Program (Provisional)

2016 Molecular Basis of Infectious Diseases (MBID) Retreat
Thursday, March 10, 2016
UTHealth (University of Texas Health Science Center at Houston)
Brown Foundation Institute of Molecular Medicine (IMM)
1825 Pressler Street, Houston, TX 77030

Sponsored by:
The Molecular Basis of Infectious Diseases Training Program (https://med.uth.edu/pathology/courses/mbid/)
Center of Emerging and Re-Emerging Infections, UTHealth

Co-Organizers:
Steven J. Norris, Ph.D., Professor and Vice Chair for Research, Depts. of Pathology & Laboratory Medicine and Microbiology & Molecular Genetics, McGovern Medical School.
Steven.J.Norris@uth.tmc.edu; 713-500-5338
Heidi B. Kaplan, Ph.D., Associate Professor, Dept. of Microbiology & Molecular Genetics, McGovern Medical School.
Heidi.B.Kaplan@uth.tmc.edu; 713-500-5448
Theresa M. Koehler, Ph.D., Professor and Chair, Dept. of Microbiology & Molecular Genetics, McGovern Medical School. Theresa.M.Koehler@uth.tmc.edu; 713-500-5450

OVERVIEW

8:00-10:00 Registration and coffee – James T. Willerson (JTW) Discovery Hall
(Note: No food or drinks are allowed in the IMM Auditorium)

9:00-9:45 Optional Workshop on Career Development in Microbiology/Infectious Diseases – IMM Auditorium

9:45-10:00 Break

10:00-11:00 Keynote Speaker: George Weinstock, Ph.D., Professor, and Evnin Family Chair and Director of Microbial Genetics, Jackson Laboratory for Genomic Medicine, Farmington, CT “The human microbiome: a new frontier that might just affect everything” - IMM Auditorium

11:00-11:45 Presentations by postdoctoral fellows and students – IMM Auditorium

11:45-12:15 Job E. Lopez, Ph.D., Assistant Professor, Pediatrics-Tropical Medicine, Baylor College of Medicine, Houston, TX “Relapsing fever functional genomics to understand the spirochete’s life cycle in the tick and mammal” - IMM Auditorium

12:15-2:30 Poster session and lunch

2:30-2:45 Nicholas De Lay, Ph.D., Assistant Professor, Department of Microbiology and Molecular Genetics, McGovern Medical School, Houston, TX “Small noncoding RNAs: tiny regulators with a large impact on bacterial physiology and virulence” - IMM Auditorium

2:45-3:30 Presentations by postdoctoral fellows and students – IMM Auditorium

3:30-4:30 Keynote Speaker: Samuel A. Shelburne, III, M.D., Ph.D., Associate Professor, Department of Genomic Medicine and Division of Internal Medicine, The University of Texas MD Anderson Cancer Center, Houston, TX “Personalized approaches to infectious diseases prevention and therapeutics: a return to our roots” - IMM Auditorium

4:30 Poster award presentations and adjournment
DETAILED SCHEDULE

8:00-10:00  Registration and coffee – JTW Discovery Hall
(Note: No food or drinks are allowed in the IMM Auditorium)

9:00-9:45  Optional Workshop on Career Development in Microbiology/Infectious Diseases – IMM Auditorium

9:45-10:00  Break

10:00-12:15  Morning Session – IMM Auditorium
  Moderator:  JiQiang (Lanny) Ling, Ph.D., Assistant Professor, MMG, McGovern Medical School

10:00-11:00  Keynote Speaker:  George M. Weinstock, Ph.D., Professor, and Evnin Family Chair and Director of Microbial Genetics, Jackson Laboratory for Genomic Medicine, Farmington, CT “The human microbiome: a new frontier that might just affect everything” - IMM Auditorium

11:00-11:15  Julie Wu, Research Student, Department of Dermatology, McGovern Medical School. “Novel implications for protein phosphatase 2A targeting in polyomavirus-associated disease”

11:15-11:30  Pedro Miramón, Ph.D., Postdoctoral Researcher, MMG, McGovern Medical School. “Peptide and amino acid catabolism promote pH manipulation and virulence of Candida albicans”

11:30-11:45  Hui Zhi, Graduate Student, MPIM, TAMHSC. “Borrelia burgdorferi BBK32 inhibits the classical pathway by blocking activation of the C1 complement complex”

11:45-12:15  Job E. Lopez, Ph.D., Assistant Professor, Pediatrics-Tropical Medicine, Baylor College of Medicine, Houston, TX “Relapsing fever functional genomics to understand the spirochete’s life cycle in the tick and mammal” - IMM Auditorium

12:15-2:30  Poster session and lunch – JTW Discovery Hall
(Presenters are in bold. A key of abbreviations is provided on the last page.)

1. Anurodh Agrawal.  MI, UTMB.  A germline-like neutralizing human monoclonal antibody protects against lethal disease in a transgenic mouse model of MERS-CoV infection.

2. Benu Atri, Panagiotis Katsonis, Olivier Lichtarge.  MHG, BMB, BCM.  An equation for the evolutionary action of mutations matches the fitness landscape of the bacterial protein RecA.


MBID Retreat 2016 Program (last updated February 26, 2016)  Page 2/5


7. Lanette M. Christensen, Suat L.G. Cirillo, Madison Strain, Shrina Parikh, Jeffrey D. Cirillo. MPIM, TAMHSC. Legionella pneumophila p45 integrative genomic element plays a role in virulence.


13. Jessica Galloway-Peña, Anthony Flores, Vance Fowler, Samuel Shelburne. Infectious Diseases, MD Anderson Cancer Center. Whole genome analyses reveal emergence of a hypervirulent group A streptococcal strain in a capsule deficient background.

14. Mary Girard, Christophe Herman. MVM, BCM. Lethal Love: Bioengineering bacteria for antimicrobial use by exploiting bacterial conjugation to deliver toxic elements.


17. Carrie E. Graham, Melissa R. Cruz, Micheal C. Lorenz, Danielle A. Garsin. MMG, McGovern Medical School. Inhibition of Candida albicans virulence and biofilm formation by an Enterococcus faecalis secreted bacteriocin.

19. **Karan Gautam Kaval**, Jun Liu, Danielle Garsin. MMG, McGovern Medical School. **Structural and regulatory features of ethanolamine utilization in Enterococcus faecalis.**

20. **Ritesh Kumar**, Jennifer Herold, Yi Xu. CIID, IBT, Texas A&M University. **Role of Streptococcus galolyticus in colon cancer.**


22. **David C. Marciano**, Rhalond C. Lua, Christophe Herman, Olivier Lichtarge. MHG, BMB, BCM. **Strength in a transcription factor’s negative autoregulation increases mutational robustness.**

23. **Diana Medina**, Beau Wager, Erin Troy, Linden Hu, Steve Norris, Tao Lin, Jenny Hyde, Meghan Lybecker, Jon T. Skare. MPIM, TAMHSC. **Identification and characterization of small regulatory RNA (sRNAs) in the Lyme disease spirochete Borrelia burgdorferi.**

24. **Pedro Miramón**, Michael C. Lorenz. MMG, McGovern Medical School. **Peptide and amino acid catabolism promote pH manipulation and virulence of Candida albicans.**

25. **Maria Camila Montealegre**, Jung Hyeob Roh, Meredith Rae, Milya G. Davlieva, Kavindra V. Singh, Yousif Shamoo, Barbara E. Murray. MMG, McGovern Medical School. **The road of Enterococcus faecium towards ampicillin resistance.**

26. **Bryan C. Nikolai**, Qin Feng, Brian York, Charles Foulds, Ed Siwak, David Lonard, Andrew P. Rice, and Bert W. O’Malley. Molecular and Cellular Biology, BCM. **The steroid receptor coactivator 3 (SRC-3) is a target for reactivation of HIV latency.**

27. **Sara Siegel**, Chenggang Wu, Hung Ton-That. MMG, McGovern Medical School. **A distinct Type I signal peptidase required for pilus polymerization, biofilm formation and polymicrobial interactions.**

28. **Elisa M. Vesely**, Michael C. Lorenz. MMG, McGovern Medical School. **Peroxisomes play a crucial role in environmental pH neutralization during Candida albicans amino acid catabolism.**

29. **Yanyu Wang**, Sarah A. Jenkins, Chunfang Gu, Ankita Shree. CIID, IBT. **In vivo functional study of spore surface protein BclA in acute and persistent infections of Bacillus anthracis.**


31. **Hui Zhi**, Brandon L. Garcia, Beau Wager, Magnus Höök, Jon T. Skare. MPIM, TAMHSC. **Borrelia burgdorferi BBK32 inhibits the classical pathway by blocking activation of the C1 complement complex.**
2:30-4:30  Afternoon Session – IMM Auditorium

Moderator: Adriana Rosato, Ph.D., Associate Professor of Pathology and Genomic Medicine, Institute for Academic Medicine, Houston Methodist, and Associate Member, Houston Methodist Research Institute

2:30-2:45 Nicholas De Lay, Ph.D., Assistant Professor, Department of Microbiology and Molecular Genetics, McGovern Medical School, Houston, TX “Small noncoding RNAs: tiny regulators with a large impact on bacterial physiology and virulence” - IMM Auditorium

2:45-3:00 Zachary C. Conley, Graduate Student, Verna and Marrs McLean Department of Biochemistry and Molecular Biology, BCM. “Identification of drug targets of Ciclopriox”

3:00-3:15 Maria Camila Montealegre, Graduate student, MMG, McGovern Medical School. “The road of Enterococcus faecium towards ampicillin resistance”

3:15-3:30 Mary Girard, Graduate Student, MVM, BCM. “Lethal Love: Bioengineering bacteria for antimicrobial use by exploiting bacterial conjugation to deliver toxic elements”

3:30-4:30 Keynote Speaker: Samuel A. Shelburne, Ill, M.D., Ph.D., Associate Professor, Department of Genomic Medicine and Division of Internal Medicine, The University of Texas MD Anderson Cancer Center, Houston, TX “Personalized approaches to infectious diseases prevention and therapeutics: a return to our roots” - IMM Auditorium

4:30 Poster award presentations and adjournment

Abbreviations

BCM = Baylor College of Medicine
BMB = Biochemistry and Molecular Biology
CIID = Center for Infectious and Inflammatory Diseases
MPIM = Dept. of Microbial Pathogenesis and Immunology
DPALM = Dept. of Pathology and Laboratory Medicine
MVM = Dept. of Molecular Virology and Microbiology
IBT = Institute of Biosciences and Technology
IM = Internal Medicine
IMM = Institute of Molecular Medicine
IM = Dept. of Molecular and Human Genetics
MMG = Dept. of Microbiology and Molecular Genetics
MMP = Dept. of Microbial and Molecular Pathogenesis
MHG = Molecular & Human Genetics
UTMB = Univ. of Texas Medical Branch (Galveston)
UH = Univ. of Houston

Attendee list available upon request: Lindsay.A.Thorpe@uth.tmc.edu