UNIVERSITY OF MASSACHUSETTS
JOINT RETREAT CBI/BMB/BMP PROGRAMS
FRIDAY, JUNE 17TH, 2011

Hoagland-Pincus Conference Center, Shrewsbury, MA

presented by

Department of Biochemistry and Molecular Pharmacology
UMass, Worcester

Department of Biochemistry and Molecular Biology
UMass, Amherst

Chemistry and Biology Interface Program
UMass, Amherst
Schedule of Events

8:45 - 9:15 AM  Registration/ Hang ALL Posters  (coffee/pastry available)

9:30 - 11:00 AM  Talks - Session I - Amphitheater

11:00 - 12:30 PM  Poster Session I - Fuller Library

12:30 PM – 1:30 Lunch – Worcester Room

1:00 - 2:30 PM  Inter-Program Game(s)

2:30 - 4:00 PM  Talks - Session II - Amphitheater

4:00 - 5:30 PM  Poster Session II + Happy Hour - Fuller Library

Presentations - Amphitheater

Morning Session  9:30 – 11:00 a.m.

Ivan Budyak  Gierasch Lab,  "Early Steps in CRABP Folding"

Amanda Hughes  Rando Lab  "Dissecting cis and Trans Effects on Chromatin Structure"

Kristina Moody Giorda  Hebert Lab  "The SV40 Late Viral Protein VP4 Disrupts the Nuclear Envelope for Viral Release"

Stefan Ameres,  Zamore Lab  "Mechanism and Application of a Small RNA Decay Pathway"

Afternoon Session  2:30 – 4:00 p.m.

Whitney Stoppel,  Robert Lab  "Mechanical and Transport Properties of Alginate Hydrogels Containing Synthetic Oxygen Carriers for Cell Encapsulation"

Daniel Keifenheim  Rhind Lab  “How Cells Measure Size: Relative Wee1 and Cdc25 Levels are Surrogates for the Nuclear: Cytoplasmic Ratio"

Subinoy Rana,  Rotello Lab  "'Chemical Nose' Sensing of Proteins, Bacteria and Mammalian Cells"

Ryan Hietpas,  Bolon Lab  "Experimental Analysis of a Fitness Landscape Utilizing High-throughput Saturation Mutagenesis"
Poster Sessions

*Odd numbered posters will be presented at the morning session and even numbered at the afternoon session. Please hang your poster on the board with the appropriate number.*

Poster #

1. “Novel Photochemical Tool for Neuronal Receptor Labeling”
   Amanda M. Hussey, Rosamund E. Combs-Bachman, Devaiah Vytla, Ismail Hafez, James J. Chambers

2. “A Machine Learning Approach for the Prediction of Protein Surface Loop Flexibility”
   Howook Hwang, Thom Vreven, Troy Whitfield, Kevin Wiehe, Zhiping Weng

3. “The Molecular Basis for Distinct Pathways for Protein Import into Chloroplasts”
   Hitoshi Inoue, Caleb Rounds and Danny J. Schnell

4. “Perfringolysin O as a Tool to Measure Cholesterol Levels in Cell Membranes”
   Benjamin B. Johnson, Paul C. Moe, Nemat Sharaf, Bernardo Trigatti, Juan Anguita, and Alejandro P. Heuck

5. “Intrinsic Disorder in Interferon Regulatory Factors”
   Tara Kashav and William Royer

6. “Recognition by OMA-1, a C. elegans Oocyte Maturation Determinant”
   Ebru Kaymak, Sean P. Ryder

   Adriana Z. Kita, Cedric E. Bobst, Igor A. Kaltashov

8. “Characterization of the Complex Between Human PPCA and Neu1: Insights into the Molecular Basis of Lysosomal Storage Diseases”
   Nilima Kolli and Scott C Garman

   Seena S. Koshy, Stephen J. Eyles, Robert M. Weis, Lynmarie K. Thompson

10. “Aggregation Studies of Human Cu/Zn Superoxide Dismutase: Implications for Amyotrophic Lateral Sclerosis”
    Vijay Kumar, Sivakumar Boopathy, Noah Cohen, Jill Zitzewitz and C. Robert Matthews

11. “Characterizing the Binding Specificity of TIS11d”
    Jennifer Laine, Laura Deveau, Francesca Massi

12. “Folding and Association of ALS-Linked Superoxide Dismutase Variants”
    Jill Zitzewitz, Brian Mackness, Lori Tokarowski, Danielle Jacobson, Osman Bilsel, and C. Robert Matthews

13. “Interconversion of the Specificities of Human Lysosomal Enzymes Associated with Fabry and Schindler Diseases”
    Tomasic, IB, Metcalf, MC, Guce, AI, Clark, NE, Garman, SC
14. “Improving Bioluminescent Imaging with Synthetic Luciferins and Mutant Luciferases”
    Katryn R. Harwood, Gadarla Randeer Reddy, David M. Mofford, Stephen C. Miller

15. “The Interplay Between Exocyst and SM Proteins in Regulation of Exocytosis”
    Francesca Morgera, Michelle Dubuke, Maggie Sallah, Pallavi Ghandi and Mary Munson

16. “Pinpointing Calmodulin in Functioning KCNQ Channel Complexes”
    Karen Mruk, Robert O. Blaustein, and William R. Kobertz

17. “A Dark to Bright Fluorescent Reporter of Caspase Activity”
    Samantha B. Nicholls, Genevieve Abbruzzese, Jun Chu, Kimberly D. Tremblay, Jeanne A. Hardy

18. “Elucidating HIV-1 Protease Substrate Specificity: An Investigation of both Mutational and
    Conformational Ensembles”
    Aysegul Ozen, Celia A. Schiffer

19. “Effect of Cellular Aggregation on Taxus Suspension Cell Cultures”
    Rohan Patil and Susan Roberts

20. “Near-Infrared Fluorophores for the Detection of ABC Transporter Activity”
    Steven Pauff and Stephen Miller

    Bibin Paulose, Kham Vongpaseuth, Susan Roberts, Elsbeth Walker and Jennifer Normanly

22. “Exploring the Role of Protein Degradation in E. coli Proteostasis: In Silico and In Vivo”
    Kristine Faye Pobre, Evan Powers, Lila Gierasch

23. “Enforced N-domain Proximity Stimulates Hsp90 ATPase Activity in vitro and is Compatible with
    Function in vivo”
    Lester Pullen and Dan Bolon

24. “Investigating the Charge-dependent Anti-aggregation Activity of Hsp90 in vivo”
    Natalie W. Pursell and Daniel N. Bolon

25. “The SV40 Late Protein VP4 is a Viroporin that Forms Pores to Disrupt Membranes for Viral
    Release”
    Smita Raghava, Kristina M. Giorda, Fabian B. Romano and Alejandro P. Heuck

26. The Kinetics of Structural Transitions During Promoter Release in T7 RNA Polymerase
    Luis E. Ramirez-Tapia and Craig T. Martin

27. “Structural Studies on Human Lysosomal Sulfatases”
    Yadilette Rivera-Colón, Scott C. Garman

28. “Insights into the Membrane-interaction Properties of the Pseudomonas aeruginosa Type III
    Secretion translocator PopD”
    Fabian B. Romano, Kyle C. Rossi, Min Chen, Alejandro P. Heuck

29. “Avoiding Drug Resistance Against HCV NS3/4A Protease Inhibitors”
    Keith Romano and Djade Soumana

30. “Applying Saturation Mutagenesis to Elucidate the Structure-Function Relationship of Ubiquitin in
    Yeast”
    Ben Roscoe, Lester Pullen, Daniel Virgil, Dan Bolon
31. “An Improved System for Biochemical Investigation of Mammalian RNA Interference”
William E. Salomon and Phillip D. Zamore

32. “Role of DNA Bubble Collapse in the Instability of Initiation Complexes - A Common Mechanism in all RNA Polymerases”
Satamita Samanta and Craig T. Martin

33. “A C-terminal conserved and disordered region enhances the chaperone function of E. coli DnaK”
Rob Smock, Mandy Blackburn and Lila Gierasch

34. “Phenotypic Response to Mutations in Yeast Ubiquitin Explains Thermal Adaptation in Prokaryotes”
Kelly Thayer, Yvonne Chan, Ben Roscoe, Ryan Hietpas, Dan Bolon, Konstantin Zeldovich

35. “Phosphorylation Regulates Assembly of the Caspase-6 substrate-binding Groove”
Elih M. Velazquez-Delgado

36. “Structure and Organization of Small Heat Shock Protein-Substrate Complexes Investigated by Cross-linking and Mass Spectrometry”
Heather A. O'Neill, Wenzhou Li, Vicki Wysocki, and Elizabeth Vierling

37. “Protein-protein Docking with ZDOCK”
Brian Pierce, Howook Hwang, Thom Vreven, Zhiping Weng

38. “DVP2 Allosteric Control”
Muslum Yildiz and Jeanne Hardy

Anastasia Zhuravleva, Eugenia M. Clerico, Robert G. Smock, Mandy Blackburn and Lila M. Gierasch

40. “Scrambling of Covalently Labeled Amino Acids During CID”
Nicholas Borotto, Yuping Zhou, Richard Vachet

41. “Towards a Functional Dissection of the C-terminal Helical Domain of the Human Hsp70”
Eugenia M. Clerico, Anastasia Zhuravleva, Julia I Leu, Donna L. George, Lila M. Gierasch

42. “Replication Timing is Regulated by the Number of MCMs Loaded at Origins”
Shankar Prasad Das, Scott Chen-Hsin Yang, John Bechhoefer and Nick Rhind.

43. “Caspase-7: Regulation by Phosphorylation”
Scott Eron, Witold Witkowski, Jeanne Hardy

44. “Antagonistic Regulation of the C elegans Notch Homolog glp-1”
Brian M. Farley, Sean P. Ryder

45. “Exploring In Vitro and In Vivo Aggregation of a Beta Clam Protein”
Mylene C. Ferrolino, Anastasia Zhuravleva, Zoya Ignatova & Lila M. Gierasch

46. “The Role of YKL-40 in the Angiogenesis, Radioresistance, and Progression of Glioblastoma”
Franchescone RA, Scully S, Faibish M, Taylor SL, Oh D, Moral L, Yan W, Bentley B, Shao R.

47. “Kinetic Evolution of Surfactant Templated Calcium Phosphate Structures”
David Griffin, Surita Bhatia
48. “Structure of HLA-DO Bound to HLA-DM and Implications for the Mechanism of DM-mediated Peptide Exchange”
   Guce, AI, Morrison, S., Mellins, E, Stern LJ

49. “Probing Hydration in Clusters of ILV Side Chains in the alpha Subunit of Tryptophan Synthase by Experiment and Simulation”
   Divya Kapoor, Payel Das, Kevin Halloran, Ruhong Zhou and C. Robert Matthews

50. “Small and Bright: Upconverting Nanoparticles for Bioimaging”
    Gang Han, Jie Shen, Yekui Zou, Lucas Brutvan, Samuel Kesseli

51. “Mapping the CheW/Chemoreceptor Interface by Solid State NMR”
    Michael J. Harris, Daniel Fowler, Robert Weis, & Lynmarie Thompson

52. “An In vivo Method Based on the Mutually Exclusive Protein Folding Principle to Measure Protein Stability”
    Karan Hingorani, Beena Krishnan and Lila M. Gierasch

53. “Understanding the Regulation of Caspase-9 by Natural Inhibitors”
    Kristen Huber and Jeanne Hardy