

Catherine Lozupone, Ph.D.

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Current Position:

2023-present Professor: Department of Biomedical Informatics, University of Colorado, Anschutz Medical Campus.

Education:

B.S. (1997) Biology/ Honors, Villanova University. Graduated *Cum Laude*.

M.S. (1999) Microbiology, Colorado State University, Fort Collins
Studied the responses of soil fungi to disturbance under guidance of Dr. Donald Klein
Thesis: Molecular and cultural assessment of chytrid and *Spizellomyces* populations in grassland soils.

Ph.D. (2007) Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder
Developed and applied bioinformatics tools for microbial ecology research (UniFrac) under guidance of Dr. Rob Knight Dissertation: The Global Distribution of Bacterial Diversity.

Postdoctoral Biofrontiers Institute, University of Colorado, Boulder.
(2007-2013) Center for Genome Sciences, Washington University, St. Louis.
Developed bioinformatics tools for microbiome research and performed research primarily in human gut microbiome composition in health and disease under guidance of Drs. Rob Knight and Jeffrey Gordon.

Academic Appointments:

2013-2018 Assistant Professor: Biomedical Informatics and Personalized Medicine, Department of Medicine, University of Colorado, Anschutz Medical Campus.

2013-present Secondary Appointment: Department of Immunology and Microbiology, University of Colorado, Anschutz Medical Campus.

2018-2022 Associate Professor: Biomedical Informatics and Personalized Medicine, Department of Medicine, University of Colorado, Anschutz Medical Campus.

2022-2023 Associate Professor: Department of Biomedical Informatics, University of Colorado, Anschutz Medical Campus.

Training Faculty:

2013- present Computational Biosciences Training Programs, University of Colorado, Anschutz Medical Campus.

2013-present Microbiology Training Program, University of Colorado, Anschutz Medical Campus.

2021-present Interdisciplinary Quantitative Biology Program, University of Colorado Boulder Biofrontiers Institute
2022-present Biomedical Sciences Program (BSP) Umbrella PhD Program

Other Professional Positions:

1999-2001 Professional Research Assistant: Ecology and Evolutionary Biology, Princeton University. *Studied the evolution and molecular mechanisms of genetic code alterations in ciliated protozoa under guidance of Dr. Laura Landweber.*

2001-2002 Bioinformatic Scientist: Informax Inc. (Bethesda, MD)
Provided technical support and training for sequence and microarray data analysis software.

2002-2003 Professional Research Assistant: MCDB Department, University of Colorado, Boulder. *Studied amino acid binding RNAs using SELEX under guidance of Dr. Mike Yarus.*

Honors special recognitions and awards:

1997 Alpha Epsilon Delta Pre-Medical Honor Society: Villanova University

2006 Corporate Activities Student Travel Grant: American Society for Microbiology

2009-2012 NIH Health Disparities Loan Repayment Program recipient

2011 Fast moving front paper in Microbiology by Thomson Reuters *ScienceWatch*®
<http://archive.sciencewatch.com/dr/fmf/2011/11marfmf/11marfmfLozuET/>

2015 Kavli Fellow, National Academy of Science

2016 Boonton High School “Hall of Fame” inductee – “renowned Microbiologist”

2016 Outstanding Early Career Scholar: University of Colorado, Department of Medicine

2016 Team Science Award: University of Colorado, Department of Medicine

2018 ISME17 (International Society for Microbial Ecology) Young Investigator Award

2018 Microbiome Hero: World Microbiome Day. Science Foundation of Ireland

2014,2017-23 Thomson Reuters/Clarivate Analytics, Highly Cited Researcher

Links /Press:

- Wikipedia: http://en.wikipedia.org/wiki/Catherine_A._Lozupone
- Lozupone Lab Website: <https://www.lozuponelab.com>
- Google Scholar profile: <https://scholar.google.com/citations?user=aK--Aj0AAAAJ&hl=en&oi=ao>
- Featured in New York Times: <https://www.nytimes.com/2013/05/19/magazine/say-hello-to-the-100-trillion-bacteria-that-make-up-your-microbiome.html>
- Talk on HIV microbiome: <https://www.youtube.com/watch?v=Z7NxRmxTzyA>

Committee and Service Activities:

Departmental/Educational Committees

- 2013-2017 Preliminary Exam committee: Computational Biosciences Program, CU Anschutz: **Chair** from 2015-2016
- 2016-2022 Executive Leadership Committee. Division of Biomedical Informatics and Personalized Medicine, CU Anschutz
- 2020 Preliminary Exam Committee: Microbiology Training Program, CU Anschutz
- 2021-2022 Education Sub-Committee. Department of Biomedical Informatics – **Chair**
- 2021 Graduate Admissions Committee: Microbiology Training Program, CU Anschutz
- 2022-present Education Committee. Department of Biomedical Informatics – **Chair 2022-2024**
- 2023-present Curriculum Committee. Computational Bioscience Program, CU Anschutz

Seminar Series Organizer

- 2005-2007 Organizer of Bioinformatics Supergroup at University of Colorado, Boulder
- 2013-present Founder and Organizer of Microbiome Research in Progress seminar series at CU Anschutz

Core Services provider

- 2016-2021 **Co-Director** of the University of Colorado GI & Liver Innate Immune Program (GALIIP) Microbiota sub-program. <https://medschool.cuanschutz.edu/galiip/cores/microbiome>
- 2021-present **Director** of the Mucosal Immunobiology Core (MIC) of the Center for Mucosal Immunology and Rheumatic Disease Pathogenesis (CMIR) [https://medschool.cuanschutz.edu/cmire/cores/mucosal-immunobiology-core-\(mic\)](https://medschool.cuanschutz.edu/cmire/cores/mucosal-immunobiology-core-(mic))
- 2021-present **Director** of Anschutz Center for Microbiome Excellence (ACME) [https://medschool.cuanschutz.edu/dbmi/faculty-resources/anschutz-center-for-microbiome-excellence-\(acme\)](https://medschool.cuanschutz.edu/dbmi/faculty-resources/anschutz-center-for-microbiome-excellence-(acme))

External Advisory/Steering Committees

- 2010 Symposium Organizer: *From Microbial to Conservation Biology: Exploring Phylogenetic β Diversity as a Theoretical Tool Uniting Disciplines* Ecological Society of America. (Pittsburg, PA)
- 2011 Organizer of thematic session: *Microbiome Dynamics and Health Disparities* American Society for Biochemistry and Molecular Biology (Boston, MA)
- 2017-2022 Organizing and Scientific Committee of the *International Workshop on Microbiome and HIV Pathogenesis, Prevention, and Treatment* (Virology Education)
- 2018-2020 Governance Board for *Microbiome Otago*, University of Otago, New Zealand
- 2018-2021 External Advisory Committee. *Pediatric Obesity Microbiome & Metabolism Study (POMMS)*; Duke University

2019-2022 Steering Committee: *Front Range Microbiome Symposium*. Fort Collins, CO
2022-2024 Co-Organizer: *Cumming Foundation Mountain West Microbiome Meeting*. Snowmass, UT.

Review and Referee Work:

Journals:

2016-2018 **Associate Editor:** mSystems, published by the American Society for Microbiology
2018-2023 **Editor in Chief:** npj Biofilms and Microbiomes; Nature Publishing Group

Ad hoc Peer Review:

Alcohol, American Journal of Respiratory Cell and Molecular Biology, American Journal of Respiratory and Critical Care Medicine, Analytical Biochemistry, Brain Behavior and Immunity, BMC Genomics, BMC Microbiology, BMC Medicine, Cell Host & Microbe, Cell Metabolism, Cell Reports, Cell Reports Medicine, Clinical and Experimental Immunology, Clinical Infectious Diseases, Current Biology, Diversity, EBioMedicine, Ecology, Ecology Letters, eLife, Emerging Microbes & Infections, European Journal of Plant Pathology, FEMS Microbiology Ecology, Genome Medicine, Global Ecology and Biogeography, Gut Microbes, Hydrobiologia, International Microbiology, ISME Journal, Journal of Allergy and Clinical Immunology, Journal of Clinical Investigation, Journal of Infectious Diseases, Journal of the International AIDS society, Journal of Pediatric Gastroenterology and Nutrition, Journal of Theoretical Biology, Journal of Virology, Mbio, Methods in Ecology and Evolution, Microbiome, Molecular Ecology, mSystems, Mucosal Immunology, Nature, Nature Biotechnology, Nature Communications, Nature Microbiology, npj Biofilms and Microbiomes, PeerJ, PLoS Computational Biology, PLoS Biology, PLoS One, PLoS Pathogens, PNAS, Science Translational Medicine, and Systematic and Applied Microbiology.

Grant Review:

International Grant Review:

2017 Auckland Medical Research Foundation
2019 European Science Foundation: Research Foundation Flanders' (FWO) postdoctoral fellowship

Federal Study Panels:

2014 NIH: Gastric Mucosal Pathobiology Study Section
2014 NIH: *Ad Hoc* review for Centers of Biomedical Research Excellence
2014 NIH: *Ad Hoc* review for Mechanistic Insights from Birth Cohorts (PAR-13-109, R01)
2014 NIH: *Ad Hoc* review for Botanical Dietary Supplement Research Centers (P50)
2015 NIH: Gastric Mucosal Pathobiology Study Section
2015 NSF: *Ad Hoc* review for Arctic Sciences Division general solicitation
2016 NIH: Special Emphasis Panel for RFA "Exploratory Studies for Delineating Microbiome: Host Interactions in Obesity, Digestive and Liver Diseases and Nutrition (R21)"

- 2016 NIH: Special Emphasis Panel for RFA, Elucidating HIV and HIV-treatment Associated Metabolic/Endocrine Dysfunction
- 2017 NIH: Special Emphasis Panel for RFA “Exploratory Studies for Delineating Microbiome: Host Interactions in Obesity, Digestive and Liver Diseases and Nutrition (R21)”
- 2017 NIH: Contract Review: Nonhuman Primate Core Functional Genomics Laboratory for AIDS Vaccine Research and Development, NIAID-DAIDS-NIHAI2016072
- 2018 NIH: Special Emphasis Panel for RFA “HIV Pathogenesis and the Oral Microbiota”
- 2019 NIH: Member Conflict: AIDS and AIDS Related Applications
- 2019 NIH: *Ad Hoc* review for research on Current Topics in Alzheimer's Disease and Its Related Dementias (PAR-18-596, R01)
- 2020 NIH: Center of Excellence for Research on Complementary and Integrative Health (P01)
- 2020 NIH: Member Conflict: Panel in Epidemiology and Statistical Methods
- 2021 NIH: Special Emphasis Panel: RC2 grant application
- 2021 NIH: Special Emphasis Panel: Clinical Research and Field Studies of Infectious Diseases
- 2022 NIH: Member Conflict: Gut Inflammation and Microbiome
- 2023 NIH-NHLBI: Program Project Grant (PPG) Application Review (P01)
- 2023 NIH: Special Emphasis Panel: RFA-DK-22-039 “ Toward Elucidating Mechanisms of HIV Pathogenesis within the Mission of the NIDDK (Pathogenesis TEAMS)” **Panel Chair**
- 2024 NIH-NHLBI: Program Project Grant (PPG) Application Review (P01)
- 2024 NIH- NCCIH Training and Education Review Panel
- 2024 NIH - HIV Comorbidities and Clinical Studies (HCCS) Review Panel

Regional Review Panels:

- 2023-24 MoWMA (**Mountain **West **Microbiome **Alliance**) Seed Grant Program******

University of Colorado Review Panels:

- 2017 Colorado Clinical and Translational Science Program (CCTSI) Co-Pilot Awards
- 2016-22 GI and Liver Innate Immune Programs Pilot and Feasibility Awards
- 2018 K to R Transition Program (CCTSI): Grant Review for Mock Study Section
- 2022-24 School of Medicine Translational Research Scholars Program
- 2022-24 CMIR (Center for Mucosal Immunology and Rheumatic Disease Pathogenesis) Pilot and Microgrant programs

Invited Lectures and Presentations:

International:

- 2009 Unilever Microbiome Symposium. Liverpool, England.
- 2011 Gut Microbiota in Health and Disease Symposium. EPFL. Lausanne, Switzerland.

- 2012 Round Table: “Microbial Network Ecology: Deciphering Complex Network Interactions in Microbial Communities.” ISME 14, Copenhagen, Denmark.
- 2014 Center for Research in Infectious Diseases (CIENI), at the National Institute of Respiratory Diseases (INER). Meeting on HIV/AIDS prevention and treatment. Oaxaca, Mexico.
- 2015 The 2nd Korean-American Kavli Frontiers in Science Symposium. Jeju Island South Korea.
Session Chair.
- 2016 New Zealand Microbial Ecology Consortium (NZMEC 4.0). Auckland, New Zealand. **Plenary Speaker.**
- 2018 6th Annual Arab-American Frontiers of Science, Engineering, and Medicine Symposium. Kuwait City, Kuwait. **Plenary Speaker.**
- 2018 International Society for Microbial Ecology: ISME17/ Leipzig, Germany. **Award Lecture: Young Investigator Award.**
- 2018 International Human Microbiome Consortium meeting. Session “*Smarter ways for analyzing microbiome and host data.*” Killarney, County Kerry, Ireland.
- 2018 Conference on antibiotics and delivery mode on the gut microbiome. Oslo, Norway. **Keynote Speaker.**
- 2021 STI and HIV World Congress. Symposium on genital microbiome and reproductive health. (Virtual).
- 2023 New Zealand Microbiological Society Conference. Auckland, New Zealand. **Plenary Speaker**
- 2024 Keystone Symposium - Regulation of Barrier Immunity. Banff, Canada.
- 2024 CAMDA (International Conference on Critical Assessment of Massive Data Analysis). ISMB. Montreal Canada. **Keynote Speaker.**

Regional/National:

- 2000 Symposium: “Chytrids Active in the Environment” Mycological Society of America, Burlington, VT.
- 2007 Rocky Mountain Branch of the American Society for Microbiology, Denver, Colorado. **Keynote speaker.**
- 2007 Session: “From black box to can of worms: advances in molecular analysis of microbial communities.” American Geophysicists Union, San Francisco, CA.
- 2009 Human microbiome in health and disease pre-meeting basic science course. American Society of Tropical Disease and Medicine. Washington D.C.
- 2011 Next-Generation Sequencing and Genomic Medicine Symposium. Drug Discovery and Diagnostic Development Week. San Francisco, CA.
- 2013 American Society for Microbiology (ASM) general meeting. “Metagenomic Approaches: Frontiers of Annotation and Assembly, Networking and Discovery”. Denver, Colorado.
- 2013 ISCB Rocky Mountain Bioinformatics Conference. Snowmass, Colorado. **Keynote speaker.**
- 2013 Rocky Mountain Branch of the American Society for Microbiology. Denver, Colorado. **Keynote speaker.**

- 2014 NESCent. (National Evolutionary Synthesis Center). Meeting on Evolution and community ecology of host-associated microbiota. Duke University, Durham, NC.
- 2014 American Thoracic Society, in symposium "The Lung Microbiome in 2014: State of the art and science: Analytical techniques in Lung Microbiome Research." San Diego, CA.
- 2014 American Association of Health Care journalists meeting. Denver, CO.
- 2015 1st International workshop on Microbiome in HIV Pathogenesis, Prevention and Treatment. NIH campus, Bethesda, MD.
- 2015 Session: "Diet, Obesity, Nutrition and Gut Microbiome" at American Society for Biochemistry and Molecular Biology Annual meeting, Boston, MA.
- 2015 42nd Annual Renal Disease and Electrolyte Disorders course. Dr. Robert F. Stonerock Jr. Sponsored Basic Science Update lecture. Aspen Colorado.
- 2016 Institute of Electrical and Electronics Engineers (IEEE) Aerospace Conference. Big Sky, Montana. **Plenary Speaker.**
- 2017 Society for Industrial Microbiology and Biotechnology General Meeting. Session "Computational Techniques for Studying the Microbiome." Denver, Colorado
- 2017 Aspen Allergy Conference, AAAAI. Session "Microbiome and Allergic Inflammatory Diseases". Aspen, Colorado **"State of the Art Speaker"**.
- 2017 American Society for Microbiology (ASM) Microbe (General Meeting). **Plenary Speaker and Chair** of Session "Extracting new biological insights from large scale data." New Orleans, LA.
- 2017 North American Microbiome Congress. San Diego, CA.
- 2018 Nature Research Round Table on Challenges in Translating the Microbiome. Springer Nature headquarters, New York, New York.
- 2019 Western Society of Allergy, Asthma and Immunology Meeting, Maui, Hawaii.
- 2020 5th International Workshop on Microbiome in HIV Pathogenesis, Prevention and Treatment, Rockville, MD.
- 2020 Center for Microbiome Innovation (CIM) International Microbiome Meeting. San Diego, CA.
- 2021 7th International Workshop on Microbiome in HIV Pathogenesis, Prevention and Treatment (Speaker and Session Chair). *** **Voted best oral presentation** (Virtual)
<https://www.youtube.com/watch?v=Z7NxRmxTzyA>
- 2021 ATS-NIAID Workshop: Microbiome, Metabolism, Immunoregulation of Asthma. (Virtual).
- 2021 8th Annual Louisiana Biomedical Research Network (LBRN) Conference on Computational Biology and Bioinformatics. **Keynote Speaker.** (Virtual).
- 2022 Intelligent Systems for Molecular Biology (ISMB). **Keynote Speaker.** Madison, WI.
- 2024 Mountain West Microbiome Consortium 2nd Annual Meeting. Snowbird, UT

University/Institute Invited Seminars/Symposia:

- 2009 Colorado State University, Statistics Department Seminar Series
- 2009 Colorado School of Mines, Environmental Engineering Department Seminar Series

- 2012 *University of Colorado Boulder*. Applied Math Department Seminar Series
- 2013 *Colorado State University*, Department of Chemical Biological Engineering
- 2015 *Tulane University* Presidential Symposium, *Translational Research in Infectious Diseases: From Microbes to Man*. New Orleans, LA.
- 2016 *University of California Davis*, Department of Medical Microbiology and Immunology
- 2016 *Arizona State University*, Microbiology Department. Graduate student invited speaker
- 2017 *Stanford University*. 2nd Annual Stanford Microbiome Bioinformatics Conference.
- 2018 *Johns Hopkins*. Division of Allergy and Clinical Immunology. David G Marsh Fellowship Lecture
- 2018 *University of Wisconsin Madison*. Wisconsin National Primate Research Center
- 2018 *Colorado State University* Microbiome Network. Panelist in Discussion “The Ins and Outs of High Quality Microbiome Data”
- 2018 *Duke University*. Mini-symposium on Pediatric Obesity Microbiome and Metabolism.
- 2018 *Colorado State University*. Metabolism of Infectious Disease Symposium. **Keynote Speaker**.
- 2019 *NIH Vaccine Research Center (VRC)*. Bethesda, MD
- 2020 *NIH* Seminar Series on Diet, Microbiome and Host Interrelationships (Virtual)
- 2020 *Colorado State University*. Fort Collins Colorado. Graduate student invited speaker (Virtual)
- 2022 *Institute for Systems Biology (ISB)* Virtual Microbiome Series (Virtual)
- 2022 *University of Colorado, Boulder*. Boulder Colorado. Center for Microbial Exploration Seminar Series.
- 2023 NICHD DIR TTI Symposium: Disentangling host-microbe interactions through the analysis of high dimensional multi-omics data (Virtual)

Intramural Lectures and Presentations:

- **** Regular speaker in the Mucosal Inflammation Program (MIP) RIP series
- **** Regular speaker in the Microbiome RIP series
- **** Regular speaker in the Division of Personalized Medicine Seminar series
- 2013 Computational Biosciences Seminar Series
- 2014 Department of Immunology and Microbiology; Departmental retreat in Breckenridge, CO
- 2015 CSPEN Nutrition Support Symposium
- 2015 2nd Annual Mini-symposium. The Power of Informatics to Advance Health
- 2015 Department of Nutrition Seminar Series
- 2016 Department of Pharmaceutical Sciences Seminar Series
- 2016,12 Department of Medicine. Research and Innovation Series
- 2017 Colorado Clinical and Translational Sciences Institute (CCTSI) Summit
- 2018 Molecular Biology Program Symposium: Old Questions New Technology
- 2019 Department of Integrative Biology Seminar Series– University of Colorado, Denver
- 2019 Department of Medicine Grand Rounds
- 2019 LEADS (The Lifecourse Epidemiology of Adiposity and Diabetes) Seminar

- 2021 Department of Medicine Research Day: Outgoing Early Career Scholar award presentation
- 2022,16 Department of Immunology and Microbiology Seminar Series
- 2023 Department of Biomedical Informatics Faculty Research Series
- 2023,24 Center for Mucosal Immunology and Rheumatic Disease Pathogenesis (CMIR) Symposium

Community Outreach:

- 2012-16 Mitchell Elementary School: Presenter at “Family Math and Science Night”
- 2014 Research & Treatment Now and in the Future: An Inflammatory Bowel Disease Update. Addressed an audience of people affected by IBD, and others who work in the field.
- 2015 Golden Beer Talks: Delivered a talk on human microbiome research at a community science series in Golden Colorado.
- 2015-16 Mitchell Elementary School: Science Fair: Organized judging by graduated students.
- 2018 Bell Middle School. Girls in STEM code sprint mentor.
- 2015,18,20,23 Community Advisory Board (CAB). Spoke in monthly meeting to discuss HIV research, care, education and treatment with people living with HIV, people interested in HIV, and others who work in the field.
- 2024 Tattered Cover Science talk on “The Role of the Intestinal Microbiome in Health”

Teaching:

Course Director:

- 2017-2020 **Director: Colorado Biomedical Informatics Summer Training Fellowship for underrepresented populations.** This 8 week summer program has the goal of introducing computer science students from diverse, disadvantaged and traditionally underrepresented groups to PhD level research career opportunities in Biomedical Informatics.
- 2020-2022 **Director: CPBS 7711 “Methods and Tools in Biomedical Informatics”** This is a required course in the Fall semester for all first year students in the Computational Biosciences Program.
- 2021-2023, **Director: CPBS 7712 “Research Methods in Biomedical Informatics”** This is a required 2025 course in the Spring semester for all first-year students in the Computational Biosciences Program.

Graduate/Undergraduate level course lectures:

- 1998-1999 Guest lectures in Aquatic microbiology and Microbial Diversity courses. Colorado State University.
- 2003-2004 Graduate Teaching assistant for Molecular and Cell Biology courses. CU Boulder.
- 2008 Guest lecture in Genome Databases: Mining and Management course. CU Boulder.
- 2009 Guest Lecture in International Geobiology Course, Colorado School of Mines.
- 2014 Guest Lecture in Molecular Methods in Microbial Ecology (EBIO 5460). CU Boulder.

- 2016 Guest Lecture to Dietetic Interns in Colorado Clinical and Translational Sciences Institute (CCTSI): CU Anschutz
- 2014-2017 Co-Instructor “Advanced Genome Analysis” Course (MICB7620): CU Anschutz.
- 2022 Lecture for Colorado Biomedical Informatics Undergraduate Training Program: CU Anschutz
- 2022 Co-Instructor “Introduction to Bioinformatics” (IMMU 6110): CU Anschutz.
- 2013-2024 Co-Instructor “Methods and Tools in Biomedical Informatics” (CPBS 7711): CU Anschutz.
- 2013-2025 Co-Instructor “Research Methods in Biomedical Informatics” (CPBS 7712): CU Anschutz.
- 2018-2024 Co-Instructor “The Microbiome in Health and Disease” (IDPT 7810): CU Anschutz.
- 2023 Co-Instructor “Immunology” (IMMU 7662): CU Anschutz

Other courses/workshops:

- 2000-2001 Informax Inc: Generated sequence and microarray data analysis training program and delivered 1-4 day training sessions at academic, public, and private institutions.
- 2009 Latin American Workshop in Molecular Evolution, Cuernavaca Mexico.
- 2009 UniLever Inc.: Training session for Research personnel in microbiome analysis techniques.
- 2012 Introductory Course on Metagenomics in Human Health and Nutrition. ICDDR,B research institute and hospital for diarrheal diseases, Dhaka Bangladesh.
- 2015 Coursera: “Gut Check: Exploring your Microbiome.”

Mentoring:

Primary mentor/ co-mentor

Post-doctoral/M.D. Fellows:

- 2013-2015 Matthew Rhodes Ph.D.: Computational Biosciences Training Program T15
Current position: Assistant Professor of Microbial Genetics at College of Charleston
- 2015-2019 Sam Li Ph.D. Co-mentor with B. Palmer. Colorado HIV-1 Training Program (CHRTP) T32
Current position: Medical Writer Cory/Paeth (medical communication agency).
- 2016-2019 Elmar Pruesse Ph.D.
Current position: Postdoctoral Researcher at National Jewish, Denver CO
- 2016-2020 Keith Hazleton M.D., Ph.D. Pediatric Transplant Hepatology Fellowship Program T32
Current position: Assistant Professor of Clinical Pediatrics, Keck School of Medicine of USC
- 2018-2021 John Darcy Ph.D. Computational Biosciences Training Program T15
Current position: Bioinformatic Scientist, Somalogic, Boulder CO.
- 2023-present Casey Martin Ph.D.
- 2023-present Oren Gordon M.D. Pediatric Oncology Fellowship
- 2024-present Jacob Flynn Ph.D.
- 2024-present Laurie Lyon Ph.D. Computational Biosciences Training Program T15

PhD Students:

- 2014-2018 Mike Shaffer, Ph.D., Computational Biosciences Training Program T15
Current position: Bioinformatics Scientist – Bill and Melinda Gates Medical Research Institute
- 2014-2018 Maggie Stanislawski, Ph.D. Epidemiology (Co-mentored with Dana Dabelea)
Current position: Assistant Professor; Department of Biomedical Informatics. University of Colorado Anschutz Medical Campus
- 2015-2020 Abigail Armstrong, Ph.D., Microbiology; Molecular Pathogenesis of Infectious Diseases (MPID) T32
Current position: Postdoctoral Researcher at Rutgers University, New Brunswick NJ.
- 2015-2020 Katie Arnolds, Ph.D., Microbiology; Training Program in Immunology T32
Current position: Scientist at National Renewable Energy Lab, Golden, CO.
- 2017-2021 Janet Siebert Ph.D. Computational Biosciences (Co-mentored with Carsten Georg)
Current position: Founder of bioinformatics consulting company CytoAnalytics.
- 2017-2022 Casey Martin, Ph.D., Microbiology
Current position: post doc in the Lozupone lab
- 2019-2024 Jennifer Fouquier, Computational Biosciences Ph.D. Training Program T15
Current position: Bioinformatics consultation
- 2021-present Brook Santangelo Computational Biosciences Ph.D. program. Co-mentor with L. Hunter
Computational Biosciences Training Program T15
- 2022-present Elena Wall, Microbiology Ph.D. program. *NSF Graduate Research Fellowship Recipient*
- 2022-present Angela Sofia Burkhart Colorado, Computational Biosciences Ph.D. Training Program T15
- 2022-present John Sterrett, Interdisciplinary Quantitative Biology, Ph.D. program CU Boulder
- 2023-present Jack O'Connor: Microbiology Ph.D. Program

Master's/Medical Students:

- 2015-2016 Cuining Liu, M.S. Biostatistics
- 2019-2020 Kumar Thurimella, Research Track M.D. program
- 2021-2022 Eric Lambert, M.S. Microbiology and Immunology Bioinformatics Master's Degree program
- 2023-2024 Madison Apgar, Masters of Biosciences and Biotechnology program

Undergraduate:

- 2014-2015 Rachel Jones: CU Denver: Experiential Learning Program.

Rotating Graduate Students: These students performed an ~3 month research rotation in my laboratory.

- 2013 Joseph Westrich, Microbiology Ph.D. program
- 2014 Cody Glickman, Computational Biosciences Ph.D. program
- 2014 Kristen Sterns, Interdisciplinary Quantitative Biology Ph.D. program, CU Boulder

2016	Rachel Neve, Microbiology Ph.D. program
2016	Francis Santoriello, Microbiology Ph.D. program
2018	Danielle Sansone-Poe, Biomedical Sciences Ph.D. pPogram
2020	Laurie Lyon, Microbiology Ph.D. program
2022	Jill Billodeaux, Microbiology Ph.D. program

Student/Faculty Mentorship Committees:

Post-doctoral/Faculty:

Current:

- Maggie Stanislawski (Assistant Professor, Department of Biomedical Informatics): K01 mentorship team
- Richard Tobin (Research Assistant Professor, Department of Surgery)
- Charles Preston Neff (Assistant Professor, Department of Medicine): K01 mentorship team
- Melike Sirlanci (Assistant Professor, Department of Biomedical Informatics)
- Janani Ravi (Assistant Professor, Department of Biomedical Informatics)
- Audrey Hendricks (Assistant Professor, Department of Biomedical Informatics)

Past:

- Michael Kriss, M.D. (Assistant Professor, Gastroenterology & Hepatology, Department of Medicine)
- Adam Berlinberg, M.D. (Fellow, Rheumatology, Department of Medicine)
- Kristine Kuhn (Assistant Professor, Rheumatology, Department of Medicine)

Ph.D. Students:

Thesis committees

Current:

- Michael Hoffert (Ecology and Evolutionary Biology, University of Colorado Boulder)

Past:

- Meg Pirrung (Computational Biosciences; Graduated 2015 Ph.D.)
- Jon Leff (Ecology and Evolutional Biology, University of Colorado Boulder; Graduated 2016 Ph.D.)
- Leon Zheng (Molecular Biology; Graduated 2017 with M.D./Ph.D.)
- Adrienne Narrowe (Integrative Biology, University of Colorado Denver; Graduated 2018 Ph.D.)
- Rachel Neve (Microbiology; Graduated 2021 Ph.D.)
- Stephanie M. García (Human Medical Genetics & Genomics Program; Graduated 2021 Ph.D.); F31
Mentorship team
- Cody Glickman (Computational Biosciences; Graduated 2021 Ph.D.)
- Katherine Ziegler (Epidemiology; left program 2021)
- Brent Carrillo (Pharmaceutical Sciences; Graduated 2022 Master's degree)
- Josephina Hendrix (Computational Biosciences; Graduated 2023 Ph.D.)
- Lucia Guatney (Computational Biosciences; Graduated 2023 Master's degree)

- Evan Gorman (Applied Mathematics, University of Colorado Boulder; Graduated 2023 Ph.D.)
- Laurie Lyon (Microbiology; Graduated 2024 Ph.D.) **Committee Chair**

Comprehensive exam committees

- Joshua Kirsch (Microbiology; 2021)
- Alyx Job (Microbiology; 2023)
- Joanna Chau (Microbiology; 2024)

External mentorship Activities:

2023 Mentor for MNIGMS/ NIH (R25GM143298) grant **The Career MODE program: Careers through Mentoring and training in Omics and Data for Early-stage investigators.** PI Fernando Luque; Columbia University.

Grant Support:

Federal Funding:

Current

- | | |
|-----------|---|
| 2020-2025 | NIH-NHLBI R01 HL155691
Characterizing Innate Immune Dysregulation in Tonsils of Individuals with Down Syndrome
Role: Co-Investigator. PI- Verneris |
| 2021-2026 | NIH-NIAID U01 AI150589
Dietary and synbiotic strategies to protect against <i>Clostridioides difficile</i> infection
Role: Principal Investigator |
| 2021-2026 | NIH-NIAMS P30 AR079369
CU Center for the Study of Mucosal Immunobiology in Rheumatic Disease Pathogenesis
Role: Core Director. PI- Holers |
| 2021-2026 | NIH-NIDDK R01 DK128842
Kidney Stone Disease In ADPKD
Role: Co-Investigator. PIs Chonchol/Gitomer |
| 2022-2027 | NIH R01 DK131581
Gut microbiome effects on intestinal barrier function and metabolic syndrome in HIV positive men who have sex with men
Role: Principal Investigator. Co-PIs Palmer, Colgan |
| 2023-2028 | NIH R01 AI172958
Airway Prevotella prime innate immune-mediated protection against lung infection
Role: Co-Investigator. PI- Clark |
| 2024-2028 | NIH R01 CA279604-01A1
Microbiome:MAIT cell crosstalk in tumor immunity
Role: Co-Investigator. PI Tobin |
| 2024-2026 | NIH R21 DK138855-01A1
Effect of ILC3 loss on epithelial barrier integrity during ART Treated HIV
Role: Co-Investigator. PI Neff |

2024-2025 NIH R37 CA218118-06
Effect of Immune-Enhancing Nutrition on Radical Cystectomy Outcomes- MERIT extension
Role: **Principal Investigator** of subcontract. Main PI Hamilton-Reeves: University of Kansas Medical Center

2025 NIH-NIAID
Evaluation of Safety and Efficacy of CRS3123 to Treat Clostridioides difficile infections, Subtask 3.2 Microbiome Analysis
Role: **Principal Investigator** of subcontract. Main PI Ochner: Crestone Inc. Boulder CO

Completed

2004-2006 NIH T32
NIH Institutional Training Grant for Signal Transduction and Cell Cycle Regulation: University of Colorado, Boulder
Role: **Graduate Student**.

2009-2010 NIH-NLM T15 LM009451
Institutional Training Grant for Computational Biosciences: University of Colorado
Role: **Postdoctoral Fellow**. PI Hunter

2011-2015 NIH-NIDDK **K01** DK090285
The role of syntrophic bacteria in methanogenic metabolism in the human gut
Role: **Principal Investigator**

2013-2016 NIH-NIEHS **R21** ES023384
Fungal Exposure and the Respiratory Tract Microbiome
Role: **Co-Investigator**. PI Evans

2014-2020 NIH-NIDDK **R01** DK104047
Factors mediating gut microbiota dysbiosis and metabolic disease in HIV patients
Role: **Principal Investigator**. Co-PI Palmer

2014-2020 Metabolomics supplement to NIH-NIDDK **R01** DK104047
Factors mediating gut microbiota dysbiosis and metabolic disease in HIV patients
Role: **Principal Investigator**. Co-PIs Palmer/Reisdorph

2015-2021 NIH-NIDDK **R01** DK108366
Diet/gut Microbiome Interaction Influence Inflammatory Disease in HIV Patients
Role: **Principal Investigator**. Co-PIs Palmer/Campbell

2017-2022 NIH-NHLBI **R01** HL138639
HIV-associated gut microbiome affects lung immunity and pneumococcal immune response
Role: **Principal Investigator**. Co-PIs Palmer/Campbell

2017-2021 NIH-NHLBI **R01** HL133545
The contributory role of microbial metabolite in the pathogenesis of CKD-dependent vascular calcification
Role: **Co-Investigator**. PI Miyazaki

2020-2022 NIH-NCI **R21** CA253220
Improving immunotherapies to melanoma through modulation of MAIT cell activation by the microbiome
Role: **Principal Investigator**. Co-PIs McCarter/Medina/Gapin

2021-2024 DOD Melanoma Research Program.

The role of the tumor microbiome in mucosal melanoma development and anti-tumor immunity

Role: **Co-Investigator**. PI- Coutts

2023-2024 NIH SBIR Sub-Contract
A novel small molecule therapeutic for acute graft versus host disease
Role: **Principal Investigator** of subcontract. Main PI Mason: Crestone Inc. Boulder CO

Charitable Funding/ Foundation Funding:

Current

2021-2024 The Institute for Cannabis Research.
Microbiome mediated effects of Cannabis and CBD on neurotransmitter-related molecular networks and anxiety.
Role: **Co-Investigator**. PI Reisdorph

Completed

2013-2015 Golfer's Against Cancer Pilot grant program.
Role of the Gut Microbiome in Graft Versus Host Disease following hematopoietic stem cell transplantation.
Role: **Principal Investigator**. Co-PI Nguyen

2014-2016 Peter Emch Foundation grant.
Gut microbiome of Children with Autism Spectrum Disorders
Role: **Principal Investigator**. Co-PI Krajmalnik-Brown

Intramural:

Completed

2011-2013 Colorado Clinical and Translational Science Institute Child and Maternal Health Pilot Grant
The effects of diet alteration strategies on the gut microbiota of children with autism.
Role: **Principal Investigator**

2016-2021 Department of Medicine CU Anschutz
Outstanding Early Career Scholar Award
Role: **Principal Investigator**

2016-2021 Dean's Transformational Research Funding Program. CU Anschutz
GI & Liver Innate Immune Program (GALIIP).
Role: **Core Director**. PI Colgan

2017-2018 Department of Medicine Team Science Award. CU Anschutz
Can intestinal bacteria with putative IL-10 inducing zwitterionic capsular polysaccharide operons provide protection from colitis?"
Role: **Principal Investigator**. Co-PI Collins

2018-2019 Immunology and Microbiology Department Pilot Award CU Anschutz
Effect of gut microbiome on immune development in human immune system (HIS) mice
Role: **Co-Investigator**. PI Pelanda

2019-2021 ALSAM Therapeutics Innovation Grant program. School of Pharmacy CU Anschutz

Effects of green tea-derived microbial and host metabolites on molecular networks and depression

Role: **Co-Investigator**. PI Reisdorph

2019-2020 Associate Dean of Research (ADR) SEED grant. School of Pharmacy CU Anschutz
The Gut Microbiome in Epilepsy in Children/Rats on Ketogenic Diet Treatment
Role: **Co-Investigator**. PI Patel

2020-2021 University of Colorado GI & Liver Innate Immune Program (GALIIP) Pilot Grant.
Investigating the role of the gut and tumor microbiomes in anorectal mucosal melanomas
Role: **Co-Investigator**. PI Coutts

Publications:

Peer-reviewed Publications:

High impact papers noted: *** >1000 citations, ** >500 citations, * >100 citations

These papers have been collectively cited >147,000 times: h-index=74

Co-authorship by my trainees highlighted in **blue text**.

Published prior to enrolling in PhD program

- (1) ⁺ **Lozupone, C.A.**, R. Knight, and L. Landweber. The molecular basis of nuclear genetic code change in ciliates. (2001) **Current Biol.** 11(2):65-74.
- (2) **Lozupone, C.A.**, and D.A. Klein. Molecular and cultural assessment of chytrid and *Spizellomyces* populations in grassland soils. (2002) **Mycologia.** 94:411-420.
- (3) ⁺ **Lozupone C.***, S. Changayil*, I. Majerfeld I, and M. Yarus. Selection of the simplest RNA that binds isoleucine. (2003) **RNA.** 11:1315-1322. *authors contributed equally
- (4) Ardell, D, **C. Lozupone**, and L. Landweber. Polymorphism, recombination and alternative unscrambling in the DNA polymerase alpha gene of the ciliate *Stylonychia lemnae* (Alveolata; class Spirotrichea). (2003). **Genetics.** 165(4):1761-77.
- (5) Legiewicz, M., **C. Lozupone**, R. Knight, and M. Yarus. Size and constant sequences alter selection. (2005) **RNA.** 11:1701-9.

PhD work

- (6) ⁺⁺⁺ **Lozupone, C.A.** and R.D. Knight. UniFrac: A new phylogenetic method for comparing microbial communities. (2005). **Appl Environ Microbiol.** 71:8228-35.
- (7) ⁺⁺⁺ Ley, R.E., F. Backhed, P. Turnbaugh, **C.A. Lozupone**, R.D. Knight, and J.I. Gordon. Obesity alters gut microbial ecology. (2005) **Proc Natl Acad Sci.** 102:11070-11075.
- (8) ⁺⁺⁺ **Lozupone, C.***, M. Hamady*, and R. Knight. UniFrac—an online tool for comparing microbial community diversity in a phylogenetic context. (2006) **BMC Bioinformatics.** 7:371-384.
- (9) ⁺⁺ Liu, Z., **C. Lozupone**, M. Hamady, F.D. Bushman, and R. Knight. Short pyrosequencing reads suffice for accurate microbial community analysis. (2007) **Nucleic Acids Res.** 35:e120.
- (10) ⁺⁺⁺ **Lozupone, C.A.** and R. Knight. Global patterns of bacterial diversity. (2007) **Proc Natl Acad Sci.** 104(27):11436-40.

- (11) ⁺ Knight, R., P. Maxwell, A. Birmingham, J. Carnes, J.G. Caporaso, B.C. Easton, M. Hamady, Z. Liu, **C. Lozupone**, R. Sammut, S. Smit, M. Wakefield, J. Widmann, S. Wikman, S. Wilson, and G.A. Huttlely. PyCogent: a toolkit for making sense from sequence. (2007) **Genome Biol.** 8(8):R171.
- (12) ⁺⁺ Fierer, N., M. Breitbart, J. Nulton, P. Salamon, **C. Lozupone**, R. Jones, M. Robeson, R. Edwards, B. Felts, S. Rayhawk, R. Knight, F. Rohwer, and R.B. Jackson. Metagenomic and small-subunit rRNA analyses of the genetic diversity of bacteria, archaea, fungi, and viruses in soil. (2007) **Appl Environ Microbiol.** 73:7059-66.
- (13) ⁺ D'Souza, M., A.P. Fontenot, D.G. Mack, **C. Lozupone**, S. Dillon, A. Meditz, C.C. Wilson, E. Connick, and B.E. Palmer. Programmed death 1 expression on HIV-specific CD4+ T Cells is driven by viral replication and associated with T cell dysfunction. (2007) **J Immunology.** 179:1979-87.
- (14) ⁺⁺ Xu, J., M.A. Mahowald, R.E. Ley, **C. A. Lozupone**, M. Hamady, E.C. Martens, B. Henrissat, P.M. Coutinho, P. Minx, P. Latreille, H. Cordum, A. Van Brunt, K. Kim, R. Fulton, S.W. Clifton, R.K. Wilson, R.D. Knight, and J.I. Gordon. Evolution of symbiotic bacteria in the distal human intestine. (2007) **PLoS Biol.** 5(7)e156.
- (15) ⁺⁺⁺ **Lozupone C.A.**, M. Hamady, S. Kelley, and R. Knight. Quantitative and qualitative β diversity measures lead to different insights into factors that structure microbial communities. (2007) **Appl Environ Microbiol.** 73:1576-1585.

Postdoctoral work

- (16) ⁺⁺⁺ Ley R.E.*, **C.A. Lozupone***, M. Hamady, R. Knight, and J.I. Gordon. Worlds within worlds: evolution of the vertebrate gut microbiota. (2008) **Nat Rev Microbiol.** 6(10):776-88. * authors contributed equally
- (17) ⁺ **Lozupone C.A.**, M. Hamady, B.L. Cantarel, P.M. Coutinho, B. Henrissat, J.I. Gordon, and R. Knight. The convergence of carbohydrate active gene repertoires in human gut microbes. (2008) **Proc Natl Acad Sci.** 105(39):15076-81.
- (18) ⁺⁺⁺ Ley R.E., M. Hamady, **C. Lozupone**, P.J. Turnbaugh, R.R. Ramey, J.S. Bircher, M.L. Schlegel, T.A. Tucker, M.D. Schrenzel, R. Knight, and J.I. Gordon. Evolution of mammals and their gut microbes. (2008) **Science.** 320(5883):1647-51.
- (19) ⁺⁺ **Lozupone, C.A.** and R. Knight. Species divergence and the measurement of microbial diversity. (2008) **FEMS Microbiol Reviews.** 32(4):557-78.
- (20) ⁺ Zaneveld J, P.J. Turnbaugh, **C. Lozupone**, R.E. Ley, M. Hamady, J.I. Gordon, and R. Knight. Host-bacterial coevolution and the search for new drug targets. (2008) **Curr Opin Chem Biol.** 12(1):109-14.
- (21) ⁺⁺ McKenna P., C. Hoffmann, N. Minkah, P.P. Aye, A. Lackner, Z. Liu, **C.A. Lozupone**, M. Hamady, R. Knight, and F.D. Bushman. The gut microbiome in health, lentiviral infection, and chronic enterocolitis. (2008) **PLoS Pathog.** 4(2):e20.
- (22) Faith, D.P., **C.A. Lozupone**, D. Nipperess, and R. Knight. The cladistic basis for the PD (Phylogenetic Diversity) measure links evolutionary features to environmental gradients and supports broad applications of microbial ecology's 'phylogenetic beta diversity' framework. (2009) **Int. J. Mol. Sci.** 10(11):4723-4741.

- (23) ⁺⁺ Goodman, A.L., N.P McNulty, Y. Zhao, D. Leip, R. Mitra, **C.A. Lozupone**, R. Knight, and J.I. Gordon. Identifying genetic determinants needed to establish a human gut symbiont in its habitat. (2009) **Cell Host Microbe**. 6(3):279-89.
- (24) ⁺ King, A.J., K.R. Freeman, K.F. McCormick, R.C. Lynch, **C. Lozupone**, R. Knight, and S. Schmidt. Biogeography and habitat modeling of high-alpine bacteria. (2010) **Nature Commun**. 1(5):1-6.
- (25) ⁺⁺⁺ **Lozupone, C.**, M.E. Lladser, D. Knights, J. Stombaugh, and R. Knight. UniFrac: an effective distance metric for microbial community comparison. (2010) **ISME J**. 5(2):169-72.
- (26) ⁺ Kuczynski J., Z. Liu Z, **C. Lozupone**, D. McDonald, N. Fierer, and R. Knight. Microbial community resemblance methods differ in their ability to detect biologically relevant patterns. (2010) **Nat Methods**. 7(10):813-9.
- (27) ⁺ Nemergut, D.R, E.K. Costello, M. Hamady, **C. Lozupone**, et al. Global patterns in the biogeography of bacterial taxa (2010) **Environ. Microbiol**. 13(1):135-44.
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- (29) ⁺⁺⁺ Rousk, J., E. Baath, P.C. Brookes, C.L. Lauber, **C. Lozupone**, C. Lozupone, J.G. Caporaso, R. Knight, and N. Fierer. Soil bacterial and fungal communities across a pH gradient in arable soil. (2010) **ISME J**. 4:1340-51.
- (30) ⁺⁺⁺ Caporaso, J.G^{*}., J. Kuczynski^{*}, J. Stombaugh^{*}, K. Bittinger, F.D. Bushman, E.K. Costello, N. Fierer, A.G. Peña, J.K. Goodrich, J.I. Gordon, G. Huttley, S.T. Kelley, D. Knights, J.E. Koenig, R.E. Ley, **C.A. Lozupone**, et al. QIIME Allows Integration and Analysis of High-Throughput Community Sequencing Data. (2010) **Nat Methods**. 7(5):335-6.
- (31) ⁺ Zaneveld, J.R., **C. Lozupone**, J.I. Gordon and R. Knight. Ribosomal RNA diversity predicts genome diversity in gut bacteria and their relatives. (2010). **Nucleic Acids Res**. 38(12):3869-79.
- (32) ⁺⁺⁺ Hamady, M.^{*}, **C. Lozupone**^{*}, R. Knight. Fast UniFrac: Facilitating high-throughput phylogenetic analyses of microbial communities including analysis of pyrosequencing and phylochip data. (2010) **ISME J**. 4(1):17-27. ^{*} authors contributed equally
- (33) ⁺⁺ McNulty, N.P., T. Yatsunencko, A. Hsiao, J.J. Faith, B.D. Muegge, A.L. Goodman, B. Henrissat, R. Oozeer, S. Cools-Portier, G. Gobert, C. Chervaux, D. Knights, **C.A. Lozupone**, R. Knight, A.E. Duncan, J.R. Bain, M.J. Muehlbauer, C.B. Newgard, A.C. Heath, and J.I. Gordon. The impact of a consortium of fermented milk strains on the gut microbiome of gnotobiotic mice and monozygotic twins. (2011) **Sci Transl Med**. 3(106):106ra106.
- (34) ⁺ Knights, D., L.W. Parfrey, J. Zaneveld, **C. Lozupone**, and R. Knight. Human-associated microbial signatures: examining their predictive value. (2011) **Cell Host Microbe**. 10(4):292-6.
- (35) Zaneveld J.R., L.W. Parfrey, W. Van Treuren, **C. Lozupone**, J.C. Clemente, D. Knights, J. Stombaugh, J. Kuczynski, and R. Knight. Combined phylogenetic and genomic approaches for the high-throughput study of microbial habitat adaptation. (2011) **Trends Microbiol**. 19(10):472-82.
- (36) ⁺ Hansen, E.E., **C.A. Lozupone**, F.E. Rey, J. Guruge, A. Narra, J. Goodfellow, M. Wu, A.C. Heath, R. Knight, and J.I. Gordon. "Pan-genome of the dominant human gut-associated archaeon, *Methanobrevibacter smithii*, studied in twins." (2011) **Proc Natl Acad Sci**. 108:4599-606.

- (37) ⁺ Gonzalez, A., J. Stombaugh, **C. Lozupone**, P.J. Turnbaugh, J.I. Gordon, and R. Knight. The mind-body-microbial continuum (2011) **Dialogues Clin Neurosci.** 13(1):55-62.
- (38) ⁺⁺ Yilmaz, P., Kottmann R., *et al.* Minimum information about a marker gene sequence (MIMARKS) and minimum information about any (x) sequence (MIxS) specifications. (2011) **Nature Biotech.** 29(5):415-420.
- (39) ⁺⁺⁺ Caporaso J.G., C.L. Lauber, W.A. Walters, D. Berg-Lyons, **C.A. Lozupone**, P.J. Turnbaugh, N. Fierer, and R. Knight. Global patterns of 16S rRNA diversity at a depth of millions of sequences per sample. (2011) **Proc Natl Acad Sci.** 108:4516-22.
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- (41) ⁺ **Lozupone, C.**, K. Faust, J. Raes, J.J. Faith, D.N. Frank, J. Zaneveld, J.I. Gordon, and R. Knight. Identifying genomic and metabolic features that can underlie early successional and opportunistic lifestyles of human gut symbionts. (2012) **Genome Res.** 22(10):1974-84.
- (42) ⁺⁺⁺ Yatsunencko, T. F.E. Rey, M.J. Manary, I. Trehan, M.G. Dominguez-Bello, M. Contreras, M. Magris, G. Hidalgo, R.N. Baldassano, A.P. Anokhin, A.C. Heath, B. Warner, J. Reeder, J. Kuczynski, J. G. Caporaso, **C.A. Lozupone**, C. Lauber, J.C. Clemente, D. Knights, R. Knight and J.I. Gordon. Human gut microbiome viewed across age and geography (2012). **Nature.** 486(7402):222-7.
- (43) ⁺⁺⁺ The Human Microbiome Consortium. Structure, function, and diversity of the healthy human microbiome. (2012) **Nature.** 486(7402):207-14.
- (44) ⁺⁺⁺ The Human Microbiome Consortium. A framework for human microbiome research (2012). **Nature.** 486(7402):215-21.
- (45) Widmann J., J. Stombaugh, D. McDonald, J. Chocholousova, P. Gardner, M.K. Iyer, Z. Liu, **C.A. Lozupone**, J. Quinn, S. Smit, S. Wikman, J.R. Zaneveld, and R. Knight. RNASAR: An RNA STructural Alignment Repository that provides insight into the evolution of natural and artificial RNAs. (2012) **RNA.** 18(7):1319-27.
- (46) ⁺⁺⁺ Sullam, K.E., S.D. Essinger, **C.A. Lozupone**, M.P. O'Connor, G.L. Rosen, R. Knight, S.S. Kilham, and J.A. Russell. Environmental and ecological factors that shape the gut bacterial communities of fish: a meta-analysis. (2012) **Mol Ecol.** 21(13):3363-78.
- (47) Almodovar, S., R. Knight, A.A. Allshouse, S. Roemer, **C. Lozupone**, D. McDonald, J. Widmann, N.F. Voelkel, R.J. Shelton, E.B. Suarez, K.W. Hammer, C. Goujard, N. Petrosillo, G. Simonneau, P.Y. Hsue, M. Humbert, and S.C. Flores. Human Immunodeficiency Virus nef Signature Sequences Are Associated with Pulmonary Hypertension. (2012) **AIDS Res Hum Retroviruses.** 28(6):607-18.
- (48) arb
- (49) ⁺⁺⁺ Song S., C. Lauber, E.K. Costello, **C.A. Lozupone**, G. Humphrey, D. Berg-Lyons, J.G. Caporaso, D. Knights, J.C. Clemente, S. Nakielnny, J.I. Gordon, N. Fierer, R. Knight. ting family members share microbiota with one another and with their dogs. (2013). **eLife.** 2:e00458.

Assistant Professor

- (50) **++ Lozupone, C.**, M. Li, T.B. Campbell, S.C. Flores, D. Linderman, M.J. Gebert, R. Knight, A.P. Fontenot, and B.E. Palmer. Alterations in the Gut Microbiota Associated with HIV-1 Infection. (2013). **Cell Host and Microbe**. 14(3):329-339.
- (51) **+ Lozupone, C.**, A. Cota-Gomez, B.E. Palmer, D.J. Linderman, E.S. Charlson, E. Sodergren, M. Mitreva, S. Abubucker, J. Martin, G. Yao, T.B. Campbell, S.C. Flores, G. Ackerman, J. Stombaugh, L. Ursell, J.M. Beck, J.L. Curtis, V.B. Young, S.V. Lynch, L. Huang, G.M. Weinstock, K.S. Knox, H. Twigg, A. Morris, E. Ghedin, F.D. Bushman, R.G. Collman, R. Knight, and A.P. Fontenot; for the Lung HIV Microbiome Project. Widespread Colonization of the Lung by *Tropheryma* in HIV Infection. (2013). **Am J Respir Crit Care Med**. 187(10):1110-7.
- (52) **+ Lozupone, C.A., M.E. Rhodes**, C.P. Neff, A.P. Fontenot, T.B. Campbell, and B.E. Palmer. HIV-induced alteration in gut microbiota: Driving factors, consequences, and effects of antiretroviral therapy. (2014). **Gut Microbes**. 5(4):562-70.
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- (54) **+ Krajmalnik-Brown, R., C. Lozupone**, D.W. Kang, and J.B. Adams. Gut bacteria in children with autism spectrum disorders: challenges and promise of studying how a complex community influences a complex disease. (2015) **Microb Ecol Health Dis**. 26:26914.
- (55) McDonald, D., M. Hornig, **C. Lozupone**, J. Debelius, J.A. Gilbert, and R. Knight. Towards large-cohort comparative studies to define the factors influencing the gut microbial community structure of ASD patients. (2015). **Microb Ecol Health Dis**. 26:26555.
- (56) **Lozupone, C.** and R. Knight. The Unifrac Significance Test is Sensitive to Tree Topology. (2015) **BMC Bioinformatics**. 16:211.
- (57) **+ Neff, C.P.***, **M.E. Rhodes***, **K.L. Arnolds**, C.B. Collins, **J. Donnelly**, **N. Nusbacher**, P. Jedlicka, J.M. Schneider, M.D. McCarter, **M. Shaffer**, S.K. Mazmanian, B.E. Palmer*, and **C.A. Lozupone***. Diverse intestinal bacteria with putative zwitterionic capsular polysaccharide operons can induce IL-10 and T regulatory cells. (2016). **Cell Host and Microbe**. 20:535-547. * authors contributed equally
- (58) **Arnolds, K.L.**, and **C.A. Lozupone**. Striking a balance with help from our little friends – how the gut microbiota contributes to immune homeostasis. (2016). **Yale Journal of Biology and Medicine**. 89:389-395.
- (59) **Li, S.X., A.J.S Armstrong**, C.P. Neff, **M. Shaffer**, **C.A. Lozupone***, and B.E. Palmer*. Complexities of gut microbiome dysbiosis in the context of HIV infection and antiretroviral therapy. (2016) **Clinical Pharmacology and Therapeutics**. 99:600-611. * joint last authors
- (60) Mikkelsen, K.M., **C.A. Lozupone**, J.O. Sharp. Altered edaphic parameters couple to shifts in terrestrial bacterial community structure associated with insect-induced tree mortality. (2016). **Soil Biology and Biochemistry**. 95:19-29.
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- (63) [†] **Stanislawski, M.A.**, D. Dabelea, B.D. Wagner, M.K. Sontag, **C.A. Lozupone***, and M. Eggesbø*. Pre-pregnancy weight, gestational weight gain, and the gut microbiota of mothers and their infants. (2017) **Microbiome**. 4;5(1):113. * joint last authors
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- (65) **Liu, C.**, D.N. Frank, M. Horch, S. Chau, D. Ir, E.A. Horsch, K. Tretina, K. van Besien, **C.A. Lozupone***, and V.H. Nguyen*. Acute gastrointestinal GvHD prognosis and the pre-transplant gut microbiota of allogeneic hematopoietic stem cell transplant recipients and donors. (2017) **Bone Marrow Transplantation**. 52(12):1643-1650. * joint last authors
- (66) **Shaffer, M., A. Armstrong**, V. Phelan, N. Reisdorph, and **C. Lozupone**. Integration of the Microbiome and Metabolome Allows for Insights Into Health and Disease. (2017) **Translational Research**. 17:30232-3.
- (67) [†] Yang, I.V., **C.A. Lozupone**, and D. Schwartz. The environment, epigenome, and asthma. (2017) **Journal of Allergy and Clinical Immunology**. 140:14-23.
- (68) Pinto Cardoso, S., **C. Lozupone**, O. Briceño, S. Alva-Hernández, N. Téllez, A. Aguilar, A. Murakami-Ogasawara, and G. Reyes-Terán. Fecal Bacterial Communities in treated HIV infected individuals on two antiretroviral regimens. (2017) **Scientific Reports**. 7:43741.
- (69) ⁺⁺⁺ Weiss, S. Z. Xu, S. Peddada, A. Amir, K. Bittinger, A. Gonzalez, **C. Lozupone**, J. Zaneveld, Y. Vazquez-Baeza, A. Birmingham, E.R. Hyde, R. Knight. Normalization and microbial differential abundance strategies depend upon data characteristics. (2017) **Microbiome**. 5:27.

Associate Professor

- (70) [†] **Armstrong, A.J., M. Shaffer, N.M. Nusbacher**, C. Griesmer, S. Fiorillo, J.M. Schneider, C.P. Neff, **S.X. Li**, A.P. Fontenot, T. Campbell, B.E. Palmer*, **C.A. Lozupone***. An exploration of Prevotella-rich microbiomes in HIV and men who have sex with men. (2018) **Microbiome**. 5;6(1):198. *Joint last authors.
- (71) [†] **Stanislawski, M.A.**, D. Dabelea, B.D. Wagner, N. Iszatt, M.K. Sontag, R. Knight, **C.A. Lozupone***, and M. Eggesbø* Gut Microbiota in the First 2 Years of Life and the Association with Body Mass Index at Age 12 in a Norwegian Birth Cohort. (2018) **mBIO**. 9(5) *Joint last authors.
- (72) [†] Ye, H, B. Adane, N. Khan, E. Alexeev, **N. Nusbacher**, M. Minhajuddin, B.M. Stevens, A.C. Winters, X. Lin, J.M. Ashton, E. Purev, L. Xing, D.A. Pollyea, **C.A. Lozupone**, N.J. Serkova, S.P. Colgan, C.T. Jordan. Subversion of Systemic Glucose Metabolism as a Mechanism to Support the Growth of Leukemia Cells. (2018) **Cancer Cell**. 34(4):659-673.
- (73) [†] **Hazleton, K.***, **M. Kriss***, **N. Nusbacher**, **C. Martin**, and **C. Lozupone**. Low Diversity Gut Microbiota Dysbiosis: Drivers, Functional Implications and Recovery. (2018) **Current Opinion in Microbiology**. 44:34-40.
- (74) ⁺⁺ McDonald, D, et al.; **American Gut Consortium**, R. Knight. American Gut: an Open Platform for Citizen Science Microbiome Research. (2018) **mSystems**. 15;3(3).
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