

Figure 3.3 *In:* C.M. Herrera and O. Pellmyr. (2002) *Plant-Animal Interactions: An Evolutionary Approach*. Blackwell Publishing, Oxford, UK.

Special Topic 17.2 Phylogeny of a Shower Curtain Biofilm. I*n:* J.L. Slonczewski and J.W. Foster. (2009) *Microbiology: An Evolving Science*. New York: W.W. Norton & Company, Inc.

Citation (Ellis *et al.* 2008) and description of Halophiles in fumarole steam. *In:* Ohren, A. (2011) Ecology of Halophiles. *Extremophiles Handbook*. Horikoshi, K. (ed). New York: Springer, p. 346.

INSIDE COVER. *In*: J.L. Slonczewski and J.W. Foster. (2014) *Microbiology: An Evolving Science (3rd Edition).* New York: W.W. Norton & Company, Inc.

RESEARCH FUNDING

Current Research Grants

NIH R01 HD095412 Thackray (PI); Kelley (**SDSU Consortium PI**) 02/01/19-01/31/25 The Role of the Gut Microbiome in Polycystic Ovary Syndrome

NIH U54 MD012397 Ayala/Wells (PIs); Kelley (**Co-Investigator**) 07/01/24-06/30/29 SDSU HealthLINK Center for Transdisciplinary Health Disparities Research

NSF 2346371, Lipson (PI); Kelley (**Co-Investigator**) 04/24/24-03/31/27 Collaborative Research: Linking Microbial Social Interactions Within Soil Aggregate Communities to Ecosystem C, N, and P Cycling

Completed Research Grants

NIH R01 HD095412-01: Role of the Gut Microbiome in Polycystic Ovary Syndrome. **Consortium PI** (PI - Varykina Thackray).

NIH U54 MD012397-01A1: SDSU HealthLINK Center for Transdisciplinary Health Disparities Research. **Co-Leader** Research Infrastructure Core and Investigator Development Core. (PIs - Ayala/Wells).

USDA-NIFA: An investigation of the impacts of fruit on the gut microbiota and its metabolites: Connections to human health. **Co-Investigator** (PI – Shirin Hoosmand).

TRDRP 2017-2021. Effects of Thirdhand Smoke Exposure on the Microbiome of Young Children. **Co-Investigator** (PI - Georg Matt).

NSF 2016-2021. Engaged Student Learning: Interactive Bioinformatics Educational Apps for Mobile Technology. **PI**.

Alfred P. Sloan Foundation 2015-2019. Mechanistic modeling of microbial metabolic succession in the built environment. **Co-Investigator** (PI-Jack A. Gilbert).

Alexander Von Humboldt Extended Research Stay. 2015-2016. Development of bioinformatics analysis tools for Next-Generation Sequencing (NGS) studies of environmental fungal communities. **PI**.

University of California School of Medicine Microbiome Seed Grant. 2015-2016 **Co-Investigator** (PI-Varykina Thackray).

Alfred P. Sloan Foundation 2011-2016. Viral metagenomic analysis of workplace environments. **PI**.

California State University Program for Education and Research in Biotechnology (CSUPERB) 2015. Active Learning for Big Bio Data: Interactive Bioinformatics Educational Apps for Mobile Technology. **PI**.

NIH U26IHS300292 National Institutes of Health 2009-2014. R01: Oral flora, periodontitis, and vascular dysfunction in young Native Americans. **Co-Investigator** (PI-Calac, Project Leader - Roberta Gottlieb).

National Institutes of Health: American Recovery & Reinvestment Act 2009-2011. A Quality Assurance: Coordination and Analysis Center for HMP Administrative. **PI.**

National Science Foundation Assembling the Tree of Life (AToL) Proposal 2004-2007. The Deep Scaly Project: Resolving Squamate Phylogeny using Genomic and Morphological Approaches. **Senior Personnel-Bioinformatics**. (PI-Tod Reeder)

National Science Foundation Cyberinfrastructure Partnership (CIP) Teragrid Award 2008. Novel Application of Positional Weight Matrices for Transcription Factor Binding Site Discovery.

Department of Energy CSP 2008-2009. Development of comprehensive EST sequence library for the tree-killing southern pine beetle, *Dendroctonus frontalis*. **PI**.

Alfred P. Sloan Foundation 2012-2014. Modeling Establishment of Microbial Communities Over Time on Different Office Surface Materials in Different Climates. **Co-Investigator** (PI-J. Greg Caporaso).

Clorox Corporation Research Award 2011-2014. Periodontal therapy using a diluted sodium hypochlorite mouth rinse. **PI**.

Clorox Corporation Research Award 2004-2009. Microbial diversity in the arena of public health. **PI**.

Alexander Von Humboldt Fellowship for Experienced Researchers 2008-2011. Effects of evolutionary history, host-plant use and secondary chemistry on gut microbial community diversity of *Longitarsus* flea-beetles. **PI**.

Max Planck Institute, Germany 2009. Genome sequencing of the bacterial endosymbiont of two cocoon-forming leaf beetles (Chrysomelidae: Donaciinae). **Co-PI** (PI-Gregor Koelsch).

California State University Program for Research in Biotechnology (CSUPERB) Award 2003. Development of Bark Beetle Biocontrol. **PI**.

California State University Program for Education and Research in Biotechnology (CSUPERB) Award 2006. Design and Development of Broad-Spectrum Bacterial Vaccine. **PI**.

Wildlife Domestic Animal Disease Research Award 2003. Evolutionary Genetics and Virulence of *Pasteurella haemolytica* and *P. trehalosi* in Wild and Domestic (*Ovis*) Sheep and Domestic Goats (*Capra*). **PI**.

Wildlife Domestic Animal Disease Research Award 2003. Non-culture Detection of *Pasteurella* Bacteria in Bighorn and Domestic Sheep. **PI**.

Internal Grants (SDSU)

Research and Scholarly Creative Activity Award 2002. Effects of Bark Beetle Ecology and Behavior on Symbiotic Microbial Diversity. **PI**.

Faculty Grants-in-Aid of Research Award 2002. Approaches for Improving RNA Structure Prediction, Sequence Alignment and Phylogenetic Analysis: An Iterative Approach. **PI**.

Research and Scholarly Creative Activity Award 2003. Connecting pattern to process: The effects of host-plant use on species diversification in bark beetles. **PI**.

AWARDS AND HONORS

1996-1999	NSF Dissertation Research Award 9623763 Evolution of Resource Specialization in the Bark Beetle Genus *Dendroctonus*.
1999-2002	NIH National Research Service Award F32GM020013 Computational methods for molecular structure prediction.
2005-2006	Outstanding Faculty Service Award, Mortar Board National Honor Society, SDSU Chapter
2009-2011	Alexander von Humboldt Research Fellowship for Experienced Researchers, Germany
2015-2016	Alexander Von Humboldt Extended Research Stay, Germany
2019	Outstanding Faculty (Teacher-Scholar) Award, Department of Biology, San Diego State University

PROFESSIONAL ACTIVITIES

Professional Societies
American Society for Microbiology (Since 2003)
Southern California Chapter of the American Society for Microbiology (Since 2021)
Board of Directors, American Friends of the Alexander von Humboldt Research Foundation (Since 2010)

Scientific Advisory Board Member
Clorox Corporation

Peer Review

Journal Review
Addiction Biology
AMB Express
Annals of the Entomological Society of America
Biological Journal of the Linnaean Society
BMC Bioinformatics
BMC Microbiology
BMC Oral Biology
Environmental Microbiology
Environmental Microbiome
FEMS Microbiology Letters
Frontiers in Microbiology
Genome Biology
Hereditas
Indoor Air
International Society Molecular Ecology (ISME)
Intelligent Systems for Molecular Biology (ISMB)
Journal of Applied Entomology
Journal of Applied Microbiology
Journal of Clinical Microbiology
Journal of Molecular Evolution

Journal of Oral Microbiology
Journal of Wildlife Diseases
Microbial Ecology
Microbiome
Molecular Ecology
mSystems
National Academy of Engineering (Microbiomes and the Built Environment)
Nature Biotechnology
Nature Communications
Nature Sustainability
NPJ Biofilms and Microbiomes
Nucleic Acids Research
Proceedings of the National Academy of Sciences
Public Library of Science (PLoS) ONE
Psyche
RNA
Scientific Reports

Grant Reviews
California State University Program for Research in Biotechnology (CSUPERB), Ad-hoc Reviewer, 2005
California State University Program for Research in Biotechnology (CSUPERB), Grant Panel 2006
National Institutes of Health, National Institute of General Medical Sciences, SCORE Program, 2007
National Science Foundation, Division of Environmental Biology, Ecological Biology Cluster, Ad-hoc Reviewer, 2007
National Science Foundation, International Research Fellowship Program, Ad-hoc Reviewer, 2007
National Science Foundation, Emerging Frontiers Program, Ad-hoc Reviewer, 2008
National Science Foundation, Division of Environmental Biology, Ad-hoc Reviewer, 2009
National Science Foundation, Systematic Biology and Biodiversity Inventories, Ad-hoc Reviewer, 2010
TEDDY (The Environmental Determinants of Diabetes in the Young) Microbiome and Viral Metagenomics Lab Proposal Review, Committee Member, 2012
Research Council for Natural Sciences and Engineering, Academy of Finland, 2014
Fulbright Research Scholarship, 2014
Austria Science Fund, Ad-hoc Reviewer, 2015
California State University Program for Research in Biotechnology (CSUPERB), Grant Panel 2016
Science Foundation Ireland, SFI-IRC Pathway Programme, Reviewer, 2021
Science Foundation Ireland, SFI-IRC Pathway Programme, Reviewer, 2022
SDSU Healthlink Project Proposal Review Panel, Grant Panel, 2022

Media Coverage

Interviewed in New York Times Science Section article, "It's Wild vs. Domestic Sheep as Groups Lock Horns Over Grazing Area", Sept. 20, 2005
Newspaper article on research in San Diego Union - Tribune entitled, "Shower study finds what's been lurking behind the curtain", May 2, 2004
Interviewed by local TV news stations about research, May 2004
Article on research in San Diego State publication, SDSUniverse, entitled, "Pulling Back Shower Curtains Reveals Microbial Mayhem", May 3, 2004
Newspaper article on research in San Diego Union - Tribune entitled, "Germs hitch ride in plane bathrooms", Dec 26, 2005
Featured Article, San Diego State University Web Site entitled, "Germ Hunters: Searching for bugs that harm and help", June 2007
Interviewed by local Fox TV affiliate about office bacterial contamination, Sept. 30, 2009
Interviewed by Medstar TV on "5-second Rule", February, 2010
Interviewed by San Diego Union-Tribune, December 2010
Worldwide Media Coverage of Hewitt et al. (2012) PLoS ONE Article: Television: CBC (Canada). Radio: NPR, New Zealand, Germany, USA (San Francisco, Sacramento). Print/Internet: Hundreds of stories including pieces in the New York Times, Time Magazine, ABC News, International Business Daily (UK), The Telegraph (India), Der Spiegel (Germany), The Irish Independent (Ireland), YNet (Israel), Associated Press (USA), The Canadian Press (Canada), Sydney Morning Herald (Australia).
Featured Article, San Diego State University Web Site entitled, "Saving African Elephants", December 2013
The Daily Aztec, "SDSU researcher examines link between gut bacteria and metabolic disease", March 2016
National and International Media Coverage of Chase et al. (2016) mSystems Article: NPR, Newsweek, US News & World Report, Washington Post, Daily Mail (UK), NBC, UPI, World Tech Today, The Onion. April 2016
Illumina Webinar on "Characterization of the salivary microbiome in patients with pancreatic cancer", April 2016. 601 registrants, 269 attendees from 27 countries.
Featured Paper, An Endrocrine Society Thematic Issue: Women in Science 2019. https://academic.oup.com/endocrinesociety/pages/thematic_issue_women_in_endocrinology_2019
Paper "Gut Bacterial Composition Correlates with an Improved PCOS Phenotype after Co-Housing," singled it out for special media attention at annual Research Summaries Book (RSB), ENDO 2019
Research highlighted in Neuroscience News: "Like A Lot of Things, Women's Gut Microbiomes Appear to Mature Earlier than Men's." May 2019.
Interview for article in Clinical Lab Manager: "Microbiome Profiling Could Improve Early Pancreatic Cancer Diagnosis." Sept, 2020.
https://www.clinicallabmanager.com/trends/cancer-diagnostics/microbiome-profiling-could-improve-early-pancreatic-cancer-diagnosis-23693

Other Professional Activities

Organizer, University of Colorado Department of Environmental, Population and Organismal Biology Seminar Series

Member, Biotechnology Board of Directors, High Tech High School of San Diego
Invited Advisor, Respiratory Disease in Mountain Sheep: Knowledge Gaps and Future Research, University of California, Davis, Spring 2007
Instructor, NIH Program Bridges to the Future: Transition program for minority students entering SDSU from local community colleges.
Instructor, NSF Program: SDSU Mathematics Research Experience for Undergraduates and Teachers. Summer 2007
Instructor, NSF Program: Cyberbridge - Collaborative project between University of California, San Diego and San Diego State University to expand use of media and cyber-infrastructure in K-12 science classrooms. Summer 2008
Organizer, Virtual seminar series at SDSU: International Sofa Seminar Series, Spring 2020 and 2021 .
Organizer, Virtual CSU Bioinformatics Seminar Series, Fall 2023

INVITED SPEAKER

San Diego State University, Fall 2002
University of California, San Diego, Spring 2003
Biosymposium, San Diego State University, Spring 2004
Department of Biology, University of California, San Diego, Spring 2006
Conservation and Research for Endangered Species (CRES), San Diego, Spring 2006
Michael Smith Laboratories, University of British Columbia, Summer 2006
Pace Symposium, University of Colorado, Boulder, Fall 2007
Centre for Microbial Diversity & Evolution, University of British Columbia, Spring 2008
University of Hamburg, Germany, Spring 2009
University of California, Riverside, Spring 2010
Cornell University, Summer 2010
University of Colorado, Boulder, Fall 2010
11th Annual Thermophiles Conference, Big Sky, Montana, Fall 2011
Rice University, Spring 2012
13th Meeting Genomic Standards Consortium, Shenzhen, China, Spring 2012
Preliminary Meeting of the Hospital Microbiome Project, U. Chicago, Summer 2012
First Annual Conference on the Microbiology of the Built Environment, Summer 2013
Clorox Corporation Scientific Advisory Board, San Francisco, California, Fall 2013
AAAS: Microbiomes in the Built Environment, Washington D.C., Spring 2014
MVCAC Laboratory Technologies Workshop, San Diego, California, Spring 2014
Second Annual Conference on the Microbiology of the Built Environment, Summer 2014
San Diego Medical Genomics Summit, Carlsbad, California, Summer 2015
Third Annual Conference on the Microbiology of the Built Environment, Summer 2015
University of British Columbia, Okanagan, Fall 2015
Northern Arizona University, Spring 2016
St. Paul's Cathedral San Diego, Forum on Science and Religion, Spring 2016
Max Planck Institute for Marine Microbiology, Bremen, Germany, Summer 2016
Microbiology 2016 Virtual Conference, Fall 2016

National Academies of Sciences, Engineering and Medicine, Microbiomes of the Built Environment: From Research to Application, Fall 2017
Keynote Speaker at ISCA 26th International Conference on Software Engineering and Data Engineering, Fall 2017
Max Planck Institute for Developmental Biology, Tuebingen, Germany, Summer 2018
Presentation to Bioinformatics Group on Sourcetracker, Max Planck Institute for Developmental Biology, Tuebingen, Germany, Summer 2018
Presentation to Germ Free Mouse Facility on Bacteria in Built Environments, Max Planck Institute for Developmental Biology, Tuebingen, Germany, Summer 2018
Alfred P. Sloan Foundation Workshop on Viruses and the Built Environment, Arlington, Virginia, Spring 2019
American Association for Dental Research (AADR), Fall Focused Symposium (FFS) J. Craig Venter Institute (JCVI), La Jolla, California, Fall 2019
Research Frontiers and Grand Challenges in Microbial Eukaryote -Omics Workshop, University of California, San Diego, La Jolla, California, Fall 2019
CSU-NSF Improving Undergraduate Science Education (IUSE) Program Exemplars Webcast, California, Spring 2021
THS (National) Research Consortium Webinar: Microbiome, Spring 2021
Gordon Research Conference on Microbiology of the Built Environment, Waterville Valley, NH (USA), Summer 2022 –> Had to decline due to COVID-19 and my autoimmune status (kidney transplant immune suppression).
CSU East Bay, Polycystic Ovary Syndrome and the Gut Microbiome, Spring 2022
Cal Poly Humboldt, Dr. SourceTracker: or How I learned to stop worrying and love the computer, Fall 2022
Association of Public Health Laboratories Conference, Sacramento, CA, Spring 2023
Multi-Agency Meeting (EPA, San Diego County, SCCWRP), Online, Spring 2023

SYMPOSIUM ORGANIZATION

1st International Sofa Seminar Series (Virtual), Spring 2020. Arranged full seminar series featuring local, national, and international speakers.

2nd International Sofa Seminar Series (Virtual), Spring 2021. Arranged full seminar series featuring local, national, and international speakers.

CSU Virtual Bioinformatics Seminar Series, Fall 2023. Arranged full seminar series featuring speakers from across the California State University system.

CSU Virtual Bioinformatics Seminar Series, Fall 2023. Co-hosted full seminar series featuring speakers from across the California State University system.

PRESENTATIONS AT SCIENTIFIC MEETINGS (SINCE 2004)
(*Indicates presenter)

S. T. Kelley*, E. F. Cassirer, G. C. Weiser, and S. Safaee. (2004) Phylogenetic Diversity of Pasteurellaceae and Horizontal Gene Transfer of Leukotoxin in Wild and Domestic

Sheep and Domestic Goats. Society for the Study of Evolution Annual Meeting, Fort Collins, Colorado. Oral Presentation.

Holzman, J.* and **S.T. Kelley**. (2004) Direct comparison of microsatellites and ISSRs for assessing genetic structure of palm beetles. Society for the Study of Evolution Annual Meeting, Fort Collins, Colorado. Poster Presentation.

S. T. Kelley*, E. F. Cassirer, G. C. Weiser, and S. Safaee. (2004) Phylogenetic Diversity of Pasteurellaceae and Horizontal Gene Transfer of Leukotoxin in Wild and Domestic Sheep and Domestic Goats. American Society of Microbiology General Meeting, New Orleans, Louisiana. Poster Presentation. Poster Presentation.

Safaee, S., G.C. Weiser, E.F. Cassirer, C. McManus and **S.T. Kelley***. (2005) Culture-independent analysis of microbial diversity in bighorn sheep respiratory tracts. American Society of Microbiology Conference on the Pasteurellaceae, Kohala Coast, Big Island, Hawaii. Poster Presentation.

Ellis, D.*, R. Bizzoco and **S.T. Kelley.** (2005) Sampling acidic thermal springs in Yellowstone National Park. American Society of Microbiology General Meeting, Atlanta, Georgia. Poster Presentation.

Mathur, J.*, R. Bizzoco, D. Ellis and **S.T. Kelley.** (2005) The effects of environmental and evolutionary forces on microbial diversity in acidic thermal springs. American Society of Microbiology General Meeting, Atlanta, Georgia. Poster Presentation.

Safaee, S., G.C. Weiser, E.F. Cassirer, R.R. Ramey and **S.T. Kelley***. (2005) Culture-independent analysis of microbial diversity in bighorn sheep respiratory tracts. American Society of Microbiology General Meeting, Atlanta, Georgia. Poster Presentation.

Kelley, S.T.* (2006) Microbial diversity of *Dendroctonus* bark beetles. Third Workshop on Genetics of Bark Beetles, Asheville, North Carolina. Oral Presentation.

Ellis, D., R. Bizzoco and **S.T. Kelley.*** (2007) Halophilic Archaea isolated from geothermal steam vents. Gordon Research Conference: Archaea: Ecology, Metabolism & Molecular Biology, Proctor Academy, Andover, New Hampshire. Poster Presentation.

Tin, S., R.W. Bizzoco and **S.T. Kelley***. (2008) Evidence for deep subsurface sources and geographic isolation in geothermal microbial communities. 3rd Annual Research Coordination Network, Yellowstone National Park. Poster Presentation.

Kelley, S.T.* and S. Dobler. (2009) Effects of host-plant use and secondary chemistry on insect gut microbial diversity. Network Meeting of the Alexander von Humboldt Foundation Bonn, Germany. Poster Presentation.

Kelley, S.T.* and S. Dobler. (2009) Effects of host-plant use and secondary chemistry on insect gut microbial diversity. Symposium: Communication and Host-Microbe Interactions. Universität Osnabrück, Germany. Oral Presentation.

Hewitt, K., Mannino, F.L., Hamady, M. Knight, R. and **S.T. Kelley***. (2009) High-throughput sequencing reveals extensive bacterial diversity in Newborn Intensive Care Units. FEMS, Gothenburg, Sweden. Poster Presentation.

Kelley, S.T.* and S. Dobler. (2010) Influence of evolutionary history and host-plant chemistry on the flea beetle gut microbiome. San Diego Microbiology Group Annual Meeting, University of California, San Diego. Oral Presentation.

Rodriguez-Mueller, B.* and **S.T. Kelley** (2010) Phylogenetic Approach to Improving the Annotation of Membrane Proteins. American Society of Microbiology, San Diego. Poster Presentation.

Benson, C.*, Bizzoco, R. and **S.T. Kelley** (2010) Archaeal diversity in geothermal steam vents. American Society of Microbiology, San Diego. Poster Presentation.

Schwarzberg, K.*, Saber, M., Alonaizan, F., Furlan, M., Slots J., and **S.T. Kelley** (2011) Endodontic Infections: A Metagenomics Approach, San Diego Microbiology Group, Poster Presentation.

Cornell, J.B.*, Wall, K.M., Bizzoco, R. and **S.T. Kelley** (2011) Using a Phylogenetic Statistics-based Approach to Determine the Source of Extremophile Microbial Communities, San Diego Microbiology Group. Poster Presentation.

Rodriguez-Mueller, B.* and **S.T. Kelley** (2011) Fine-grained metabolic functional diversity across human samples, San Diego Microbiology Group. Poster Presentation.

J.B. Cornell*, K.M. Wall, R.W. Bizzoco, and **S.T. Kelley** (2011) Determining the Origin of Extremophile Microbial Communities: New Insight Using a Phylogenetic-based Statistics Approach. American Society of Microbiology - Southern California Chapter, La Jolla, CA. Poster Presentation.

K. Schwarzberg*, M. Saber, F. Alonaizan, M. Furlan, J. Slots and **S. T. Kelley** (2011) Bacteria Associated with Endodontic Infections. American Society of Microbiology - Southern California Chapter, La Jolla, CA. Poster Presentation.

J.B. Cornell*, K.M. Wall, R.W. Bizzoco, and **S.T. Kelley** (2011) Extremophile Microbial Communities: Where do they come from? A Phylogenetic Approach. Society for the Study of Evolution, Norman, Oklahoma. Poster Presentation.

J.B. Cornell*, K.M. Wall, R.W. Bizzoco, and **S.T. Kelley** (2011) Using a Phylogenetic Statistics-based Approach to Determine the Source of Extremophile Microbial Communities. San Diego Microbiology Group, La Jolla, California. Poster Presentation.

K. Schwarzberg*, M. Saber, F. Alonaizan, M. Furlan, J. Slots and **S.T. Kelley** (2012) Bacteria Associated with Endodontic Infections. Student Research Symposium, San Diego State University, California. Poster Presentation.

J.B. Cornell*, K.M. Wall, R.W. Bizzoco, and **S.T. Kelley** (2012) Determining the Origin of Extremophile Microbial Communities: New Insight Using a Phylogenetic-based Statistics Approach. Division of Research Affairs - San Diego State University, San Diego, California. Poster Presentation.

Kelley, S.T.* (2012) The Indoor Virome: Bacterial and viral metagenomic approaches for studying the Built Environment. The 13th Workshop of the Genomic Standards Consortium, Shenzhen, China. Oral Presentation.

Schwartz, T.* J. Gilbert, and **S.T. Kelley** (2012) Temporal Dynamics of Bacterial and Viral Communities in Public Restrooms. San Diego Microbiology Group. Poster Presentation.

Schwartz, T.* J. Gilbert, and **S.T. Kelley** (2012) Temporal Dynamics of Bacterial and Viral Communities in Public Restrooms. American Society of Microbiology, San Francisco. Poster Presentation.

Le, R.*, K. Schwarzberg, M. Furlan, J. Slots, and **S.T. Kelley** (2012) Identification of Eukaryotic Viruses in the Oral Cavity Using Density Gradient Centrifugation and Virochip Analysis. American Society of Microbiology, San Francisco. Poster Presentation.

Schwarzberg, K.*, R. Le, B. Bharti, R. Gottlieb, and **S.T. Kelley** (2012) Association Between Microbial Diversity in Periodontal Disease and Vascular Function American Society of Microbiology, San Francisco. Poster Presentation.

Fletcher, E.*, P.J. Torres*, **S.T. Kelley**, K.S. Doran. (2012) Analysis of Oral Microbiota in Human Cancer Subjects. CSUPERB, Anaheim. Poster Presentation

Torres, P.J.*, E. Fletcher, K.S. Doran, **S.T. Kelley**. (2012) Analysis of Oral Microbiota in Human Cancer Subjects. San Diego Microbiology Group, San Diego. Poster Presentation.

Torres, P.J.*, E. Fletcher, M. Watcher, **S.T. Kelley**, M. Bouvet, K.S. Doran. (2013) Analysis of Oral Microbiota in Human Cancer Subjects. U54 Annual Poster Presentation, San Diego. Poster Presentation.

Torres, P.J.*, E. Fletcher, M. Watcher, M. Bouvet, K.S. Doran, **S.T. Kelley**. (2013) Analysis of Oral Microbiota in Human Cancer Subjects. Southern California American Society of Microbiology, San Diego. Poster Presentation.

Torres, P.J.*, E. Fletcher, M. Watcher, M. Bouvet, **S.T. Kelley**, K.S. Doran. (2013) Analysis of Oral Microbiota in Human Cancer Subjects. San Diego Microbiology Group, San Diego. Poster Presentation.

Cohen, C.*, M. Galban, S. Gonzalez, B. Le, I. Wu, S. Owens, S. Gibbons, M. Paine, S. Rich, **S.T. Kelley** and J. Slots (2013) Illumina® Sequencing Differences Between Supragingival and Subgingival Plaque In Periodontitis. 2013 USC Herman Ostrow School of Dentistry Research Day, University of Southern California. Poster Presentation.

Kelley, S.T. * (2013) Virus tracking and persistence in indoor environments. The Second Annual Conference on the Microbiology of the Built Environment. University of Colorado, Boulder. Oral Presentation.

Fouquier, J.*, T. Schwartz, **S.T. Kelley** (2013) The Public Restroom Mycobiome. The Second Annual Conference on the Microbiology of the Built Environment. University of Colorado, Boulder. Poster Presentation.

Fouquier, J.*, T. Schwartz, **S.T. Kelley** (2014) The Public Restroom Mycobiome. CSU Biotechnology Symposium, Santa Clara, CA. Poster Presentation.

Mahnaz, Z.*, J. Caporaso, J. Chase, **S.T. Kelley**, J. Fouquier, J. Siegel (2014) Impact of Building Science Parameters on Fungal Communities on Indoor Surfaces. Indoor Air 2014, Hong Kong, China. Poster Presentation.

Fouquier, J.T.*, T.M. Schwartz, M.Q. Mitchell, **S.T. Kelley** (2014) American Society of Microbiology General Meeting, Boston, MA. Characterizing the Public Restroom Mycobiome Using the Internal Transcribed Spacer. Oral presentation.

Fouquier, J.T.*, M.Q. Mitchell, T.M. Schwartz, **S.T. Kelley** (2014) San Diego State University Student Research Symposium, San Diego, CA. Characterizing the Public Restroom Mycobiome Using the Internal Transcribed Spacer. Oral presentation.

Mitchell, M.Q.*, J.T. Fouquier, J. Bell, T.M. Schwartz, **S.T. Kelley** (2014) San Diego State University Student Research Symposium, San Diego, CA. Bacterial Growth Patterns in a Public Restroom Environment. Oral presentation.

Torres, P.J.*, E. Fletcher, K.S. Doran, **S.T. Kelley** (2014) American Society of Microbiology General Meeting, Boston, MA. Characterization of the Oral Microbiome in Patients with Pancreatic Cancer. Poster Presentation.

Torres, P.J.*, E. Fletcher, K.S. Doran, **S.T. Kelley** (2014) San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.

Fouquier, J.T.*, **S.T. Kelley** 27th Annual California State University Biotechnology Symposium (CSUPERB), Santa Clara, CA. Exploring the Unseen World of Fungal

Biodiversity: A Hybrid-Gene Bioinformatics Approach to Creating Phylogenetic Trees. Poster presentation.

Didulo, D.*, **S.T. Kelley** (2015) 27th Annual California State University Biotechnology Symposium (CSUPERB), Santa Clara, CA. Mobile Bioinformatics Training Apps for Biotechnology. Poster Presentation.

Torres, P.J.*, E. Fletcher, K.S. Doran, **S.T. Kelley** (2015) 27th Annual California State University Biotechnology Symposium (CSUPERB), Santa Clara, CA. Characterization of the Oral Microbiome in Patients with Pancreatic Cancer. Poster Presentation.

Kelley, S.T. and V.G. Thackray (2015) San Diego Medical Genomics Summit, Carlsbad, CA. Letrozole treatment alters the gut microbiome in a polycystic ovary syndrome mouse model. Oral Presentation.

Fouquier, J.T., J. R. Rideout, E. Bolyen, J. Chase, A. Shiffer, D. McDonald, R. Knight, J. G. Caporaso and **S.T. Kelley*** (2015) ghost-tree: creating hybrid-gene phylogenetic trees for diversity analyses. The Fourth Annual Conference on the Microbiology of the Built Environment. University of Colorado, Boulder. Poster presentation.

Kosnicki, K.*, A. Zuazo, J. Penprase, P. Cintora, O. Medrano, D. Erwin, S.M. Brasser, G.L. Harris, **S.T. Kelley** (2015) The 4th Annual Conference on the Microbiology of the Built Environment, Boulder, CO, Alcohol Consumption and Its Effect on the Gut Microbiome. Poster Presentation.

Kosnicki, K.*, A. Zuazo, J. Penprase, P. Cintora, O. Medrano, D. Erwin, S.M. Brasser, G.L. Harris, **S.T. Kelley** (2015) Southern California American Society for Microbiology Annual Meeting, La Jolla, CA, Alcohol Consumption and Its Effect on the Gut Microbiome. Poster Presentation.

Kelley, S.T., Skarra, D.V., Rivera, A.J., and Thackray, V.G.* (2016) The Gut Microbiome Is Altered in a Letrozole-Induced Mouse Model of Polycystic Ovary Syndrome. The Endocrine Society Annual Meeting. Boston, Massachussets. Oral Presentation.

Torres P.J.*, Skarra D.V., Anvar A.R, **Kelley S.T.**, and V.G. Thackray (2016) Puberty Is Important to Fully Develop the PCOS Metabolic Phenotype. 80th Annual Meeting of the Southern California American Society for Microbiology, La Jolla., CA. Poster Presentation.

Torres P.J.*, Skarra D.V., Anvar A.R, Kelley S.T., and V.G Thackray (2016) Puberty Is Important for Development of the Polycystic Ovary Syndrome Metabolic Phenotype in Female Mice. UCSD Center for Microbial Innovation Changing Microbiomes for Health Symposium, La Jolla, CA. Poster Presentation.

Prathik K Vijay Kumar*, Roberta A. Gottlieb, Suzanne Lindsay, Nicole Delange, Tanya E. Penn, Dan Calac, **S.T. Kelley.** (2016) Metagenomic analysis uncovers strong relationship between periodontal pathogens and vascular dysfunction in American Indian/Alaskan Native (AIAN) population. 80th Annual Meeting of the Southern California American Society for Microbiology, La Jolla, CA. Poster Presentation.

Prathik K Vijay Kumar*, Roberta A. Gottlieb, Suzanne Lindsay, Nicole Delange, Tanya E. Penn, Dan Calac, **S.T. Kelley** (2017) Metagenomic analysis uncovers strong relationship between periodontal pathogens and vascular dysfunction in American Indian/Alaskan Native (AIAN) population. 29th Annual California State University Annual Biotechnology Symposium, Santa Clara, CA. Poster Presentation.

Tandon, R.*, C. Smurthwaite, and **S.T. Kelley**. (2018) Analysis of microbial community dynamics on building materials using flow cytometry. Seventh Annual SoCal Flow SUMMIT 2018, Beckman Center, UC Irvine, CA. Oral Presentation. *Excellence in Cytometry award.*

Pinkowski, P.*, K.L. Kosnicki, J.C. Penprase, P. Cintora, P.J. Torres, G.L. Harris, **S.T. Kelley**, S.M. Brasser (2018) Effects of moderate voluntary ethanol consumption on the rat and human gut microbiome. 41st Annual Research Society on Alcoholism Scientific Meeting, San Diego, CA. Poster Presentation.

Tandon, R.*, C. Ancheta, C. Smurthwaite, and **S.T. Kelley**. (2019) Quantitative and FACS analysis of bacterial and fungal communities in indoor environment. 31st Annual California State University Annual Biotechnology Symposium, Orange County, CA. Poster Presentation.

Pablo Arroyo*, Bryan S. Ho, Lillian Sau, **S.T. Kelley**, Varykina G. Thackray (2019) Is hyperandrogenism associated with PCOS organizational or activational?. 31st Annual California State University Annual Biotechnology Symposium, Garden Grove, CA. Poster Presentation.

Richa B. Sharma*, Eunha Hoh, **S.T. Kelley**, Nathan Dodder, William Richardot (2019) Automation of ChromaTOF and software development for non-targeted analysis of contaminants. 31st Annual California State University Annual Biotechnology Symposium, Orange County, CA. Poster Presentation.

Thackray, V.G.*, Torres, P.J., Ho, B., Arroyo, P., Sau, L., Chen, A., and **S.T. Kelley** (2019) Gut Bacterial Composition in a Mouse Model Correlates with an Improved PCOS Phenotype After Co-Housing. 101th Annual Meeting of The Endocrine Society, New Orleans, LA. Oral Presentation.

Ying Xu, Ruby Tandon*, Chrislyn Ancheta, Pablo Arroyo, Cameron Smurthwaite, Jack A Gilbert, Brent Stephens, and **Scott T. Kelley** (2020) Quantitative Assessment of Indoor Microbial Communities. CYTO 2020. 35th Annual Conference of ISAC. Philadelphia, PA. Poster Presentation.

Matt, G.E.*, **Kelley, S.T.**, Quintana, P.J.E., Hoh, E., Zakarian, J.M., Dodder, N., Liu, W., Barrowcliff, S. (2020) Effects of Thirdhand Smoke on the Environmental and Human Microbiomes in Young Children. California Tobacco Control Program (CTCP), Tobacco-Related Disease Research Program (TRDRP), and the Office of Tobacco-Use Prevention Education (TUPE). Joining Forces 2020: Ending The Tobacco Epidemic For All. June 15-18, 2020, in Palm Desert, CA

Sisk-Hackworth, L.* and **S.T. Kelley** (2021) The role of puberty, steroid hormones and bile acids on the gut microbiome. Viral Information Institute Annual Meeting, San Diego, CA. Oral Presentation.

Ogden, S.M.*, Malcarne, V., Sadler, G. R., Nguyen-Grozavu. F. and **Kelley, S.T.** (2021) The gut microbiome and polycystic ovarian syndrome: relationship to endometrial cancer deaths in African American women. Annual Summer Research Conference UC San Diego, San Diego, CA. Oral Presentation.

Ortiz-Velez, A.*, Sukumaran, J., and **Kelley S.T.** (2021). Automatic clustering of phylogenetic trees and identification of alignment positions for hypothesis testing. 85th Annual Meeting of the Southern California American Society for Microbiology, La Jolla., CA. Poster Presentation.

Sisk-Hackworth, L.*, Thackray V.G., and **Kelley S.T.** (2021). The Role of Puberty in the Maturation of the Gut Microbiome. 85th Annual Meeting of the Southern California American Society for Microbiology, La Jolla., CA. Oral Presentation.

Ortiz-Velez*, A., Sukumaran J., and **S.T. Kelley** (2021) Automatic clustering of phylogenetic trees. San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.

Sisk-Hackworth, L.*, and **S.T. Kelley** (2021) The role of puberty in the maturation of the gut microbiome. San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.

Sisk-Hackworth, L.*, Ogden S., Brown J., Thackray V.G. and **Kelley S.T.** (2022). β-glucuronidase activity in murine gut microbiota. San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.

Ogden, S.*, Sisk-Hackworth L., Thackray V.G., and **S.T. Kelley** (2022) Analysis of β-glucuronidase, β-galactosidase, and α-galactosidase on eight bacteria. San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.
Ortiz-Velez, A.*, Sukumaran J., and **S.T. Kelley** (2022) Clust-Tree: an automatic partitioning of phylogenetic tree and identification of unique MSA features. San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.

Allsing, N.*, Sant K., and **S.T. Kelley** (2022) A Characterization of the Microbes and Viruses Present in the Tijuana River and Estuary to Elucidate Potential Pathogens. San Diego State University Student Research Symposium, San Diego, CA. Oral Presentation.

Sisk-Hackworth, L.*, Ogden S., Brown J., Thackray V.G. and **S.T. Kelley** (2022). β-glucuronidase activity in murine gut microbiota. ASM Microbe 2022, Washington, D.C. Poster Presentation.

Shahar, S. *, Allsing, N., Sant, K., and **S.T. Kelley** (2023) Characterization of Metagenomes and Pathogen Identification of the Tijuana River. San Diego State University Student Research Symposium, San Diego, CA. Poster Presentation.

Nannini, K. *, Ortiz-Velez, A., Ogden, S. Terrezas, F., Brown, J., Barber, N. and **S. T. Kelley** (2023) The Effect of Site Productivity and Disturbance on Microbial Compositions in the Built Environment. San Diego State University Student Research Symposium, San Diego, CA. Poster Presentation.

Levine, A. * and **S. T. Kelley** (2023) Environmental Source-Tracking with Metabolomic Data. San Diego State University Student Research Symposium, San Diego, CA. Poster Presentation.

Ogden, S. *, Sisk-Hackworth, L., Thackray, V., and **S.T. Kelley** (2023) β-Glucuronidase Activity in the Gut Microbiome: Relationship to Sex and HPG Axis. San Diego State University Student Research Symposium, San Diego, CA. Poster Presentation.

Sisk-Hackworth, L. *, Sau, L., Brown, J., Tam, I., Ramesh, A., Thackray, V.G., and **S.T. Kelley** (2023) The effect of the reproductive axis in the gut microbiome. San Diego State University Student Research Symposium, San Diego, CA. Poster Presentation.

Nannini, K. *, Ortiz-Velez, A., Ogden, S. Terrezas, F., Brown, J., Barber, N., and S. T. Kelley (2023) The Effect of Site Productivity and Disturbance on Microbial Compositions in the Built Environment. SDSU HealthLINK Center Symposium, San Diego, CA. Poster Presentation.

Shahar, S., Allsing, N., Sant, K., and **S.T. Kelley*** (2023) Application of meta-SourceTracker for tracking pollution in the Tijuana River. Association of Public Health Laboratories, Sacramento, CA. Oral Presentation.

Shahar, S., Allsing, N., Sant, K., and **S.T. Kelley*** (2023) Application of meta-SourceTracker for tracking pollution in the Tijuana River. Association of Public Health Laboratories, Sacramento, CA. Oral Presentation.

Shahar, S., Allsing, N., Sant, K., and **S.T. Kelley*** (2023) Application of meta-SourceTracker for tracking pollution in the Tijuana River. CSU Virtual Bioinformatics Seminar Series, Oral Presentation.

L. Sisk-Hackworth*, L. Sau, J. Brown, L.Y.I. Tam, A. Ramesh, R.S. Shah, E.T. Kelley-Thackray, S. Wang, A. Nguyen, V.G. Thackray, and **S.T. Kelley** (2023) Influence of the HPG axis on sexual differentiation of the gut microbiome. Southern California branch of the American Society for Microbiology 87th Annual Meeting, La Jolla, CA. Poster and Oral Presentation.

S. Akavan and **S.T. Kelley*** (2024) PyBootNet, A python package for bootstrapping and network construction. CSU Virtual Bioinformatics Seminar Series, Oral Presentation.

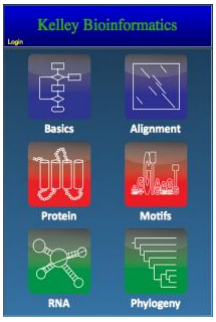
TEACHING

Courses

Biology 668, Advanced Biological Data Analysis, Spring 2017-present
Biology 568, Bioinformatics Lecture, Spring 2004-2007, Fall 2009-present
Biology 568, Bioinformatics Lab, Spring 2004-2007, Fall 2009-present
Biology 350, General Microbiology, Fall 2007, Fall and Spring 2009-2015
Biology 600, Seminar in Molecular Biology, Fall 2007, Spring 2010-2015
Biology 601, Graduate Seminar Molecular and Cellular Biology, Fall 2007, Spring 2010
Biology 100, Non-majors general biology Fall 2004-2006
Biology 567, Biochemistry, Cell and Molecular Biology III, Fall 2003-2006

Curriculum Development and Teaching Innovations:

Developed Interactive Bioinformatics Algorithms for Mobile Devices: Accessible worldwide at www.kelleybioinfo.org



Developed active learning approaches for Bioinformatics, Biology 568

Developed Group Learning approaches for dissection of scientific papers in Biology 567

Cyberbridge Course (NSF Funded project): Integrating computational skills into high school curricula

Developed Bioinformatics Programming Course for biologists at University of Colorado

Participant in Center for Teaching and Learning Workshops, University of Colorado

Developed advanced interactive bioinformatics learning methods for kelleybioinfo.org for learning: Hidden Markov Models, k-mer analyses, ecological metrics, distance matrices, compositional data analysis and de Bruijn graphs

MENTORING

Masters of Science (Thesis Chair or Co-Chair) [54 total]

Shirin Safaee, BS in Biology, Tarbiat Moalem University, Iran
Cell and Molecular Biology Program, Graduated Spring 2005
Thesis: Non-culture detection of *Pasteurella* bacteria and horizontally-transferring toxin genes.

Jayanti Mathur, Andhra University, Visakhapatnam, India
Cell and Molecular Biology Program, Graduated Fall 2005
Thesis: Analysis of microbial diversity along a sulfur rich thermal gradient.

Jason Holzman, BS in Biology, University of Wisconsin
Evolutionary Biology Program, Graduated Spring 2006
Thesis: Population genetics of inbreeding seed beetle sister-species.

Eric Ngan, BS in Computer Science, San Diego State University
Computational Sciences Program, Graduated Fall 2006
Thesis: Isolation by distance web service with incorporation of DNA data sets.

Dean Ellis, BS in Biology, James Cook University, Australia
Cell and Molecular Biology Program, Graduated Fall 2006
Thesis: Archael diversity of geothermal steam vents.

Alexander Poole, BS in Biology, University of Colorado
Cell and Molecular Biology Program, Graduated Spring 2007
Thesis: Phylogenetic methods for the detection of gene regulatory modules.

Sara Tin, BS in Biology, UC California, Berkeley
Evolutionary Biology Program, Graduated Spring 2007
Thesis: Prokaryotic Methods of Dispersal Within and Among Geothermal Habitats

Julia Turner, BS in Biology, Metropolitan State College of Denver
Computational Sciences Program, Graduated Fall 2007
Thesis: A parallel implementation of the Isolation by Distance Web Service.

Lesley Lee, BA in Chemistry and BS in Biology, Florida Atlantic University
Cell and Molecular Program, Graduated Spring 2008
Thesis: Combined culture and culture-independent analysis of microbial diversity in a childcare center.

Sujata Sovani, BS in Chemical Engineering, Laxminarayan Institute of Technology, Nagpur, India
Cell and Molecular Program, Graduated Spring 2008
Thesis: Design and development of broad-spectrum bacterial vaccine.

Kranthi Kumar, BS in Biology, Jawaharlal Nehru Technological University, India

Cell and Molecular Program, Graduated Spring 2011
Thesis: Phylogeny and molecular identification of Pasteurellaceae of the basis of multilocus sequence analysis.

Kate Wall, BA, Mount Holyoke College
Cell and Molecular Program, Graduated Summer 2011
Thesis: Microbial diversity of Hawaiian Fumaroles.

Yoko Suzuki, BS, San Diego State University
Computational Sciences Program, Graduated Summer 2011
Thesis: Implementation of GIS information for Isolation by Distance Web Service.

Krissi Hewitt, BS in Biology, University of California, San Diego
Cell and Molecular Program, Graduated Spring 2012
Thesis: Molecular analysis of bacterial diversity in neonatal intensive care units using 16S rRNA pyrosequencing.

Debashree Das, BS, University of North Bengal; MS University of Calcutta
Cell and Molecular Program, Graduated Spring 2012
Thesis: Diversity of Archaea in geothermal springs and spring sediments.

Matthew Munoz, BS, University of California, Davis
Bioinformatics and Medical Informatics, Graduated Spring 2012
Thesis: Evolutionary genomics of gene order and regulation in microbes.

Jennifer Cornell, BS, San Diego State University
Evolutionary Biology Program, Graduated Summer 2012
Thesis: Origin and evolution of fumarole microbial communities: A phylogenetic approach.

Paul Fryling, BS, San Diego State University
Bioinformatics and Medical Informatics, Graduated Spring 2013
Thesis: Application of Ancestral Sequences to Bacterial Phylogenetic Analysis.

Rosalin Le, BA, UCLA
Cell and Molecular Program, Graduated Fall 2013
Thesis: Microbial diversity associated with periodontal disease and heart disease.

Tara Schwarz, BS, St. Mary's College
Cell and Molecular Program, Graduated Spring 2014
Thesis: Viral Metagenomics of Indoor Environments.

Iryna Dzieciuch, BS, Ukraine
Bioinformatics and Medical Informatics, Graduated Fall 2014
Project: Metagenomic analysis of periodontal disease.

Pedro J. Torres, BS, University of California, Santa Barbara
Cell and Molecular Program, Graduated Spring 2015
Thesis: Salivary microbiota associated with pancreatic cancer.

Jennifer Fouquier, BS, University of California, San Diego
Bioinformatics and Medical Informatics, Graduated Spring 2015
Thesis: Molecular analysis of indoor fungal diversity.

John Thompson, BA, University of California, San Diego
Bioinformatics and Medical Informatics, Graduated Summer 2015
Thesis: Determining Phylogeny via Multiple Reference Proteins.

Kassi Kosnicki, BS, University of Wisconsin, Milwaukee
Bioinformatics and Medical Informatics, Graduated Fall 2016
Thesis: Effects of Alcohol Consumption on the Gut Microbiome

Jason Dulin, BS, University of Illinois-Urbana/Champaign
Molecular and Cellular Biology, Graduated December 2015
Project: Molecular Analysis of Fungal Diversity using GhostTree

Prathik Korategere Vijay Kumar, BE (Biotechnology), New Horizon College of Engineering, India
Bioinformatics and Medical Informatics, Graduated Spring 2017
Thesis: Metagenomic analysis of periodontal disease

Gabriel Goodney, BA (Biology, Computing and Information Studies), Washington & Jefferson College, Washington PA
Bioinformatics and Medical Informatics, Graduate Spring 2017
Thesis: Developing quantitative abundance metrics for microbial communities

Vibhu Chandrashekhar, BA, Rutgers University
Bioinformatics and Medical Informatics Graduate Student, Graduated December 2017
Thesis: METAgenomic Data EXplorer (METADEX): Differential Abundance in Two Dimensions syndrome

Michael Meyers, BS, San Diego State University
Bioinformatics and Medical Informatics Graduate Student, Graduated December 2017
Project: Metagenomic analysis of Archaea and viruses in a PCOS mouse model

Pablo Arroyo, BS, UC San Diego
Microbiology Graduate Student, Graduated Spring 2019
Project: Determining the potential organizational effects of letrozole on a mouse model of polycystic ovary syndrome

Ruby Tandon, MS, Indian Institute of Science, India
Molecular and Cellular Biology, Graduated Fall 2018

Project: FACS analysis of microbial communities in built environments

Yingfeng Chen, BS Biotechnology, California State University San Marcos
Bioinformatics and Medical Informatics Graduate Student, Graduated Spring 2019
Project: Genome assembly and American Gut Project

Jordan McGhee, BS, San Diego State University
Bioinformatics and Medical Informatics Graduate Student, Graduated Spring 2019
Project: Meta SourceTracker Diagnostics

Richa Sharma
Bioinformatics and Medical Informatics Graduate Student, Graduated Fall 2019
Project: Qiime2 analysis of Hospital ICU Microbiome data

Ying Xu
Bioinformatics and Medical Informatics Graduate Student, Graduated Fall 2019
Project: QIIME2 data analysis on hospital ICU microbiome data

Basilin Benson
Bioinformatics and Medical Informatics Graduate Student, Graduated Fall 2020
Project: Time based linear regression in rat gut microbiome data

Bryan Ho, BS, UC San Diego
Bioinformatics and Medical Informatics Graduate Student, Graduated Fall 2020
Project: Metagenomic analysis of PCOS mouse model microbiome

William Liu BS, UCLA
Bioinformatics and Medical Informatics Graduate Student, Graduated Fall 2023
Project: Effects of third hand smoke on human and built environment microbiomes

Daniel Ryback, BS in Biology, UC Davis
Cell and Molecular Biology Graduate Student, Graduated Fall 2023
Project: Metabolomic analysis of PCOS mouse model microbiome

Christine Olmstead
Bioinformatics and Medical Informatics Graduate Student, Graduated Fall 2020
Project: Alterations in Gut Microbiota Do Not Play a Causal Role in Diet-independent Weight Gain Caused by Ovariectomy

Cayla Mason, BS in Biology, University of California, San Diego, Graduated Fall 2021
Bioinformatics and Medical Informatics Graduate Student
Project: Structure and function of restored agriculture soil metagenomes

Nicholas Allsing, BS in Biology, San Diego State University, Graduated Spring 2022
Cell and Molecular Biology Graduate Student
Project: Metagenomics analysis and quantitative profiling of Tijuana estuary runoff

Adrian Ortiz Velez, BE/BS Biological Engineering and Biochemistry, Purdue University, Graduated Spring 2022
Bioinformatics and Medical Informatics Graduate Student
Project: Application of phylogenetics to novel protein discovery and functional prediction.

Alex Handzel, BS in Biology, Graduated Fall 2022
Bioinformatics and Medical Informatics Graduate Student
Project: Time-series analysis of gut microbial diversity in a DHT-Ovex mouse model.

Shawn Ogden, BS in Biology, San Diego State University, Graduated Summer 2023
Cell and Molecular Biology Graduate Student
Project: Role of sex in shaping beta-glucoronidase activity in the gut microbiome.

Shayla Shahar, BS in Biology, Sonoma State University, Graduated Spring 2023
Cell and Molecular Biology Graduate Student
Project: Metagenomics analysis of Tijuana River outflows.

Maria Fernanda Terrazas Garcia, BS in Microbiology, San Diego State University, Graduated Summer 2023
Bioinformatics and Medical Informatics Graduate Student
Project: Effects of oral contraceptives use on human gut microbiome.

Kaelyn Nannini, BS in Biological Sciences, Northern Illinois University, Graduated Spring 2023
Bioinformatics and Medical Informatics Graduate Student
Project: Temporal dynamics of bacterial and fungal communities.

Kiarash Rastegar, BS in Pharmacological Chemistry, University of California, San Diego, Graduated Spring 2024
Biological and Medical Informatics Graduate Student
Project: Microbial Classifier using Convolution Neural Network

Andrew Levine, BS in Microbiology, Genetics and Genomics, Michigan State University and BS in Statistics, Michigan State University
Bioinformatics and Medical Informatics Graduate Student
Project: Application of SourceTracker to metabolomics data.

Ryin Rouzbehani, BS in General Biology, University of California, San Diego, Graduated Spring 2024
Bioinformatics and Medical Informatics Graduate Student
Project: High-throughput ancestral state reconstruction approach for determining novel protein structural motifs.

Shayan Akhavan, BS in Biopsychology (Chemistry minor), University of California, San Diego
Graduated Summer 2024
Bioinformatics and Medical Informatics Graduate Student
Project: PyBootNet, A python package for bootstrapping and network construction.

Shyan Polman, BS in Biology, San Diego State University
Bioinformatics and Medical Informatics Graduate Student
Project: TBD

Nivedita Puliadi Subramanian, B Tech in Biotechnology, Anna University, India
Bioinformatics and Medical Informatics Graduate Student
Project: TBD

Natalia Contreras, BS in Biochemistry and Cell Biology, University of California, San Diego
Bioinformatics and Medical Informatics Graduate Student
Project: TBD

Ph.D. Students [5 Total]

Karen Schwarzberg, BS, Hebrew University of Jerusalem; MS, UC Davis.
Joint Doctoral Program in Cell and Molecular Biology (SDSU/UCSD)
Graduated Spring 2013
Dissertation: Microbial diversity associated with periodontal disease and vascular dysfunction.

Nikos Gurfield, BS, University of California, Los Angeles; DVM University of California, Davis
Joint Doctoral Program in Cell and Molecular Biology (SDSU/UCSD)
Graduated Spring 2016
Dissertation: Endosymbionts, pathogens and microbial diversity in arthropods

Pedro J. Torres, BS, University of California, Santa Barbara; MS, SDSU.
Joint Doctoral Program in Cell and Molecular Biology (SDSU/UCSD)
Graduated Spring 2019
Dissertation: Microbial communities and their impact on human health and disease.

Laura Sisk-Hackworth, BS, Cal Poly, San Luis Obispo
Joint Doctoral Program in Cell and Molecular Biology (SDSU/UCSD)
Graduated Spring 2024
Dissertation: The role of puberty, steroid hormones and bile acids in shaping the gut microbiome.

Dennis Dimitri Krutkin, B.S., Cellular and Molecular Biology, San Diego State University; M.S., Bioinformatics and Medical Informatics; San Diego State

University, M.S., Computer Science and Information Technology, University of Pennsylvania
Joint Doctoral Program in Cell and Molecular Biology (SDSU/UCSD)
Research: Microbial Metagenomics

Jada Brown, BS, San Diego State University
Joint Doctoral Program in Cell and Molecular Biology (SDSU/UCSD)
Research: The role of the gut microbiome in PCOS

Post-Doctoral Fellow
Beltran Rodriguez-Mueller, Ph.D. Computational Sciences, San Diego State University
Project: Bioinformatics analysis of metagenomic data associated with the Human Microbiome.

PREP (Post-Baccalaureate Biomedical Research Education Program – NIH/NIGMS)

Eric Alegre, BS Biology, SDSU.
Project: PHAT: Phylogenetic Annotation Tool. Eric developed a Bioinformatics approach to improve the accuracy of gene sequence annotations, a critical aspect of genomic research. Eric was accepted into a Bioinformatics graduate program at Arizona State University.

Biotechnology Certificate Program

Aruna Binuraj, BS in Zoology, MS in Microbiology, Mahatma Ghandi University, India
Summer 2006-Fall 2006
Project: Substrate-use profiling and molecular analysis of bark beetle microbes.

Undergraduate Researchers

Collin McManus, BS Biology, SDSU (Spring 2003) – continued as technician.
Project: Development of non-culture molecular methods for analysis of microbial communities.

Adam Navidi, BS Biology, SDSU (Fall 2003).
Project: Population genetics of *Dendroctonus* bark beetles in relation to host-plants.

Omar Alemi, BS Biology, SDSU (Spring 2004).
Project: Development of PCR strategies to amplify insect nuclear genes.

Cecelia Dahl, BS Biology, SDSU (Fall 2004).
Project: Strain specific genetic analysis of Pasteurellaceae bacteria.

Diana Buenrosto, BS Biology, SDSU (Fall 2004).
Project: Bioinformatics: Sequence analysis of ribosomal RNA sequences.

Eric Alegre, BS Biology, SDSU (Spring 2005) – continued as PREP student.
Project: Development of software for analyzing microbial sequence data.

Chris Reid, BS Biology, SDSU (Fall 2005).
Project: Effects of resource specialization on genetic structure of bark beetles populations.

Kenneth Zitnik, BS Biology, SDSU (Spring 2008)
Project: Molecular analysis of bacterial diversity in office settings using pyrosequencing technology.

Sylvia Marzec, BS Biology, University of Hamburg (Spring 2009)
Project: Effects of host-plant switching on gut microbial diversity in two flea-beetle species.

Aisha Ahmed, BS Biology, SDSU (Spring 2010)
Project: Novel PCR primers for bacterial community diversity analysis of periodontal disease.

Arman Majidi, BS Biology, SDSU (Spring 2010)
Project: Novel PCR primers for bacterial community diversity analysis of periodontal disease.

Kelley Christian, BS Biology, SDSU (Spring 2010)
Project: DNA extraction and PCR of fumarole-associated vent communities.

Chris Wilde, BS Biology, SDSU (Spring 2011)
Project: Bacterial strain identification in root canal and other oral diseases.

Maria Angle, BS Biology, SDSU (Fall 2011-Spring 2012)
Project: Bacterial strain identification in root canal and other oral diseases.

Mariam Asper, BS Biology, SDSU (Fall 2011-Spring 2012)
Project: Bacterial strain identification indoor microbial communities.

Bonnie Le, BS Biology, UCLA (Volunteer Fall 2011-Spring 2012)
Project: Primer optimization for novel gene markers in oral microbial communities.

Pascal Reyes, Major Undeclared, SDSU (Fall 2012-Fall 2013)
Project: Effects of third-hand smoke on microbial diversity of bed linens.

Michelle Mitchell, BS Biology, SDSU (Fall 2013-Spring 2014)
Project: Establishment and viability of microbial communities on restroom surfaces.

Julia Bell, BS Biology, SDSU (Spring 2014)
Project: Establishment and viability of microbial communities on restroom surfaces.

Brandon Villar, BS Biology, SDSU (Spring 2014)
Project: Real-time PCR analysis of bacterial abundance in pancreatic cancer patients.

Artemisia Zuazo, BS Biology, SDSU (Spring, Summer 2015)
Project: Analysis of gut microbial diversity under moderate alcohol consumption.

Crislyn Ancheta, BS Biology, SDSU (Fall 2017-Spring 2018)
Project: Microscopic analysis of microbial communities on building materials.

Sia Frenzel, BS Biology, SDSU (Fall 2018)
Project: Effects of third-hand smoke on infant microbial communities.

Shawn Ogden, BS Biology (Fall 2020)
Project: Effects of wetting and desiccation on formation and stability of built environment microbial communities.

Anthony Griffen, BS Computer Science and Biology (Fall 2020, Spring 2021)
Project: UMAP reanalysis of microbial community diversity

Sarah Kousba, BS Biology (Fall 2020)
Project: QIIME2 analysis of gut microbial diversity associated with PCOS.

Jada Brown, BS Biology (Fall 2021)
Project: Development of single-gene marker barcoded fungal and bacterial primers for studying the microbiome of the built environment.

Biotechnology Interns (High Tech High School)

Jeff Jensen (Spring 2004)
Ryan Thomas (Spring 2004)
Clark Schulman (Spring 2007)
Christopher Mitchell (Spring 2007)
Brad Jensen (Spring 2008, Summer 2009)
Alex Pardes (Spring 2008, Summer 2009)

UNIVERSITY SERVICE

Senior Mentor, NIH FUERTE Program Faculty Mentor Team for Professor Devrim Kaya, Fall 2024-Present.

Leader, Biomedical Methods Group in the SDSU Healthlink NIH U54 funded project. Fall 2018-Present.

Co-Leader, Investigator Development Core in the SDSU Healthlink NIH U54 funded project. Fall 2018-Summer 2021.

Coordinator, Cell and Molecular Biology Master's Program, Fall 2016-Spring 2020.

Coordinator, Program Area in Cell and Molecular Biology, Fall 2016-Spring 2020.

Committee Assignments:

1. Member, Cell and Molecular Biology Curriculum Committee, Fall 2004-2019. This committee is charged with developing and maintaining the high standards of courses for our students in the biology program.

2. Member, Bioinformatics and Medical Informatics Admission Committee, Fall 2004-Present. The purpose of this committee is to evaluate the applications of prospective graduate students and decide who is best suited for the program.

3. Member, Retention, Tenure and Promotion (RTP) Committee, Fall 2010-2015. The purpose of this committee is to evaluate faculty in the Biology Department and recommend retention, tenure or promotion to the College and University.

4. Member, Cell and Molecular Biology Joint-Doctoral Ph.D. Committee, Spring 2011-2014. The purpose of this committee is to evaluate the applications of prospective graduate students and decide who is best suited for the program.

5. Member, Cell and Molecular Biology Master's Committee, Fall 2004-2009. The purpose of this committee is to evaluate the applications of prospective graduate students and decide who is best suited for the program.

6. Advisory Member, Distributed Computing Committee, Fall 2004-2008. This committee involved the cooperation of a number of faculty interested in a distributed computer network on campus. Using specialized software, distributed computing aims to utilize unused processor cycles for scientific calculations.

7. Member, Department of Computer Science Search Committee, Spring 2007. I served on the search committee as the outside department member for a Bioinformatics position. We successfully recruited a new colleague from this search.

8. Member, Department of Biology Search Committee, Spring 2011. I served on the search committee to recruit an Evolutionary Geneticist. The search was cancelled due to projected budget cuts.

9. Member, Department of Biology Search Committee, Spring 2018. I served on the search committee to recruit Computational Biologist. We successfully recruited a new colleague from this search.

10. Served on the University Grants Committee at the College of Sciences level, Fall 2018. We reviewed and ranked applications from faculty members of the departments in the College.

11. Served on the Biology Diversity, Equity, and Inclusion committee, Fall 2020-Spring 2021.

12. Served on the University Grants Committee at the College of Sciences level, Fall 2019. We reviewed and ranked applications from faculty members of the departments in the College.

13. Chair, College of Sciences Bioinformatics and Medical Informatics Search Committee, Spring 2021. Successfully hired top search candidate.

14. Co-Chair, Department of Biology Search Committee, Spring 2021. Successfully hired top search candidate.

15. Elected member of the SDSU Faculty Senate, Spring 2020-present.

16. Member, Retention, Tenure and Promotion (RTP) Committee, Fall 2021-Spring2024. The purpose of this committee is to evaluate faculty in the Biology Department and recommend retention, tenure or promotion to the College and University.

17. Chair, ad-hoc Committee on Graduate Student Financial Affairs. Fall 2021-Spring 2022.

18. Elected ad-hoc representative of the SDSU Faculty Senate Executive committee. Fall 2023.

Additional University Service:

1. Provided lectures for the Bridges to the Future Program, Summer 2006 and 2007. Bridges to the Future is a joint program with local community colleges that helps minority undergraduate students transition into the sciences as they prepare to start classes at San Diego State University. For two summers, I taught classes for the Bridges program at the behest of Dr. Paul Paolini. This class included a 2-hour Bioinformatics lab.

2. Research Experiences for Undergraduates (REU-NSF), Summer 2007. This interesting and innovative program, entitled “Mathematics Research Experience for Undergraduates and Teachers”, brought together mathematicians, statisticians and biologists to give students and teachers enough background that they might perform hands-on research in mathematical biology. My role was to teach the students basic biology, Bioinformatics and phylogenetic theory so that they might research bacteriophage evolution.

3. Volunteered two weeks of teaching time (4 lectures) for Biology 610: Advanced Topics in Molecular Biology in the spring semesters of 2003-2007.

4. Participated in Laboratory Talk/Tours with the Evolutionary Biology Program Area.

5. Presented lectures on microbial diversity and evolution in graduate seminar class.

6. Worked on discussion group assignments with graduate students in Biology 770 class Spring and Fall 2006.

7. Presented biology lectures for Computational Science Bioinformatics course taught by Dr. Faramarz Valafar.

8. Presented two lectures on the BLAST algorithm to the Biology 467 Lab course taught by Dr. Forest Rohwer in Spring 2005.

9. Mentored two IRACDA Postdoctoral fellows in Biology 350: General Microbiology Spring 2012.

10. Provided lecture and lab exercises for Biostatistics (Biology 215), Spring 2019.

11. Mentored Assistant Professor navigating issues of racist and sexist bias in teaching and RTP issues. Spring and Fall 2019.

12. Lectured on bioinformatics and statistics in Biology 610.

13. Created, organized and advertised virtual seminar series at SDSU: 1st International Sofa Seminar Series, Spring 2020.

14. Organized and advertised virtual seminar series at SDSU: 2nd International Sofa Seminar Series, Spring 2021.

15. Presented talk to SDSU's Environmental Justice to the Environmental Honors Fraternity Epsilon Eta, Fall 2021.

16. Presented seminar on fracked methane pollution and Sempra Energy to the SDSU Senate subcommittee on Sustainability, Fall 2021.

17. Created, organized and advertised seminar series at SDSU: CSU Virtual Bioinformatics Seminar Series, Fall 2023.

18. Served as an ad-hoc member on the Department of Chemistry Research, Tenure and Promotion committee. Fall 2023.

19. Co-organized and advertised seminar series at SDSU: CSU Virtual Bioinformatics Seminar Series, Fall 2023.

COMMUNITY SERVICE/OUTREACH

1. Presented several lectures at UCSD in the Metagenomics in the Integrated Microbiology Course taught by Dr. Doug Bartlett and Dr. Joe Pogliano, Spring 2010-2012. I also presented lectures for Dr. Milton Saier's class.

2. San Diego's High Tech High School runs an innovative Biotechnology internship program. I mentored six students through this program from 2004-2009 and I am a member of the Biotechnology Board of directors.

3. Assisted the science program at Albert Einstein Academy Charter Elementary and Middle Schools from Fall 2010-Present. I designed and taught a Bioinformatics lab in three 7th grade classes. I helped design science curriculum for the elementary school IB program and obtained equipment for the middle school science labs. I taught hands-on, inquiry based science in 1st-5th Grade.

4. Co-organized and designed a Family Science Night at Albert Einstein Academy Charter Elementary School. Attended by more than 300 children and their families in Spring 2013-2017.

5. Presented on the Oral Microbiome, tooth decay, gum disease and oral health, to three 7th grade science classes at Albert Einstein Academy Charter Middle School. Spring 2016.

6. Designed, organized, and taught Bioinformatics workshop with 7th grade science students at Albert Einstein Academy Charter Middle School. Spring 2017.

7. Volunteers at Science Olympiad and ran a Microbiology after school science project at Albert Einstein Academy Charter Middle School. Spring 2018.

8. Taught principles of Sanger DNA sequencing method to 9th grade Biology class at San Diego High School. Fall 2018.

9. Designed and instructed Python Programming coding camp for high school students. Fall 2019.

10. Faculty advisor for Green New Deal Climate March at San Diego State. Fall 2019.

11. Designed and instructed Linux and Raspberry Pi coding camps for high school students. Spring 2020.

12. Wrote tenure evaluation letter for Dr. Erica Hartman at Northwestern University. Spring 2022.