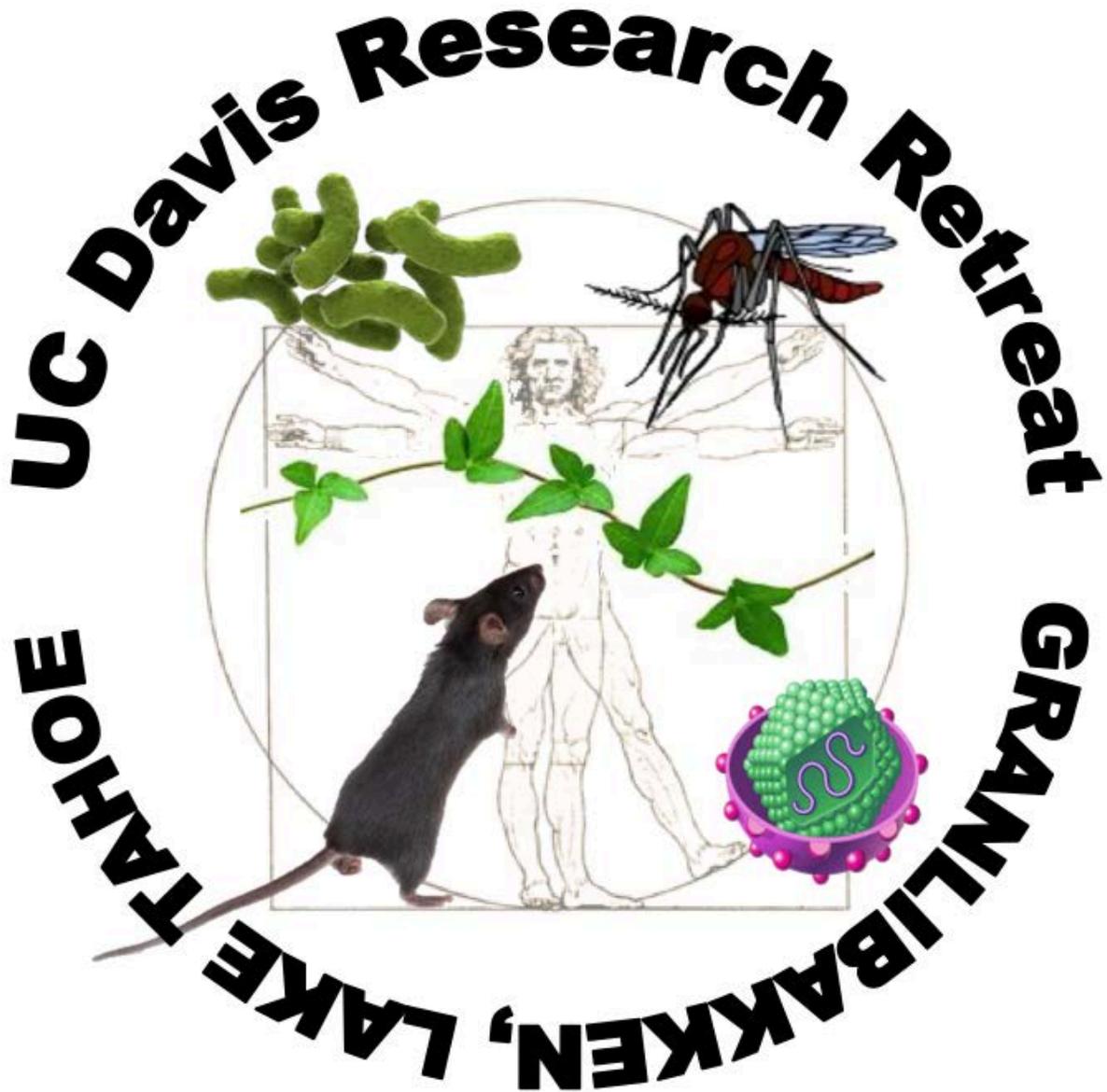


PROGRAM



October 24th to 25th, 2019



***13th Annual UC Davis Research
Retreat on Host Microbe Interaction
(HMI)***

Granlibakken, October 24th-25th, 2019

ORGANIZING COMMITTEE

Co-Chairs:



Andreas Bäumler, Ph.D.

Professor and Vice Chair of Research, Medical Microbiology and Immunology



Satya Dandekar, Ph.D.

Professor and Chair, Medical Microbiology and Immunology



PROGRAM 2019 UC DAVIS HMI RETREAT

October 24

12:00 pm **Opening Reception and Lunch (Granhall)**

1:00-3:10 pm **Scientific Session 1 (Mountain-Lake Conference Room)**

Moderator: **Stephen McSorley** Director, Center for Comparative Medicine



1:00 **Opening Address**

1:15-1:45 ***Sebastian E. Winter***



University of Texas Southwestern Medical Center

Title: Gut microbiota metabolism during health and disease

1:55-2:15

Sungjin Kim



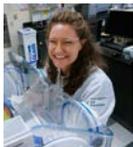
Department of Medical Microbiology and Immunology

School of Medicine

Title: Adaptive natural killer cells induced by cytomegalovirus infection

2:25-2:35

Britta Heiss (Davis Mills lab)



Department of Food Science and Technology

College of Agriculture and Environmental Sciences

Title: Bifidobacterium and the human milk oligosaccharide 2'-fucosyllactose: a case of diet overcoming colonization resistance

2:40-2:50

Greg Walker (Renée Tsohis lab)



Department of Medical Microbiology and Immunology

School of Medicine

Title: Malaria compromises innate defenses against Salmonella gut colonization



1:00-3:10 pm Scientific Session 1 (Mountain-Lake Conference Room)

2:55 – 3:05

Taylor Reiter (Titus Brown lab)



Department of Population Health and Reproduction

School of Veterinary Medicine

Title: Finding unknown and cosmopolitan k-mers in inflammatory bowel disease metatranscriptomes

3:10-3:40 pm Coffee Break

3:40-5:30 pm Scientific Session 2 (Mountain-Lake Conference Room)

Moderator: **Satya Dandekar**, Chair, Medical Microbiology and Immunology



3:40-4:00

Danielle Lemay

USDA ARS Western Human Nutrition Research Center

Title: Host-microbe gene expression during idiopathic chronic diarrhea in macaques



4:10-4:30

Stephen McSorley

Center for Comparative Medicine

Department of Anatomy, Physiology and Cell Biology

School of Veterinary Medicine

Title: Immunology and infection



4:40-4:50

Brittany Miller (Andreas Baumler lab)

Department of Medical Microbiology and Immunology

School of Medicine

Title: Hydrogen peroxide shapes bacterial growth at the colonic epithelial interface



4:55-5:05

Fauna Smith (Nicole Baumgarth lab)

Center for Comparative Medicine

Pathology Microbiology and Immunology

School of Veterinary Medicine

Title: Mechanisms of B-1 cell activation and differentiation in response to infection



5:10-5:20 pm Up goer five challenge (Mountain-Lake Conference Room)

Moderator: **Bevin English** (Renée Tsohis Lab),

Department of Medical Microbiology and Immunology



C. Joy E. Walters (Satya Dandekar lab)

Department of Medical Microbiology and Immunology

School of Medicine

Title: Power cells save the living wall from the tiny bad ones



Cintia Helena Duarte Sagawa (Abhaya Dandekar lab)

Department of Plant Biology and Plant Sciences

College of Biological Sciences

Title: Helping the trees fight the bad little cells

5:30-6:00pm Break

Set-up for poster session

6:00-7:00pm AMID T32-sponsored Keynote Lecture

Moderator: **Douglas Toshio Akahoshi** (Chuck Bevins Lab), AMID T32 Fellow



Manuel R. Amieva

Stanford University

Title: A microscopic journey into the bacterial hideouts used by *Helicobacter pylori* to colonize, persist and cause disease in the human stomach

7:00-8:00pm Dinner (Granhall)

8:00-9:30pm Poster Session (Lake Room)

Poster presenters must be at posters during poster session for judging. Cash bar and dessert available.

9:30-12:00 pm Social (Ski Hut)

October 25

7:30-9:00am Breakfast (Granhall)

9:00-10:30am Scientific Session 3 (Mountain-Lake Conference Room)

Moderator: **Abhaya Dandekar**, Professor, Plant Biology and Plant Sciences



9:00-9:20

Priya S. Shah



**Department of Microbiology and Molecular Genetics
College of Biological Sciences**

Title: Flavivirus non-structural proteins: not just for replication

9:30-9:50

Carlito Lebrilla



**Department of Chemistry
College of Letters and Sciences**

Title: Carbohydrate structures and modulation of the gut microbiota

10:00-10:10

Mariana Guedes Weber (Satya Dandekar Lab)



**Department of Medical Microbiology and Immunology
School of Medicine**

Title: Enhanced gut mucosal immunity and SIV suppression after mesenchymal stem cell transfer

10:15 -10:25

Melissa Kardish (Jonathan Eisen lab)



**Genome Center
Department of Evolution and Ecology
College of Biological Sciences**

Title: Host disease susceptibility alters microbiome response to an experimental warming treatment

10:30 -10:50am Coffee Break



10:50am-12:30pm Scientific Session 4 (Mountain Conference Room)

Moderator: **Sabastian Winter**, UT Southwestern Medical Center



10:50-11:00 Awards for poster presenters and *up goer five* challenge

11:00-11:20

Rachel L. Vannette



Department of Entomology and Nematology

College of Agricultural and Environmental Sciences

Title: Ecology of nectar microbes

11:25-11:45

Mary Kable



USDA ARS Western Human Nutrition Research Center

Department of Nutrition

College of Agricultural and Environmental Sciences

Title: The role of gut bacteria in mediating proposed health benefits of *Moringa oleifera* leaf consumption

11:50 -12:00

Paulo Zaini (Abhaya Dandekar lab)



Department of Plant Biology and Plant Sciences

College of Biological Sciences

Title: Engineering resistance to fungal pathogens by RNAi-mediated gene silencing

12:05-12-15

Zach Bendiks (Maria Marco lab)



Department of Food Science and Technology

College of Agriculture and Environmental Sciences

Title: Dietary fiber and the gut microbiome: studies on type 2 resistant starch

12:20-12-30

Claire Shaw (Matthias Hess lab)



Department of Animal Science

College of Agriculture and Environmental Sciences

Title: Moo-delung the Rumen: A Comparison of In-Vitro Rumen Models

12:30-2:00pm Lunch (Granhall)

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POSTER SESSION (Lake Room 8:00 - 9:30pm)

Thank you to our Poster Judges!

Mary Kable, ARS Western Human Nutrition Research Center
Vladimir Diaz-Ochoa, Medical Microbiology and Immunology
Hiroataka Hiyoshi, Medical Microbiology and Immunology
Danielle Lemay, ARS Western Human Nutrition Research Center
Sumathi Sankaran, Medical Microbiology and Immunology

SIZE OF POSTER BOARDS: 4'x8'; POSTER SIZE: 4'x4'

SET-UP FOR POSTER SESSION, October 24 - 5:30 – 6 PM

POSTER JUDGING: 8:15 – 9:15

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

Can effector molecules of innate immunity target microbial mobility? **Douglas Akahoshi**

HIV Associated Microbial Translocation Identified by 16S Sequencing **Juan Arredondo**

Zika Virus in the Reproductive System of Rhesus Macaques **Erin Ball**

Developing a Genome-wide RNAi Knock Down Screen in Entamoeba histolytica **Akhila Bettadapur**

PPARs activator shifts colonic epithelial metabolism during colitis **Stephanie Cevallos**

The Role of Tissue Resident Memory in Vaccine Mediated Protection against Salmonella **Claire Depew**

Neuroinflammation and CNS HIV-1 establishment following mucosal SHIV transmission in rhesus macaques **Sonny Elizaldi**

The ER stress sensor IRE1a is required for metabolic reprogramming of macrophages during Brucella abortus infection **Bevin English**

Zika Virus NS4A Interaction with Host ANKLE2 Leads to Microcephaly **Adam Fishburn**

Evaluation of Three In-Vitro Platforms to Study Ruminant Gastrointestinal Function **Maria Gonzalez**

PPAR-alpha targeted mitochondrial bioenergetics mediate repair of intestinal barriers at the host-microbe intersection during SIV infection **Katti Horng**

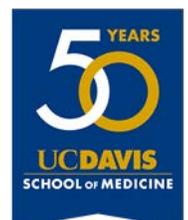
Gut barrier repair by microbial metabolite-induced epigenetic modification in SIV infection **Shuang Hu**

Circulating memory is sufficient for protection against secondary chlamydia infection **Jasmine Labuda**

Subtyping irritable bowel syndrome using the biomarker calprotectin identifies risk factors and potential treatment targets **Jee-Yon Lee**

Different host cell types provide discrete respiratory niches for Salmonella and E.coli in the gut **Megan Liou**

Impacts of larva-acquired Aedes aegypti microbiota on vector competence for Zika virus **William Louie**



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Trogocytosis by Entamoeba histolytica mediates acquisition and display of human cell membrane proteins and evasion of lysis by human complement **Hannah Miller**

Identifying the viral determinants in which Dengue NS5 antagonizes PAF1C **Ariana Nagainis**

Effective clearance of Clymaydia from the female reproduction tract in the absence of the Th1 cells **Jordan Rixon**

Rapid gut epithelial repair through microbiota-mediated rescue of Tryptophan metabolism in HIV/SIV infection **Clarissa Santos Rocha**

Finding the weak spots: investigating how bacterial secreted proteins induce disease susceptibility in plants **Cintia Sagawa**

The role of Bacteroides in reducing foodborne pathogens in poultry **Hannah Savage**

Probing Host-Microbe interactions through glycomics and glycoproteomic methods **Ying Sheng**

Elucidating neutrophilic control of non-typhoidal Salmonella causing invasive disease **Annica Stull-Lane**

Investigating the role of CBL as a repressor of antiviral response **Tina Truong**

The induction of the unfolded protein response by Brucella abortus T4SS effector VceC contributes to killing of trophoblasts **April Tsai**

Mesenchymal Stem Cell Therapy Enhances Gut Mucosal Immunity in the SIV Model of AIDS **Joy Walters**

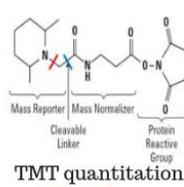
Endogenous Enterobacteriaceae underlie variation in infections **Eric Velazquez**

Understanding the Role of the Salmonella Typhi vi Capsular Polysaccharide in Neutrophil and Macrophage Phagocytosis **Lillian Zhang**

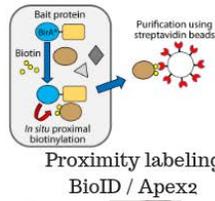


Proteomics Core Facility

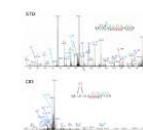
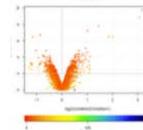
UC Davis Genome Center
 proteomics.ucdavis.edu
 UCDProteomics



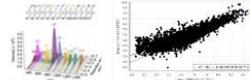
New Equipment



Amino Acid Analysis



N-terminus sequencing



Proteomics Classes

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

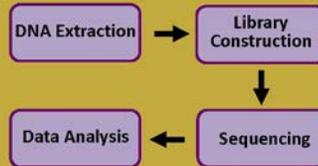


Expertise in DNA extraction methods including low input samples and those with inhibitory elements



- 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

Bioinformatics Core Facility

at the UC Davis Genome Center

1000001 • 1000011 • 1000111 • 1010100

The Bioinformatics Core at the UC Davis Genome Center has over a decade of experience in helping solve a wide variety of bioinformatics problems, large and small. We have three main areas of expertise:

Data Analysis	Research Computing	Training
Intelligently analyzing data from genomics, and other projects, to help drive research forward	Helping build high-performance software and hardware bioinformatics solutions	Providing acclaimed training workshops that will equip people with in-demand bioinformatics skills

**Up Goer Five Challenge
People's Choice Voting Ballot**

VOTE FOR 1

C. Joy E. Walters

Cintia Helena Duarte Sagawa

