Information next to the presenters name includes their Academic Department along with affiliated graduate programs (in parenthesis when provided). Interdepartmental Graduate Programs include: IMMUNO/IMBIO = Immunobiology, MCDB = Molecular Cellular and Developmental Biology, NEURO = Neuroscience, BCB = Bioinformatics and Computational Biology, GENET/IG2 = Genetics & Genomics, EEB = Ecology & Evolutionary Biology, PLANT BIOLOGY (IPB) = Plant Biology.

**8:30 a.m. Continental breakfast**
1102 Molecular Biology Building

**8:30 a.m. GPSS Welcome & Invitation to Participate**
Vivek Lawana, President
1102 MBB

**9:00 a.m. "Thinking like a Graduate Student: Leaving the Undergraduate Life Behind"**
Tom Peterson
1420 Molecular Biology Building

**FACULTY PRESENTATIONS**

- **9:45 a.m. 1420 Molecular Biology:** [Christopher Tuggle](#), Animal Science (IMBIO, MCDB, IG2, BCB)
- **9:45 a.m. 1424 Molecular Biology:** [Diane Bassham](#), Genetics Development and Cell Biology (IG2, BCB, MCDB, Plant Biology). "Ribosome degradation by autophagy-like pathways"
- **9:45 a.m. 1428 Molecular Biology:** [Gunnar Mair](#), Biomedical Sciences (new, joining MCDB) "Post-transcriptional gene regulation during Plasmodium development and transmission."
- **9:45 a.m. 4034 Molecular Biology:** [Eric Underbakke](#), BBMB (NEURO, BCB) "Macromolecular structure and function, mass spectrometry, signal transduction."
- **10:30 a.m. 1420 Molecular Biology:** [Baoyu (Stone) Chen](#), Biochemistry, Biophysics and Molecular Biology (MCDB, NEURO). "Biochemical mechanisms by which cells control the actin cytoskeleton to drive diverse normal and disease-related processes."
- **10:30 a.m. 1424 Molecular Biology:** [Nicole Valenzuela](#), EEOB (IG2, BCB, EEB). Research projects: Evolution of turtle sex determination (developmental biology, transcriptomics, epigenomics [DNA methylation, others], Chromosome and genome evolution (molecular
Interdepartmental Graduate Programs' Faculty Presentations & Poster Session Schedule

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cytogenetics, genome sequencing, comparative genome evolution), evolution of dosage compensation (transcriptomics, epigenomics).

- 10:30 a.m. 1428 Molecular Biology: Oskar Siemianowski for the Cademartiri Lab (Plant Biology, IG2, BCB): "Beyond Petri Dishes and Greenhouses: Unraveling Plant Environment Interactions Towards Quantitative Plant Science."

- 10:30 a.m. 4034 Molecular Biology: OPEN


- 11:15 a.m. 1424 Molecular Biology: Gustavo MacIntosh, Biochemistry, Biophysics and Molecular Biology (MCDB, IG2, Plant Biology, BCB). "Ribosomal RNA degradation in Arabidopsis thaliana and Drosophila melanogaster."

- 11:15 a.m. 1428 Molecular Biology: Michael Cho, Biomedical Sciences (IMBIO, MCDB, IG2, Microbiology, BBMB). "Development of vaccines against HIV-1 and other antigenically variable viruses."

- 11:15 a.m. 4034 Molecular Biology: OPEN

12:00 Noon Lunch
Molecular Biology Atrium

12:00 Noon – 2:00 p.m.
Poster session Molecular Biology Atrium

FACULTY PRESENTATIONS

- 2:00 p.m. 1420 Molecular Biology: Mathew Ellinwood, Animal Science (MCDB, NEURO, IG2). Lysosomal storage diseases. Companion animal research.

- 2:00 p.m. 1424 Molecular Biology: 2:00 p.m. 1424 Molecular Biology: Dennis Lavrov, Ecology, Evolution & Organismal Biology (MCDB, EEB, BCB, Genetics). Evolution of major groups of animals and their genomes including sponges, corals, and comb jellies

- 2:00 p.m. 1428 Molecular Biology: OPEN

- 2:00 p.m. 4034 Molecular Biology: Reuben Peters, Biochemistry Biophysics and Molecular Biology. (MCDB, Plant Biology, BCB, BBMB) The Peters group studies diterpenoid natural products, focusing not only on their biosynthesis but also physiological roles. These include the gibberellin plant hormones, which also are produced by plant-associated bacteria that we are actively investigating. Plants such the important cereal crop rice
produce a wide variety of other diterpenoids that serve various ecological roles, including acting as antibiotics against microbial pathogens, providing another area of study in our lab. In addition, a number of diterpenoids from plants and fungi have pharmaceutical activity, and we investigate their biosynthesis as well.

- 2:45 p.m. 1420 Molecular Biology: Iddo Friedberg, Vet Microbiology and Preventive Medicine (BCB, IG2, Microbiology), "The more we know, the more we don't: how genomics is expanding scientific ignorance, and why that is a good thing". "Areas of research interest include evolution of protein function; evolution of operons and gene neighborhoods; protein structure-function relationships; metagenomics, host-microbiome interactions, and computational protein function prediction."

- 2:45 p.m. 1424 Molecular Biology: Walter Moss, BBMB, (MCDB, IG2, BCB) Research interests: Noncoding RNA discovery; RNA structure and function. The major goal of the Moss Lab is to identify RNA sequences with a high propensity to fold then deduce their structures, functions, and the roles played by structure: particularly as relates to human disease.

- 2:45 p.m. 1428 Molecular Biology: Auriel Willette, Food Science and Human Nutrition (IMBIO, MCDB, NEURO, IG2, BCB, GERON). Most of my lab focuses on the link between metabolic dysfunction caused by obesity and increased risk for neurodegenerative disorders, like Alzheimer's disease. We also conduct clinical trials looking at how decreasing obesity can improve cognition and both brain structure and function in people at risk for Alzheimer's disease. Students are able to pursue data analysis projects with existing brain imaging, cognition, and biological data in humans for rapid-fire publication, or clinical trials projects that focus more on cause and effect for metabolism and brain outcomes. A secondary interest is investigating the same data analysis questions but in pediatric cohorts, to see if metabolic dysfunction affects brain growth and cognition in the same way it impacts the brain at the other end of the lifespan.

- 2:45 p.m. 4034 Molecular Biology: OPEN

- 3:30 p.m. 1420 Molecular Biology: Allen Miller, Plant Pathology and Microbiology (MCDB, IG2, BCB, Plant Biology, Micro, BBMB) "Viral Control of Host Translation"

- 3:30 p.m. 1424 Molecular Biology: Adhithiya Manohar-Charle, senior toxicology graduate student in the Anumantha Kanthasamy laboratory, Biomedical Sciences. (IG2, IMBIO, MCDB, NEURO, TOX, IG2). Research focuses on the cellular and molecular mechanisms of Parkinson's disease and other protein misfolding neurodegenerative disorders including prion diseases and Chronic Traumatic Encephalopathy, which is similar to Alzheimer's disease. His NIH-funded research program studies the role of environmental neurotoxic chemicals and other neurotoxic stress on pathogenesis of Parkinson's and other neurodegenerative diseases.
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- 3:30 p.m. 1428 Molecular Biology: OPEN
- 3:30 p.m. 4034 Molecular Biology: OPEN

POSTERS
12:00 Noon – 2:00 PM
Molecular Biology Building Atrium

- #1 Chris Tuggle Lab
- #2 Baoyu (Stone) Chen Lab
- #3 Zhijun Wu, Mathematics. "Evolution of social cooperation of microorganisms."
- #4 Zhijun Wu, Mathematics. "Equilibrium distributions of populations of biological species on networks of social sites"
- #5 Matthew Ellinwood, Animal Science.
- #6 Laura Schultz for the Maura McGrail Lab.
- #7 Maira Almeida for the Essner and McGrail Labs.
- #8 Jeff Haltom for the Maura McGrail Lab.
- #9 Quinn Hanson for the Underbakke Lab. "Architecture and assembly of scaffolded signaling complexes in the post-synaptic density."
- #10 Iddo Friedberg Lab: "Bacteriocin detection with distributed biological sequence representation"
- #11 Iddo Friedberg Lab: "Expanding the Critical Assessment of Function Annotation with Experimental Data and Biocuration"
- #12 Iddo Friedberg Lab: "Reconstructing Ancestral Gene Blocks in Bacteria"
- #13 Kejue Jia and Daniel Kool for the Bob Jernigan Lab. "Improving Discrimination between Neutral and Deleterious Mutants by Improving Sequence Matching".
- #14 Allen Miller Lab "Toward resistance to maize lethal necrosis disease by disruption of cap-independent translation of maize chlorotic mottle virus RNA"
- Luke Bussier for the Cathy Miller Lab, VMPM.
- Additional posters may be added