2025 Microbiology and Immunology Departmental Retreat

Iowa Memorial Union
Richey Ballroom & Black Box Theater
August 15, 2025
125 N Madison St, Iowa City, IA 52245

Schedule of Events

Welcome & Opening Remarks
Moderator: Adam Mailloux, PhD
8:00 a.m. – 8:15 a.m.

Trainee Talks
Moderator: Caroline Vermilya
8:15 a.m. – 9:15 a.m.
Each participant will give a 10-minute talk followed by a short Q&A

-Hannah Van Ert	*Maury lab*
-Rosa Sava	*Gebhardt lab*
-Stephanie Clark	*Sinn lab*
-Shraddha Tripathi	*Wu lab*

Coffee Break
9:15 a.m. – 9:30 a.m.

New Faculty Talks
Moderator: Filiz Korkmaz, PhD
Each new faculty will give a 20-minute talk with a short Q&A
9:30 a.m. – 10:30 a.m.
-Dr. Amanda Dudek, Assistant Professor
-Dr. Alex Kleinpeter, Assistant Professor

Poster Session I
Moderator: Adam Mailloux, PhD
10:30 a.m. – 11:45 a.m.

Lunch Break
11:45 a.m. – 12:45 p.m.

Poster Session II
Moderator: Filiz Korkmaz, PhD
12:45 p.m. – 2:15 p.m.

Coffee Break
2:15 p.m. – 2:30 p.m.

Trainee Talks
Moderator: Marla Shaffer
2:30 p.m. – 3:30 p.m.
Each participant will give a 10-minute talk followed by a short Q&A

-Fernando Santana	*Korkmaz lab*
-Kyle Rapchak	*Tucker lab*
-Diana Jung	*Roller lab*
-Lu Tan	*Perlman lab*

Keynote Speaker: Dr. Sean Crosson Michigan State University
Moderator: Rosa Sava
3:30 p.m. – 4:30 p.m.

"Microbial adaptation across environments"

Reception and Poster Award Announcements
Moderator: Filiz Korkmaz, PhD
4:30 p.m. – 6 p.m.

Keynote Speaker Biography

Sean Crosson, PhD
Professor Rudolph Hugh Endowed Chair
Department of Microbiology and Molecular Genetics
Michigan State University

Sean Crosson hails from Grayson County, Texas. He received his B.A. in Biology from Earlham College, a Ph.D. in Biochemistry and Molecular Biophysics from the University of Chicago, and completed postdoctoral training at Stanford University.

Sean is currently the Rudolph Hugh Professor at Michigan State University, where he leads a research group investigating the biology of bacteria that occupy diverse environments, from freshwater and soil ecosystems to the interior of mammalian cells. His lab uses a cross-disciplinary toolkit to explore how bacterial cells sense and respond to dynamic physical and chemical changes in their surroundings.

Poster Presentations

1. Metabolic Interplay Between Neutrophils and *Neisseria gonorrhoeae* through Computational Systems Biology
Cole Andersen, Graduate Student
Aimee Potter, PhD, Assistant Professor, Microbiology and Immunology.

2. Neuropathogenesis of Ebola
Omar Aristizabal, Undergraduate Student
Dr. C. Sabrina Tan, MD, Associate Professor, Internal Medicine

3. Carboxypeptidase activity makes L,D-transpeptidases essential during vegetative growth and sporulation in *Clostridioides difficile*
Kevin Bollinger, Graduate Student
Craig Ellermeier, PhD, Professor, Microbiology and Immunology
David Weiss, PhD, Professor, Microbiology and Immunology

4. Regulation of HIV-1 transcription by the conserved cellular transcription repressor Capicua
Boyang Cheng, Graduate Student
Balaji Manicassamy, PhD, Professor, Microbiology and Immunology

5. Knockout of SAMHD1 suppresses SARS-CoV-2 infection in Calu-3 cells by downregulating ACE2 expression
Pak Hin Hinson Cheung, Postdoctoral Fellow
Dr. Li Wu, PhD, Professor, Department Chair

6. Mechanism of rapid measles virus spread in well-differentiated primary cultures of human airway epithelial cells
Stephanie Clark, Graduate Student
Patrick Sinn, PhD, Professor, Stead Family Department of Pediatrics, Carver College of Medicine, The University of Iowa

7. Small RNA s0372 regulates natural transformation in a multidrug-resistant isolate of *Acinetobacter baumannii*
Mikaela Daum, Graduate Student
Michael Gebhardt, PhD, Assistant Professor, Department of Microbiology & Immunology

8. Convergent Evolution of the *Clostridioides difficile* Divisome Cell-Division Inhibitor ZinA
Leonard Duncan, Research Scientist
Craig Ellermeier / David Weiss, PhD, Professors, Microbiology and Immunology

9. The Role of LOX-1 in Modulating Alveolar Macrophage Efferocytosis
Natalia Estrada-Hernandez, Research Assistant / Associate
Filiz Korkmaz, PhD, Assistant Professor, Department Microbiology and Immunology

10. tRNA splicing factors modulate murine gammaherpesvirus infection
Sheila Gonzalez, Graduate Student
Jessica Tucker, PhD, Assistant Professor, Microbiology and Immunology

11. Single-base m6A epitranscriptomics reveals perilipin 3 as a regulator of HIV-1 replication in primary CD4+ T cells
Siyu Huang, Postdoctoral Fellow
Li Wu, PhD, Professor, Department Chair

12. ISGylation during infection restricts *Chlamydia trachomatis* growth
Steven Huang, Graduate Student
Mary Weber, PhD, Associate Professor, Microbiology and Immunology

13. Dietary effects on the course of *Visceral leishmaniasis* in a mouse model
Natalie Jarvis, Graduate Student
Mary Wilson, MD, Professor, Department of Internal Medicine

14. Herpes Simplex Virus Remodels Golgi and Endosomes into a Stably Associated Complex in Neuronal Cells
Dah Hyun Jung, Graduate Student
Richard Roller, PhD, Professor, Microbiology and Immunology

15. H5N1-VSV as a safe and effective tool to study clade 2.3.4.4b H5N1
Maya Mason, Graduate Student
Balaji Manicassamy, PhD, Professor, Microbiology and Immunology

16. Identifying *Orientia tsutsugamushi* type one secretion system effectors and their functions
Paige McCaslin, Graduate Student
Mary Weber, PhD, Associate Professor, Microbiology and Immunology

17. A manganese-sparing response balances competing cellular demands to enable *Staphylococcus aureus* infection
Riley McFarlane, Graduate Student
Thomas Kehl-Fie, PhD, Associate Professor, Microbiology and Immunology

18. Elevated RNA m6A Modifications Associate with Immune Dysregulation and Cancer Risk in ART-Treated People Living with HIV-1
Tarun Mishra, Postdoctoral Fellow
Li Wu, PhD, Professor, Department Chair

19. Effects of oxLDL/LOX-1 interaction on lung macrophage phenotype and response to pneumonia
Fernando William Moreira Santana, Graduate Student
Filiz Korkmaz, Ph.D. Department of Microbiology and Immunology

20. Anaerobic Glycolysis Suppresses Tfh Formation During Early Plasmodium Infection
Taylen Nappi, Graduate Student
Noah S. Butler, PhD, Professor, Microbiology and Immunology

21. Mapping Hypoxia-associated m5C RNA Methylation sites in Lung Cancer Cells
Heena Panchal, Research Assistant / Associate
Adam Mailloux, PhD, Assistant Professor, Microbiology and Immunology

22. Functional analysis of individual N^6-methyladenosine modifications in HIV-1 RNA
Stacia Phillips, Research Scientist
Li Wu, PhD, Professor, Microbiology and Immunology

23. Hypoxia-associated mRNA epitranscriptomic modifications block the translation of antigen processing machinery
Alexis Ramos, Graduate Student
Adam Mailloux, PhD, Assistant Professor, Microbiology and Immunology

24. Brf1 dependent RNA polymerase III transcription limits MHV68 replication by altering viral spread
Kyle Rapchak, Graduate Student
Jessica Tucker, PhD, Assistant Professor, Microbiology and Immunology

25. Mechanisms of Copper Intoxication and Resistance in *Staphylococcus aureus*: The Interplay of Staphylopine and Efflux Pumps
Moses Samje, Visiting Scholar
Thomas Kehl-Fie, PhD, Associate Professor, Microbiology and Immunology

26. HIV-1 infection increases the expression of the m6A reader protein YTHDC1 in CD4+ T cells
Daniel Sands, Graduate Student
Li Wu, PhD, Professor, Department of Microbiology and Immunology

27. On the note of csrA essentiality in *A. baumannii*: a role for D-amino acid utilization
Rosa Sava, Graduate Student
Michael Gebhardt, PhD, Assistant Professor, Department of Microbiology and Immunology

28. Structure-Function Analysis of ICP22 in HSV-1
Marla Shaffer, Graduate Student
Richard Roller, PhD, Professor, Department of Microbiology and Immunology

29. TME Hypoxia Drives Immunopeptidomic Deficiencies in Non-Small Cell Lung Cancer by Blocking Translation of Interferon Stimulated Genes Within the MHC I Pathway
Matthew Smith, Graduate Student
Dr. Adam Mailloux , PhD, Assistant Professor, Microbiology and Immunology

30. Time-resolved analysis reveals myeloid cell contributions to neuroPASC pathogenesis
Lu Tan, Postdoctoral Fellow
Stanley Perlman, PhD, Professor, Department of Microbiology and Immunology

31. CpoS-Inc interactions facilitate host cell modulation during *Chlamydia trachomatis* infection
Xavier Tijerina, Graduate Student
Mary Weber, PhD, Associate Professor of Microbiology and Immunology

32. Evaluating the Role of Myeloid-Derived Mononuclear Phagocytes as Drivers of Ebola Virus Dissemination and Pathogenesis
Hannah Van Ert, Graduate Student
Wendy Maury, PhD, Professor, Microbiology and Immunology

33. Multiple clades of regulators contribute to phosphate homeostasis and pathogenesis in *Staphylococcus aureus*
Caroline Vermilya, Graduate Student
Thomas E. Kehl-Fie, PhD, Associate Professor, Microbiology and Immunology

34. Understanding the role of the non-coding control region in JC polyomavirus cell tropism and central nervous system disease
Elizabeth Wagstaff, Graduate Student
Sabrina Tan, MD, Associate Professor, Department of Internal Medicine

35. Investigation of *E. coli* lytic transglycosylases that process septal PG.
Atsushi Yahashiri, Research Scientist
David Weiss, PhD, Professor, Microbiology and Immunology

36. Two novel enzymes are required for viability and lipoteichoic acid synthesis in *C. difficile*
Brianne Zbylicki, Graduate Student
Craig Ellermeier, PhD, Professor, Microbiology and Immunology