Biophysics, Structural and Computational Biology

2013 Retreat
October 14, 2013
Poster Presentations

1. **Amber Can Predict the Conformational Preference for Tandem GA Pairs in RNA**
Asaminew H. Aytenfisu, Aleksandar Spasic, Matthew G. Seetin, John Serafini and David H. Mathews

2. **Computational Design and Characterization of 2D Photonic Crystal Geometries for Biosensing**
Jim E. Baker and Ben L. Miller

3. **Identification of a Human Cullin5 Peptide that Interacts with a Complex Comprising HIV-1 Vif/Elongin B/C/Core Binding Factor β**
Ivan A. Belashov, Jason D. Salter, Geoffrey M. Lippa, Yoshimoto Hamuro and Joseph E. Wedekind

4. **Accelerating Nucleic Acid Design Using Pre-Selected Sequences**
Stanislav Bellaousov and David H. Mathews

5. **Structure and Function Analysis of Novel Class 1 PreQ$_1$ Riboswitches from Bacterial Pathogens**
Jarrod T. Bogue, Joseph A. Liberman and Joseph E. Wedekind

6. **Role of Mismatch in Cell Mechanical and Adhesive Properties in Cell Migration**
Julian Butcher and Moumita Das

7. **Survey of RNA Force Fields and Benchmarking Predictions with NMR**
David E. Condon, Ilyas Yildirim, Brendan C. Mort, Scott D. Kennedy and Douglas H. Turner

8. **Mechanics and Force Transmission in Living Cells**
Moumita Das

9. **Expression of HIV Envelope Glycoprotein at the Yeast Cell Surface for Vaccine Development**
Sara M. Connelly, Elizabeth Mathew and Mark E. Dumont

10. **Comparative Prediction of RNA Secondary Structure to Accommodate Domain Insertion**
Yinghan Fu, Gaurav Sharma and David H. Mathews

11. **Exploration of Structure Activity Relationships for Designed Compounds Binding the HIV-1 Frameshift Stimulatory Signal**
Thomas A. Hilimire, Leslie O. Ofori, Ryan P. Bennett, Nathaniel W. Brown, Jr., Harold C. Smith and Benjamin L. Miller

12. **A Rare View of U2AF35, U2AF65, and SF1 Subunit Locations in the Solution Conformation of an Essential Pre-mRNA Splicing Factor Complex**
Kholiswa M. Laird, Wenhua Wang and Clara L. Kielkopf

13. **Investigation of the Mechanism of Antimicrobial Lipopeptides Using Coarse-Grained Molecular Dynamics Simulations**
Dejun Lin, Joshua N. Horn, Zhen Xia, Pengyu Ren and Alan M. Grossfield

14. **Initiation Factor 2 Stabilizes the Ribosome in a Partially Rotated State**
Clarence Ling, Jillian Dann and Dmitri N. Ermolenko

15. **Pre-mRNA Splicing Factor Targeting by the CAPERα U2AF Homology Motif at 1.7 Å Resolution**
Sarah Loerch, Valerie Manceau, Alexandre Maucuer, Michael R. Green and Clara L. Kielkopf

16. **A Tool for Making New Tools for Analyzing Molecular Simulations**
Tod D. Romo and Alan M. Grossfield

17. **Structural Dynamics of Elongation Factor G During Ribosomal Translocation**
Enea Salsi, Elie Farah, Jillian Dann and Dmitri N. Ermolenko

18. **Covariance Ration Analysis of Molecular Dynamics Trajectories of HIV-1 Reverse Transcriptase**
James Seckler, Serdal Kirmizialtin, Kenneth Johnson and Alan M. Grossfield

19. **Parallelization of RNA Structure Software Package for RNA Secondary Structure Prediction**
Michael Sloma and David H. Mathews

20. **Human Cytochrome C: Residue 41 Mutations Affect Electron Transfer Rate and Hydrogen-Bonding Network Near the Heme**
Rebecca M. Smith, Matthew D. Liptak, Benjamin Snyder and Kara L. Bren

21. **Improving RNA Nearest Neighbor Parameters for Predicting Helical Stability by Going Beyond the Two-State Model**
Aleksandar Spasic, Jonathan Chen, Matthew Seetin, Douglas H. Turner and David H. Mathews

22. **Nanoscale Silicon Photonic Devices for Ultrasensitive Virus Detection**
Rashmi Sriram, Dhrubo Jyoti Basu Roy, Jim E. Baker, Mark Lifson, Amrita R. Yadav, Sudeshna Pal, Philippe M. Fauchet, Matthew Yates and Benjamin L. Miller

23. **The Study of tRNA Modifications by Molecular Dynamics**
XiaoJu Zhang and David H. Mathews

24. **Identification of Mutations Stabilizing Ste2p, a G Protein Coupled Receptor in *S. Cerevisiae***
Jeffrey Zuber and Mark E. Dumont