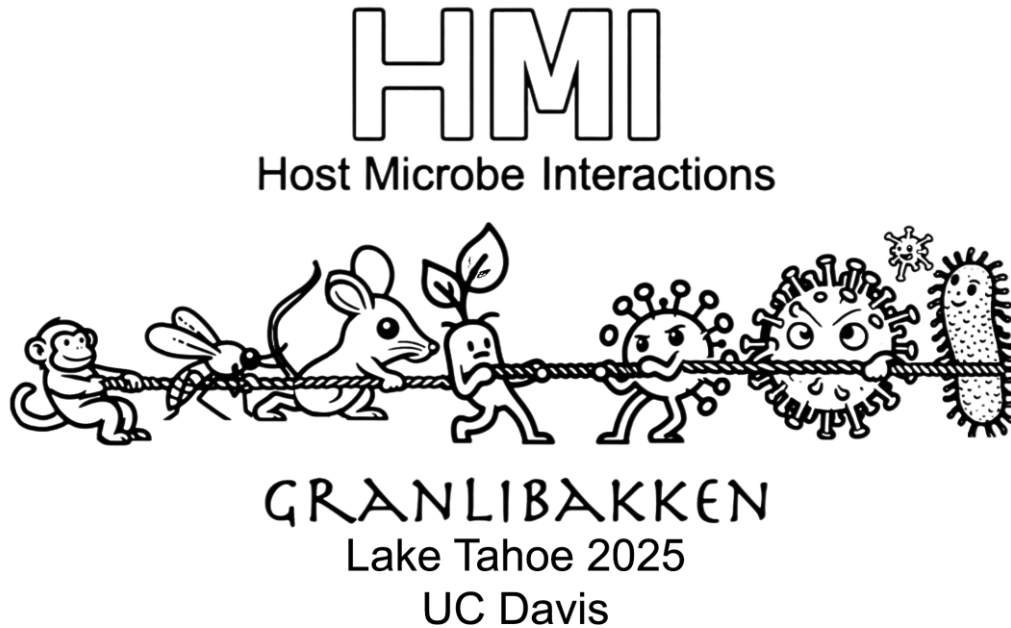


PROGRAM



16th Annual UC Davis Research Retreat on Host Microbe Interaction (HMI)

Granlibakken, Oct. 9-10, 2025

ORGANIZING COMMITTEE

Co-Chairs:



Andreas Bäumler, Ph.D.

Distinguished Professor and Vice Chair of Research, Medical Microbiology and Immunology



Satya Dandekar, Ph.D.

Distinguished Professor and Chair, Medical Microbiology and Immunology

AV Tech Support: Hugo Masson / hlmasson@health.ucdavis.edu

THURSDAY, OCT. 9

12 p.m. Opening Reception and Lunch (Granhall)

1-2:45 p.m. Scientific Session 1 (Mountain-Lake Conference Room)

Moderator: *Stephen McSorley*, Department of Anatomy, Physiology and Cell Biology,
School of Veterinary Medicine

1 p.m. Opening Address

1:15-1:35 *Sanchita Bhatnagar*

Department of Medical Microbiology and Immunology
School of Medicine

Title: From Silence to Solutions: Rewriting Gene Therapy for Rett Syndrome

1:45-2:05 *Antonio Serapio Palacios*

Department of Microbiology and Molecular Genetics
College of Biological Sciences

Title: Molecular Weapons of Pathogenic and Commensal Bacteria at the Gut Interface

2:15-2:25 *Leticia Lázaro-Antón* (Renée Tsoilis lab)

Department of Medical Microbiology and Immunology
School of Medicine

Title: IRE1 α -dependent generation of Sphingosine-1-phosphate links ER Stress to NOD1/2-mediated inflammation in response to *Brucella abortus* infection

2:30-2:40 *Vy Pham* (Stephen McSorley lab)

Department of Anatomy, Physiology and Cell Biology
School of Veterinary Medicine

Title: Visualization of *Salmonella* Typhi-specific CD4 T cell activation in a new typhoid mouse model

2:45-3:15 p.m. Coffee Break

3:15-6:05 p.m. Scientific Session 2 (Mountain-Lake Conference Room)

Moderator: **Bennett Penn**, Division of Infectious Diseases, School of Medicine

3:15-4 AMID-T32-Sponsored Keynote Lecture

Denise Monack

Stanford University

Title: Persistence pays: How Salmonella Hides, Thrives, and Spreads

4:10-4:20 Lauren Radlinski (Andreas Bäumler lab)

Department of Medical Microbiology and Immunology

School of Medicine

Title: Hormones reshape the vaginal microenvironment to control microbial respiration

4:25-4:35 Renata Assis (Abhaya Dandekar lab)

Department of Plant Biology and Plant Sciences

College of Biological Sciences

Title: Cracking the Code of Walnut-Pathogen Interactions Leading to Disease

4:40-5:10 Break and Poster setup

5:10-5:55 AMID T32-sponsored Keynote Lecture

Victor Nizet

University of California San Diego

Title: Novel Biomimetic Cell Membrane-Coated Nanotherapies and Nanovaccines for Bacterial Pneumonia and Sepsis

6:05-7:30 p.m. Dinner (Granhall)

7:30-9 p.m. Poster Session (Bay Room)

9-12 p.m. Social (Ski Hut)

FRIDAY, OCT. 10

7:30-9 a.m. Breakfast (Granhall)

9-10:05 a.m. Scientific Session 3 (Mountain-Lake Conference Room)

Moderator: *Jeroen Saeij*, Department of Pathology, Microbiology and Immunology,
School of Veterinary Medicine

9-9:20

Alba Alfonso Garcia

Department of Biomedical Engineering

College of Engineering

Title: Label-free imaging of gastrointestinal disease

9:25-9:35

Rajalekshmy Padmakumari (Sasha Shafikhani lab)

Department of Dermatology

School of Medicine

Title: Synergy Between Immune System and Antibiotics Drives Infection Control in Mice

9:40-9:50

Kunal Dixit (Maria Marco lab)

Department of Food Science and Technology

College of Agricultural and Environmental Sciences

Title: Metagenomic mining of bacteriocin coding genes to uncover microbial potential of pig gut microbiome

9:55-10:05

Abigail Ray (Bennet Penn lab)

Department of Medicine, Division of Infectious Diseases

School of Medicine

Title: How CBL and FAF2 Shape the Innate Immune Response to Mycobacterium tuberculosis

10:05 -10:40 a.m. Coffee Break

10:40 -12 p.m. Scientific Session 4 (Mountain Conference Room)

Moderator: *Sebastian Winter*, Department of Medicine, Division of Infectious Diseases

- 10:40-10:55 **Awards for poster presenters:** *Satya Dandekar*, Department of Medical Microbiology and Immunology, School of Medicine
- 10:55-11:15 ***Guodong Zhang***
Department of Nutrition
College of Agricultural and Environmental Sciences
Title: Gut Microbiota in Host Eicosanoid Metabolism
- 11:20-11:30 ***Ikaika Loque*** (Satya Dandekar lab)
Department of Medical Microbiology and Immunology
School of Medicine
Title: Reviving anti-viral mucosal immunity using mesenchymal stem cell therapy
- 11:35-11:45 ***Parvanendhu Pradeep Kumar*** (Priya Shah lab)
Department of Chemical Engineering
College of Engineering
Title: Mapping of arenavirus-host protein interactions using experimental and computational approaches
- 11:50-12 ***Andres Orea*** (Angela Gelli Lab)
Pharmacology
School of Medicine
Title: Discovery and Development of Novel Antifungal Peptides for the Treatment of Systemic Mycoses
- 12-2 p.m. **Lunch (Granhall)** *

Thank you to our Poster Judges

Anaïs Larabi, Medical Microbiology and Immunology

Jee-Yon Lee, Medical Microbiology and Immunology

Eric Nonnecke, Medical Microbiology and Immunology

Hannah Savage, Veterinary Medicine: Pathology, Microbiology and Immunology

Vladimir Diaz-Ochoa, Veterinary Medicine: Pathology, Microbiology and Immunology

SIZE OF POSTERS: standard poster size 36x24

SET-UP FOR POSTER SESSION: October 9, Bay Room, 4:40 – 5:10 p.m.

POSTER JUDGING:

- 7:45 – 8:45
- Judges have five minutes per poster for judging
- Please be on time and prepared for a five minute or less poster presentation with assigned judge

Poster Presenters

Aglaia 'Lina' Ntokou, Fibroblasts as the Gatekeepers of Immune Cell Infiltration

Alfredo 'Freddy' Chavez-Arroyo, Functional genomics of E. coli Nissle using in vivo Tn-Seq reveals genes critical for survival and competition during Salmonella infection

Alexander Low, Interrogating the Role of Actin Binding Proteins in Microbial Pathogenesis and Host Defense

Andres Orea, Discovery and Characterization of Novel Antifungal Peptides Using the One-Bead One-Compound (OBOC) Combinatorial Technology

Aurore Demars, Overcoming itaconate restriction permits Salmonella Typhi infection in the mouse

Brianna Ramirez, Macrophage Dynamics in the Olfactory Epithelium Following Pathogen Exposure

Caroline de Moraes de Siqueira, The Toxoplasma dense granule effector GRA66 counteracts RARRES3 to evade IFN γ restriction

Chase Hawes, IL-10 Blockade During Vaccination Enhances SIV Specific T cell Immunity in Rhesus Macaques

Claire Morris, Determining the protective role of hepatic CD4 resident memory T- cells in Salmonella infection

Clancy Lee, Immunogenicity of HIV Fusion Peptide Displayed on Adenovector Capsids

Deepa Dehari, Toxicity Assessment of CCL3 in Diabetic Mice: A Biochemical and Histopathological Study

Di Zhu, Preventive Effect of Lactobacillus plantarum Against Clostridium perfringens Infection

Dylan Kramer, Microbial biotherapeutic metabolite promotes resilience to aflatoxin pathology across the gut-liver axis

Poster Presenters

Eileen Garcia-Fuentes, The Contribution of Nitrite Respiration on AIEC Colonization

Evan Roybal, Exploring the role of *Ralstonia solanacearum*'s accessory genome in overcoming disease resistance in tomato

Getnet Tadege, Single Cell-RNA Sequencing Reveals IL-10 Dysregulation as the Culprit Underlying Impaired Infection Control in Diabetic Wounds

Izabelle Costa, Uncovering hepatocyte defenses against bacterial dissemination

Jack Bartlett, Biotransformation of PFAS as Mediated by *Hermetia illucens*

Lalita Bechtold, Identifying the causes of type 1 diabetes associated gut dysbiosis

Natasha Tanner, The Role of Lactate in Intestinal Epithelial Cells During Non-Infectious Colitis

Nicholas Bonagura, Investigating the Impact of Accessory Genes on Type VI Secretion System Killing by Plant Pathogenic *Ralstonia*

Noah Guillome, Insights Into Anti-lipase Immunity Genes in the Type VI Secretion System (T6SS) of Plant Pathogenic *Ralstonia* spp

Parvanendhu Pradeep, Mapping of arenavirus-host protein interactions using experimental and computational approaches

Rajalekshmy Padmakumari, CCL3 and LPS Combination Therapy Significantly Reduces Infection and Stimulates Wound Healing in Diabetic Mice by Boosting Pro-Inflammatory Responses

Ryan Parisi, Geography of Host-Microbe Interaction in a Solitary Bee Species

Scott Mahan, Colonic reactive oxygen species helps prevent intestinal inflammation

Sebastian Jose Perez-Orozco, Lysine uptake by AIEC enhances its colonization

Somrita Basu, Elucidating the role of *Toxoplasma* effectors MYR1, TEEGR, and IST in parasite dissemination

Sophie Gretler, *S. Typhi* evades colonization resistance mediated by the gut microbiota to disseminate systemically

Stephanie Martinez Beltran, Host Detection vs. Immune Evasion: The Role of Parasitophorous Vacuole Membrane Composition in *Toxoplasma gondii* Survival

Subah Soni - Engineering rice root exudation for reduced greenhouse gas emissions

Vivian Le, A Cyclophosphamide Mouse Model to Study Chemotherapy-Associated Loss of Colonization Resistance

Vy Pham, Visualization of *Salmonella Typhi*-specific CD4 T cell activation in a new typhoid mouse model

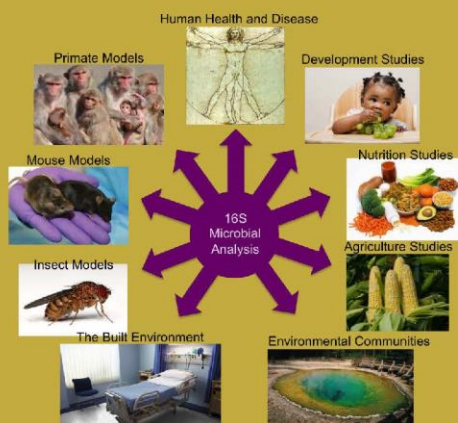


Host-Microbe Systems Biology Core

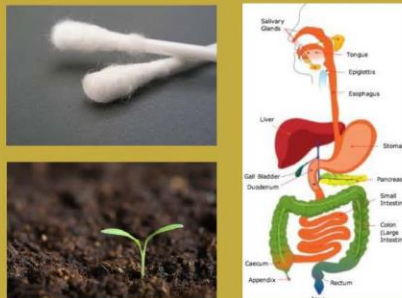
Department of Medical Microbiology and Immunology, University of California, Davis, CA

ucdmc.ucdavis.edu/medmicro/hmsbcore (530) 754-7850

Microbial community analysis of biologically relevant models utilizing high-throughput sequencing

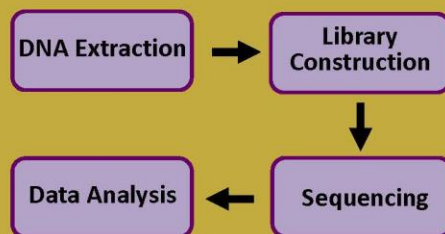


Expertise in DNA extraction methods including low input samples and those with inhibitory elements



- Skin Swabs
- Bronchoalveolar Lavage
- Soil/Environmental
- Gut Contents/Fecal

Complete start to finish workflows including DNA extraction, library preparation, sequencing in collaboration with DNA Tech Core, and preliminary analysis of microbiota



Further analysis options in collaboration with Bioinformatics Core