

## Saturday Evening ♦ October 6, 2018

- 4:00 – 10:00 pm      **Check-in at Little Grassy Lodge**
- 7:30 – 10:00 pm      **Opening Reception in Indian Lodge**  
Light refreshments, beer, wine, and soft drinks. Participants are expected to make dinner arrangements independently
- Gibbs T-shirts and Mugs – Pick up at registration**

### Saturday Night Thermo – Event for trainees only

**Faculty Organizers:** Vince J. LiCata, Louisiana State University and Susan Pedigo, University of Mississippi

**Trainee Moderators:** Alexander Yarawsky and Andrea Ori, Herr Lab, University of Cincinnati

- 5:30 pm                      **Freeberg/Sledgefoot Hall – Dinner for trainees who registered in advance**
- 6:00 – 7:00 pm            **Flash Talks** – Session open to all trainees
- 1. NMR characterization of the translational isoforms of the human glucocorticoid receptor**  
Emily Grasso, Hilser Lab, Johns Hopkins University
  - 2. Probing the homotropic allostery of the oligomeric Trp- and RNA-binding protein TRAP via mechanistic modelling and protein engineering**  
Weicheng Li, Foster Lab, The Ohio State University
  - 3. Understanding key interactions controlling heme ligand selection in truncated hemoglobins**  
Jamie Martinez, Lecomte Lab, Johns Hopkins University
  - 4. Effects of short discriminators on transcription initiation**  
Dylan Plaskon, Record Lab, University of Wisconsin–Madison
  - 5. Interaction of PKR with viral RNA inhibitors**  
Cassie Zerbe, Cole Lab, University of Connecticut
  - 6. Mutation of the RNA polymerase I trigger loop reveals functional divergence of the eukaryotic RNA polymerases**  
Catherine Scull, Schneider Lab, University of Alabama at Birmingham
- 7:00 – 7:15 pm            **Refreshment Break**
- 7:15 – 8:15 pm            **Career Panel** – Session open to all trainees  
Nasrin Mirsaleh-Kohan, Texas Woman's University  
Stefanie Kall, NanoTemper Technologies  
Julie DeSa Lorenz, Olis
- 8:15 pm                      **Adjourn to Reception in Indian Lodge**

## Sunday Morning ♦ October 7, 2018

- 7:00 – 8:20 am **Breakfast in Freeberg Hall**
- 8:30 – 8:35 am **President's Welcome by Clay Clark, University of Texas, Arlington**
- 8:35 – 8:40 am **Organizers' Comments**

### 32<sup>nd</sup> Annual Gibbs Conference Keynote Lecture

- Moderator* Cassie Zerbe, Cole Lab, University of Connecticut
- 8:40 – 8:50 am **Introduction to the 32<sup>nd</sup> Annual Gibbs Conference Keynote Speaker**  
David Draper, Johns Hopkins University
- 8:50 – 9:40 am **Keynote Lecture**  
**Stealing nature's tricks to build better biotechnologies**  
Kevin Plaxco, University of California, Santa Barbara
- 9:40 – 9:50 am **Keynote Q&A**
- 9:50 – 10:20 am **Break – Refreshments in Indian Lodge**

### Session I: Binding and Allostery

- Moderator* Cassie Zerbe, Cole Lab, University of Connecticut
- 10:20 – 10:50 pm **Enhanced DNA twisting/bending fluctuations promote damage recognition by Rad4/XPC DNA-repair complex**  
Anjum Ansari, University of Illinois at Chicago
- 10:50 – 11:10 am **Homo-dimerization negatively regulates the ETS-family transcription factor PU.1**  
Suela Xhani, Poon Lab, Georgia State University
- 11:10 – 11:40 am **Study of allosteric detail in protein homodimers from NMR**  
Andrew Lee, University of North Carolina at Chapel Hill
- 11:40 – 12:00 pm **Cooperative changes in solvent exposure identify cryptic pockets, conformational switches, and allosteric coupling**  
Justin Porter, Bowman Lab, Washington University School of Medicine
- 12:00 – 12:10 pm **General Discussion**
- 12:10 pm **Conference Photo near Freeberg Hall**
- 12:30 pm **Lunch in Freeberg Hall**
- 1:00 – 2:45 pm **Canoeing – Freeberg Patio to walk to the lake**  
Those interested should contact Alan Teska at the front desk. (Limited to 40 participants)

### Free Time until Afternoon Session

Information about local parks and attractions is available near the entrance to Little Grassy Lodge.

## Sunday Afternoon ♦ October 7, 2018

### Session II: Folding and Stability

<i>Moderator</i>	Rebecca Booth, Bondos Lab, Texas A&M Health Science Center
3:00 – 3:30 pm	<b>Prospects in protein thermodynamic and kinetic stability</b> Elizabeth Meiering, University of Waterloo
3:30 – 3:50 pm	<b>Surveying the sequence space landscape of fold-switching proteins</b> Lauren Porter, Looger Lab, Howard Hughes Medical Institute, Janelia Research Campus
3:50 – 4:10 pm	<b>Characterization of pH-dependent conformational changes in proteins with buried ionizable residues</b> Christos Kougantakis, Garcia-Moreno Lab, Johns Hopkins University
4:10 – 4:40 pm	<b>Break – Refreshments in Indian Lodge</b>
4:40 – 5:10 pm	<b>Simulating movement of tRNA through the ribosome and energy landscapes of riboswitches</b> Karissa Sanbonmatsu, Los Alamos National Laboratory
5:10 – 5:30 pm	<b>Understanding how Pin1-substrate interactions modulate affinity and inter-domain dynamics</b> Dinusa Jinasena, Fitzkee Lab, Mississippi State University
5:30 – 6:00 pm	<b>Combination of C<math>\alpha</math>-H hydrogen bonds and van der Waals packing modulates the stability of GxxxG-mediated dimers in membranes</b> Alessandro Senes, University of Wisconsin–Madison
6:00 – 6:10 pm	<b>General Discussion</b>
6:30 pm	<b>Dinner in Freeberg Hall</b>

## Sunday Evening ♦ October 7, 2018

8:00 – 10:00 pm	<b>Poster Session I in Sledgefoot Hall (lower level)</b> Presenters with last name A to L; please remove posters before midnight to make room for Monday presenters
	<b>Sponsor's Displays in Freeberg Hall (upper level)</b> – near beer, wine, and soft drinks

## Monday Morning ♦ October 8, 2018

7:00 – 8:20 am **Breakfast in Freeberg Hall**

8:30 – 8:40 am **Announcements**

### 10<sup>th</sup> Annual Gary K. Ackers Lecture

*Moderator* Zach Ingram, Lucius Lab, University of Alabama at Birmingham

8:40 – 8:50 am **Introduction to the Gary K. Ackers Lecture in Biothermodynamics**  
Madeline Shea, University of Iowa

8:50 – 9:40 am **Ackers Lecture**  
**Asymmetric structural- and energetic-landscape in regulating the nature of allostery in a homo-dimeric protein**  
James Lee, The University of Texas Medical Branch

9:40 – 9:50 am **Keynote Q&A**

9:50 – 10:20 am **Break – Refreshments in Indian Lodge**

### Session III: Dynamics and Function

*Moderator* Zach Ingram, Lucius Lab, University of Alabama at Birmingham

10:20 – 10:50 pm **A lack of folding and yet a function: Thermodynamic insights into intrinsically disordered proteins and transcription**  
Scott Showalter, Pennsylvania State University

10:50 – 11:10 am **Activation of UvrD helicase by a processivity factor MutL**  
Yerdos Ordabayev, Lohman Lab, Washington University School of Medicine

11:10 – 11:40 am **The effect of nucleosome conformation on histone tail binding**  
Catherine Musselman, University of Iowa

11:40 – 12:00 pm **The 3D free energy surface that determines the specificity of an RNA processing enzyme**  
Daniel Roston, Cui Lab, University of Wisconsin–Madison

12:00 – 12:10 pm **General Discussion**

12:10 – 12:25 pm **Vendor Introduction**

12:30 pm **Lunch in Freeberg Hall**

1:00 – 2:45 pm **Interpretive Nature Hike – Freeberg Patio to start hike**  
The Environmental Education staff will take up to 25 participants for this hike on a trail along the shore of Little Grassy Lake. Please contact Alan Teska at the front desk to register.

1:20 – 2:20 pm **Business Meeting of Past and Current Organizers – Indian Building**  
Refreshment area will be unavailable to other meeting attendees during this time.

### Free Time until Afternoon Session

Information about local parks and attractions is available near the entrance to Little Grassy Lodge.

## Monday Afternoon ♦ October 8, 2018

Posters to be presented on Monday night may be mounted as soon as space is available on Sunday night. The Airport Ride Board will be available in Little Grassy Lodge, near the check-in window.

### Session IV: Biothermodynamics in Cells

<i>Moderator</i>	Jaime Martinez, Lecomte Lab, Johns Hopkins University
3:00 – 3:30 pm	<b>Cellular complexity enhances RNA folding cooperativity, adaptation, and catalysis</b> Philip Bevilacqua, Pennsylvania State University
3:30 – 3:50 pm	<b>Disease-causing mutations in calmodulin alter the linkage between binding sodium channel (Na<sub>v</sub>) IQ motifs and calcium</b> Ryan Mahling, Shea Lab, University of Iowa
3:50 – 4:10 pm	<b>Role of structural heterogeneity of potassium channel monomers in tetramerization</b> Kevin Song, Sosnick Lab, University of Chicago
4:10 – 4:40 pm	<b>Break – Refreshments in Indian Lodge</b>
4:40 – 5:10 pm	<b>Stability of proteins and their complexes in cells and under crowded conditions <i>in vitro</i></b> Gary Pielak, University of North Carolina at Chapel Hill
5:10 – 5:30 pm	<b>Hydrophobicity promotes UBQLN2 liquid-liquid phase separation</b> Yiran Yang, Castañeda Lab, Syracuse University
5:30 – 6:00 pm	<b>Curvature-concentration coupling and stability modulation in complex lipid bilayers</b> Eric May, University of Connecticut
6:00 – 6:10 pm	<b>General Discussion</b>
6:30 pm	<b>Dinner in Freeberg Hall</b>

## Monday Evening ♦ October 8, 2018

8:00 – 10:00 pm	<b>Poster Session II in Sledgefoot Hall (lower level)</b> Presenters with last name M to Z
	<b>Sponsor's Displays in Freeberg Hall (upper level)</b> – near beer, wine, and soft drinks

## Tuesday Morning ♦ October 9, 2018

7:00 – 8:30 am      **Breakfast in Freeberg Hall**

8:40 – 8:45 am      **Announcements**

### **Session V: Assembly and Dynamics of Complexes**

*Moderator*              Emily Grasso, Hilser Lab, Johns Hopkins University

8:45 – 9:15 pm      **Quantifying collective dynamics in the ribosome**  
Paul Whitford, Northeastern University

9:15 – 9:35 am      **Thermodynamics of membrane protein insertion triggered by pH, Mg<sup>2+</sup> and Ca<sup>2+</sup> and changes in lipid composition**  
Victor Vasquez-Montes, Ladohkin Lab, The University of Kansas Medical Center

9:35 – 9:55 am      **Thermodynamics underlying zinc-sensing function of Loz1**  
Vibhuti Wadhwa, Foster Lab, The Ohio State University

9:55 – 10:25 am     **Break – Refreshments in Indian Lodge**

10:25 – 10:55 pm    **Transcription and the cooperativity of RNA self-assembly**  
Sarah Woodson, Johns Hopkins University

10:55 – 11:15 am    **Stressed-out  $\beta$ -barrels: Outer membrane proteins respond to membrane tension like a finger trap**  
Henry Lessen, Fleming Lab, Johns Hopkins University

11:15 – 11:45 am    **Two-state equilibria within very-big-mers formed by a membrane associated peptide toxin**  
Andrew Miranker, Yale University

11:45 – 11:55 am    **General Discussion**

11:55 – 12:00 pm    **Closing Remarks by Organizers and President**

12:00 pm              **Box Lunch in Freeberg Hall and Check-out**

Please leave your keys at the counter in Little Grassy Lodge.

## Poster Information

Posters will be presented in two evening sessions in Sledgefoot Hall (next to Freeberg Dining Hall). Session I will be held on Sunday evening and will feature posters from presenters with last names A to L. Session II will be held on Monday evening and will feature poster from presenters with last names M to Z. Both sessions will start at 8:00 pm. Posters should be taken down before the talks start the next morning.

### Poster Session I (Posters 1 – 50)

Last Names starting with A to L

1. **A unified calculus for the experimental determination of partial thermodynamic properties including the volume, enthalpy, heat capacity and chemical potential.** [Matthew Auton](#).
2. **Effect of ions on the conformation and stability of an RNA riboswitch.** [Bryan Bahoua](#) and Ana Maria Soto.
3. **Visualizing spontaneous DNA dynamics in linear and bent DNA and its role in mismatch recognition by damage repair protein Rad4.** Sagnik Chakraborty, [Saroj Baral](#), Debamita Paul, Hong Mu, Peter J. Steinbach, Suse Broyde, Jung-Hyun Min, and Anjum Ansari.
4. **Molecular mechanism of a mutation causing pediatric-onset heart disease.** [Samantha Barrick](#), Michael Greenberg.
5. **Coupling of disorder-to-order and residue networks in allostery.** Jingheng Wang, Riya Simanta, Christopher Look, Silvina Matysiak, and [Dorothy Beckett](#).
6. **How Hox proteins regulate DNA binding.** [Rebecca M. Booth](#), Kelly A. Churion, Ying Liu, Lauren Kustigian, Hays Rye, Keith Dunker, Payel Das, Kathleen S. Matthews, and Sarah E. Bondos.
7. **Hydrogen peroxide as an allosteric activator of mitochondrial AAA+ protease YME1L.** [Chad Brambley](#), Justin D. Marsee, and Justin Miller.
8. **Conformational analysis of apolipoprotein E.** [Melissa Brereton](#), Berevan Baban, Greg DeKoster, Carl Frieden, and Andrea Soranno.
9. **Divergence of the RNA recognition motif in vertebrate LARP6 proteins.** [Melissa G. Carrizales](#), Paul B. Chaiken, Leticia Gonzales, and Karen A. Lewis
10. **NMR studies of structure and dynamics of minielastin.** [Faye A. Carvajal](#), Kelly N. Greenland, Jonathon Preston, Ronald L. Koder and Richard J. Wittebort.
11. **Molecular basis for the evolved instability of a human G-protein coupled receptor.** [Laura M. Chamness](#), Wesley D. Penn, and Jonathan P. Schleich.
12. **Dissecting the molecular mechanism of troponin T mutations in familial cardiomyopathies.** [Sarah R. Clippinger](#), Paige Cloonan, Lina Greenberg, Tom Stump, and Michael J. Greenberg.
13. **Static kinks or flexible hinges: Conformational distributions of bent DNA bound to integration host factor mapped by fluorescence lifetime measurements.** [Mitchell Connolly](#), Aline Arra, Viktoriya Zvoda, Peter J. Steinbach, Phoebe A. Rice, and Anjum Ansari.
14. **Understanding how the R2ab domain from Staphylococcal atulolysin E interacts with nanoparticle surfaces.** [Mackenzie B. Davidson](#), Y. Randika Perera, Taylor M. South, and Nicholas C. Fitzkee.
15. **Small molecule effectors of apolipoprotein E function.** [Gregory T. DeKoster](#), Melissa Brereton, Berevan Baban, and Carl Frieden.
16. **Structural insights into TCR binding to an immunogenic neoantigen.** [Jason Devlin](#), Sara Bobisse, Grant Keller, Alexandre Harari, and Brian M. Baker.
17. **Molecular driving forces and kinetics in large hairpin polyamide-DNA interactions.** Yang Song, Jacqui Niederschulte, Kristin Bales, Hyung Park, G. Davis Harris, Jr., Kevin J. Koeller, James K. Bashkin, and [Cynthia M. Dupureur](#).

18. **Sequence reversal prevents chain collapse and yields heat-sensitive intrinsic disorder.** Lance R. English, Alexander Tischer, Alysha K. Demeler, Borries Demeler, and Steven T. Whitten.
19. **Engineering pH-dependent protein interaction through inter-domain linkage.** Hyeyoung Eom, Christopher Smith, and James R. Horn.
20. **Thermodynamics Insights into allosteric regulation in homo-oligomeric proteins from mechanistic modeling.** Elihu C. Ihms, Melody Holmquist, Weicheng Li, Cameron Jamshidi, and Vicki Wysocki. Paul Gollnick, and Mark P. Foster.
21. **Examining DNA structure and stability modifications upon binding to platinum-based anticancer drugs by employing surface-enhanced Raman scattering and circular dichroism.** Claudette Fraire, Skylar Wappes, Sara Williams, Richard D. Sheardy, and Nasrin Mirsaleh-Kohan
22. **Binding of *Saccharomyces pombe* Alkyltransferase-Like Protein 1 (ATL1) to short double-stranded DNA.** Michael G. Fried.
23. **Interactions between the BPTF Bromodomain and Histone H4 tail in the context of the nucleosome.** Harrison A. Fuchs, Emma A. Morrison, and Catherine A. Musselman.
24. **Structural and biochemical characterization of artificially designed PDZ domains.** Young Joo Sun, Nicholas Panel, Matthew Sternke, Douglas Barrick, Thomas Simonson, and Ernesto J. Fuentes.
25. **Functional motions of first crystallized deoxyribozyme: Microsecond molecular dynamics simulations.** Mohammad Reza Ganjalikhany.
26. **NMR characterization of the translational isoforms of the human glucocorticoid receptor.** Emily Grasso, Ananya Majumdar, and Vincent Hilser.
27. **Characterization of potential Inhibitors of 2C-methyl-D-erythritol-2,4-cyclodiphosphate synthase (IspF).** Dakota Grote, Joy Blain, Sydney Watkins, Chante Muller, Timothy Hagen, and James Horn.
28. **Probing the effect of the ribosome on the protein folding pathway using single-molecule chemo-mechanical folding.** Emily Guinn, Pengfei Tian, Robert Best, and Susan Marqusee.
29. **Hierarchical interactions: Concept and application.** William G. Gutheil.
30. **Structure and binding of the RBPJ-L3MBTL3 notch signaling repression complex.** Daniel P Hall and Rhet A Kovall.
31. **Molecular principles underlying dual RNA specificity in the *Drosophila* SNF protein.** Gert Weber, Gregory DeKoster, Nicole Holton, Kathleen B. Hall, and Markus Wahl.
32. **Allosteric effects of RecB nuclease domain on RecBCD-DNA interactions.** Linxuan Hao, Michael Simon, and Timothy Lohman.
33. **The role of cotranslational folding in programmed ribosomal frameshifting.** Haley R. Harrington, Veronica Nash, and Jonathan P. Schleich.
34. **Transcription initiation: Energetics and mechanism of RNA-DNA hybrid translocation and promoter escape.** Kate L. Henderson, Cristen M. Molzahn, Lindsey C. Felth, Claire E. Evensen, Sarah Dyke, Guanyu Liao, Irina A. Shkel, and M. Thomas Record Jr.
35. **Role of the second dsRNA binding domain in PKR activation.** Stephen J. Hesler, Bushra Husain, Matthew Angeliadis, and James L. Cole.
36. **Structure activity relationships and stability of IspE in the non-mevalonate pathway.** Katarzyna B. Hoerchler, Timothy J. Hagen, and James R. Horn.
37. **Post-translational modification of microtubule C-terminal tails regulates microtubule bending and binding.** Kathryn Wall, Tanner Bobak, Harold Hart, Scott Tilden, Taviare Hawkins, and Loren Hough.
38. **Deciphering kinetic model of RNA polymerase I multi-round transcription.** Zachariah Ingram, David Schneider, and Aaron Lucius.
39. **Elastin's mechanism of elasticity.** Nour M. Jamhawi and Richard J. Wittebort.
40. **Investigation of PEP-19's conformational ensemble and interaction with calmodulin.** Josiah W. Johnson and Tori B. Dunlap.



41. **Disease-linked mutations in UBQLN2 promote phase separation and liquid-to-solid phase transitions.** Holly Jones, Thuy P. Dao, Brian Martyniak, Yongna Lei, Ashley J. Canning, Erica Colicino, Michael S. Cosgrove, Heidi Hehnly, and Carlos A. Castañeda.
42. **Investigating the pH sensitivity of Pab1's phase-separation.** Darren Kahan, Joshua Riback, Isabelle Gagnon, and Tobin Sosnick.
43. **Folding RNA in 3D using all atom molecular dynamics simulations guided by restraints.** Simi Kaur and Alan Chen.
44. **Rationally engineering the specificity of an  $\alpha\beta$  T cell receptor.** Grant Keller and Brian M. Baker.
45. **Modeling a simple polar network in leucine-rich repeat proteins with consensus design.** Sean A. Klein, Thuy P. Dao, Ananya Majumdar, and Doug Barrick.
46. **Protein surface supercharging turns proteins into allosteric conformational switches.** Peter J. Schnatz, Joseph Brisendine, Craig Liang, Bernard H. Everson, Cooper French, and Ronald L. Koder.
47. **Structural insights into the recruitment of CBP/P300 to the Notch transcription complex.** Ellen Kolb, Daniel Hall, Franziska Braendle, and Rhett Kovall.
48. **Unfreezing protein crystallography.** Eaton E. Lattman.
49. **Novel intramolecular interactions in the RNA-binding protein LARP6.** José M. Castro, Xinzhu Pu, Hatice Kulkoyluoglu, Eliana L. Peña, Leticia Gonzalez, Lisa R. Warner, and Karen A. Lewis.
50. **Probing the homotropic allostery of the oligomeric Trp- and RNA-binding protein TRAP via mechanistic modelling and protein engineering.** Weicheng Li, Elihu C. Ihms, Melody L. Holmquist, Vicki Wysocki, Paul Gollnick, and Mark P. Foster.

## Poster Session II (Posters 51 – 101)

Last Names starting with M to Z

51. **Understanding the function of Scytalidoglutamic peptidase through molecular dynamics simulations.** Melissa Anderson, Emily Fleischmann, and Shuhua Ma.
52. **Selectivity and editing mechanisms of an aminoacyl-tRNA *trans*-editing factor.** Xiao Ma, Eric M. Danhart, Marina Bakhtina, Alexandra B. Kuzmishin, Kotaro Nakanishi, Marija Kosutic, Ronald Micura, Karin Musier-Forsyth, and Mark P. Foster.
53. **Crystal structure and ligand specificity of the lectin domain from the staphylococcal biofilm protein Aap.** Joseph J. Maciag, Catherine T. Chaton, and Andrew B. Herr.
54. **Stability and molecular dimensions of DNA and RNA pseudoknots.** Calliste Reiling-Steffensmeier and Luis A. Marky.
55. **Mycobacterium tuberculosis ClpC1 N-terminal domain is dispensable for adaptor protein-dependent allosteric regulation.** Justin D. Marsee and Justin M. Miller.
56. **Understanding key interactions controlling heme ligand selection in truncated hemoglobins.** Jaime E. Martinez, Ananya Majumdar, Jamie L. Schlessman, and Juliette T. J. Lecomte.
57. **Bilayer depth dependence of hydrophobic amino acid transfer free energies.** Dagan C. Marx and Karen G. Fleming.
58. **Structural and dynamical basis of thermostabilization in an engineered variant of the Engrailed homeodomain.** Catrina Nguyen, Jennifer T. Young, and Michelle E. McCully.
59. **Stabilizing and delivering growth factors to promote angiogenesis.** David W. Howell, Gabriela G. Mendes, Shang-Pu Tsai, Kayla J. Bayless, and Sarah E. Bondos.
60. **Cellular small molecules contribute to twister ribozyme catalysis by indirect proton transfer.** Kyle J. Messina and Philip C. Bevilacqua.

61. **Bayesian analysis of isothermal titration calorimetry for binding thermodynamics.** Trung Hai Nguyen, Arien S. Rustenburg, Stefan G. Krimmer, Hexi Zhang, John D. Clark, Paul A. Novick, Kim Branson, Vijay S. Pande, John D. Chodera, and David D. L. Minh.
62. **Structure-based design of hTERT promotor G-quadruplex ligands.** Robert C. Monsen, Lynn Deleeuw, William L. Dean, Jonathan B. Chaires, and John O. Trent.
63. **MutSy-induced DNA conformational changes provide insights into its role in meiotic recombination.** Sudipta Lahiri, Bharat Lakhani, Yan Li, Manju Hingorani, David Beveridge, and Ishta Mukerji.
64. **Insights on the folding properties influencing the secretion of autotransporter proteins.** Kristopher S. Murray and Patricia L. Clark.
65. **Understanding the structure and basic function of small basic protein in biofilms.** Andrea L. Ori, Alexander E. Yarawsky, and Andrew B. Herr.
66. **Time-resolved contrast variation SAXS for studying protein-RNA interactions.** Suzette A. Pabit, Andrea M. Katz, George D. Calvey, and Lois Pollack.
67. **The adsorption kinetics of biomolecules on to PEGylated gold nanoparticles.** Y. Randika Perera, Alex Hughes, and Nicholas C. Fitzkee.
68. **Interfaces of the topoisomerase V (HhH)<sub>2</sub> domains have surprising contributions to thermodynamic stability.** Mark Petersen, Rebecca Fang, Ananya Majumdar, and Doug Barrick.
69. **The structure of pilA from *Acinetobacter baumannii* AB5075 suggests functional differentiation in *Acinetobacter* type IV pili.** Leslie A. Ronish, Erik Lillehoj, James R. Fields, Eric J. Sundberg, and Kurt H. Piepenbrink.
70. **Effects of short discriminators on transcription initiation.** Dylan Plaskon, Kate Henderson, Taka Ishikuri, Sanj Nair, Sarah Doughy, and Tom Record.
71. **Mapping the hydration contributions to DNA selection by ETS-family transcription factors.** Amanda V. Albrecht, Hye Mi Kim, and Gregory M. K. Poon.
72. **A systemic analysis of patterns of internal hydration of staphylococcal nuclease.** Anne Rice, Jaime L. Schlessman, and Bertrand Garcia-Moreno.
73. **Single-molecule studies of noncognate ternary complex formation of Hfq.** Jorjetha Roca and Sarah A. Woodson.
74. **Molecular mechanisms of *Clostridium difficile* biofilm formation.** Leslie A Ronish and Kurt Piepenbrink.
75. **Cavities in context.** Kelly A. Jenkins, Martin J. Fossat, Siwen Zhang, Durgesh K. Rai, Sean Klein, Richard Gillilan, Zackary White, Grayson Gerlich, Scott A. McCallum, Roland Winter, Sol M. Gruner, Doug Barrick, and Catherine A. Royer.
76. **Solution structure, kinetic characterization, and functional-site distant non-synonymous single nucleotide variants of human guanylate kinase indicate a role for conformational dynamics in functionality.** Nazimuddin Khan, David Ban, Pablo Trigo-Mourino, Marta G. Carneiro, Lynn DeLeeuw, William L. Dean, John O. Trent, Manfred Konrad, Donghan Lee, and T. Michael Sabo.
77. **Role of topological defects in membrane protein homeostasis.** Francis J. Roushar, Timothy C. Gruenhagen, Wesley D. Penn, Bian Li, Jens Meiler, Beata Jastrzebska, and Jonathan P. Schleich.
78. **Structural and functional analysis of FBXW7-mediated Notch receptor degradation.** Emma Schoch and Rhett Kovall.
79. **Mutation of the RNA polymerase I trigger loop reveals functional divergence of the eukaryotic RNA polymerases.** Catherine Scull, Zachariah Ingram, Aaron Lucius, and David Schneider.
80. **Establishing a molecular mechanism for polypeptide translocation catalyzed by each nucleotide binding domain of ClpA.** Nathaniel Scull and Aaron Lucius.
81. **Effect of sequence and length of the conformation of a riboswitch.** Spiridon E. Sevdalis and Ana Maria Soto.
82. **Thermodynamic and kinetics studies of DNA i-motif formation.** Leslie R. Robinson, Bibiana Sparks, Rohan Varkeyr, and Richard D. Sheardy.

83. **Binding of *E. coli* SSB C-terminal tails to RecO and RecOR proteins.** [Min Kyung Shinn](#), Alexander Kozlov, and Timothy Lohman.
84. **Evolutionary changes in Caspase folding landscape.** [Suman Shrestha](#) and A. Clay Clark.
85. **Structural characterization of vitiligo associated T cell receptor: Towards the development of improved melanoma immunotherapy.** [Angela R. Smith](#), Cormac Cosgrove, Caroline Le Poole, and Brian M. Baker.
86. **Purification of tubulin using the high-molarity Popov protocol as a replacement for HPLC Column purification.** [Jamorious L. Smith](#), Savannah J. West, Mary Beard, and Edwin A. Lewis.
87. **Forced unfolding simulations of membrane and soluble proteins.** Wang Zongan, John M. Jumper, Karl F. Freed, and [Tobin R. Sosnick](#).
88. **Seventeen Kilodalton Protein (Skp) trimerization is sensitive to urea concentration.** [Emily H. Stahl](#), Barbara Amann, and Karen G. Fleming.
89. **Consensus sequence design as a general strategy to create hyperstable, biologically active proteins.** [Matt Sternke](#), Katherine W. Tripp, and Doug Barrick.
90. **RheoScale: A tool to quantify overall mutation behaviors at individual protein positions.** Abby M. Hodges, Aron W. Fenton, Larissa L. Dougherty, and [Liskin Swint-Kruse](#).
91. **Engendering catalytic activity by increasing dynamics in a designed catalase enzyme.** [Aleksandr Uvaydov](#), Jonathan M. Preston, Bernard H. Everson, Fabien Giroud, David J. Vinyard, Kelly N. Greenland, Emma Bjerkefeldt, Shelley D. Minter, Gary W. Brudvig, and Ronald L. Koder.
92. **Binding of polyamines to i-motif DNA.** [Randy M. Wadkins](#) and Michael M. Molnar.
93. **Synonymous codon usage affects *E. coli* fitness.** [Ian M. Walsh](#), Micayla A. Bowman, and Patricia L. Clark.
94. **Detection and localization of very weak protein-ligand interactions.** Brian Fuglestad, Nicole E. Kerstetter, Sabrina Bédard, and [A. Joshua Wand](#).
95. **Determining the binding thermodynamics and effect of Ru(II)Ph<sub>2</sub>phen)<sub>3</sub> on the dynamic instability of microtubules.** [Savannah J. West](#), Mary C. Beard, Jamorious L. Smith, and Edwin A. Lewis.
96. **Experimental characterization of "metamorphic" proteins predicted from an ensemble-based thermodynamic description.** [James O. Wrabl](#), Jordan Hoffmann, Miranda Russo, Cyril Cook, Mark Sowers, and Vincent J. Hilser.
97. **Characterizing heterotropic allosteric interactions in human liver pyruvate kinase.** [Tiffany Wu](#) and Aron Fenton.
98. **The evolution and mechanism of enzyme specificity and stability of caspase-3.** [Liqi Yao](#) and A. Clay Clark
99. **Defining interactions between the biofilm-related functional amyloid, Aap, and its potential nucleating protein, Sbp.** [Alexander E. Yarawsky](#), Andrea L. Ori, and Andrew B. Herr.
100. **Interaction of PKR with Viral RNA Inhibitors.** [Cassie Zerbe](#), Mitchell Godin, Katherine Launer-Felty, and James L. Cole.
101. **Folding proteins outside their native environment: Folding the innards of an outer membrane transporter.** [Adam M Zmyslowski](#), Isabelle Gagnon, Yi Zhang, Catherine Royer, and Tobin Sosnick