

15th Annual Gibbs Conference on Biothermodynamics

		Saturday, September 29
4:00 - 7:00 pm	Check-in in Indian Room	
7:00 - 10:00 pm	Reception in Indian Room	

		Sunday, September 30
7:30-8:30	Breakfast	
8:30-9:30	<p style="text-align: center;">Keynote George Rose (The Johns Hopkins University) "Protein Folding: Questioning the Paradigm"</p>	
9:30-10:00	Refreshment break	
		Session I: Nucleic Acids I (Moderator: Wendy VanScyoc)
10:00-10:40	<p style="text-align: center;">Eric Kool "Noncovalent Interactions in Protein-DNA Recognition"</p>	
10:40-11:00	<p style="text-align: center;">Ana Maria Soto "Thermodynamics of DNA Triple Helices: Contributions of TAT/TAT and TAT/CGC* Base-Triplet Stacks"</p>	
11:00-11:20	<p style="text-align: center;">Aaron L. Lucius "DNA Unwinding Step-size of <i>E. coli</i> RecBCD Helicase Determined from Single Turnover Kinetic Studies"</p>	
11:20-12:00	<p style="text-align: center;">Jonathan B. Chaires "Structural Selectivity of Drug-Nucleic Acid Interactions"</p>	
12:00-1:00	Lunch	
1:00-3:00	Free time	
		Session II: Proteins I (Moderator: Sethe Burgie)
3:00-3:40	<p style="text-align: center;">Neville Kallenbach "The Unfolded State of Polypeptides"</p>	
3:40-4:20	<p style="text-align: center;">Angel E. Garcia "Molecular Evidence for Alpha Helix Stabilization by Shielding of the Backbone Hydrogen Bonds by Side Chain Atoms"</p>	
4:20-4:40	<p style="text-align: center;">Irene Karantzeni "Thermodynamic Basis of Thermal Stability of <i>Taq</i> DNA Polymerase: A Comparative Study with <i>E. Coli</i> Pol I"</p>	
4:40--5:00	Refreshment break	
5:00-5:20	<p style="text-align: center;">Esther A. Strohmeyer "Direct Measurement of Local and Global Contributions in the Binding of Conformycin to Bovine Adenosine Deaminase"</p>	
5:20-6:00	<p style="text-align: center;">Kenneth P. Murphy "Binding and Linkage in Serine Protease Inhibition"</p>	
6:00-7:00	Dinner	
8:00-10:00	POSTER SESSION I	

Monday, October 1	
7:30-8:30	Breakfast
	Session III: Nucleic Acids II (Moderator: Ana Maria Soto)
8:30-9:10	Robert Clegg "Looking at Conformational Properties of DNA and DNA/Dye Interactions, Using Covalently Attached Cy3, Cy5 and Tetramethylrhodamine"
9:10-9:30	Irina Rouzina "DNA Melting by Mechanical Force"
9:30-10:00	Refreshment break
10:00-10:20	Shi-Jie Chen "RNA Hairpin Folding Kinetics"
10:20-10:40	Murrell Godfrey "Interactions of Selected Anilinoacridines with DNA: Thermodynamic Considerations of Acridine Ring Substituents"
10:40-11:20	Tim Lohman "DNA Unwinding by the <i>E. coli</i> SF-1 DNA Helicases, Rep and UvrD"
11:20-12:00	Carlos Bustamante "Some Issues Regarding the Thermodynamics of Single Molecule Experiments"
12:00-1:00	Lunch
1:00-3:30	Free time
	Session IV: Proteins II (Moderator: Matthew Auton)
3:30-4:10	Dorothy Beckett "Kinetic Mechanism of Cooperative Association of the Biotin Repressor with DNA"
4:10-4:30	Beatrice Huyghues-Despointes "pK _a Values of Histidine Residues in RNase Sa: Effect of Salt Concentration and Net Charge"
4:30-5:00	Refreshment break
5:00-5:20	Eric M. Nicholson "Differences Between Prp and Its Homolog Dpi: Implications of a Partially Structured State in the Formation of Prp ^{sci} "
5:20-6:00	George J. Turner "Subdomains in the F and G Helices of Bacteriorhodopsin Regulate the Conformational Transitions of the Reprotonation Mechanism"
6:00-7:00	Dinner
8:00-10:00	POSTER SESSION II

	Tuesday, October 2
7:30-8:30	Breakfast
	Session V: Interacting Systems (Moderator: David Schell)
8:30-9:10	Walter F. Stafford "Sedimentation Velocity Analysis of Interacting Systems: Thermodynamic Information from Non-linear Curve Fitting to Sedimentation Boundaries"
9:10-9:30	James K. Kranz "Hydrostatic Pressure as a Probe of Conformational Transitions in the Calmodulin:peptide Complex"
9:30-10:00	Refreshment break
10:00-10:20	Daumantas Matulis "Determination of Hydrophobic Interactions Between Long Chain Aliphatic Hydrocarbons by Titration Calorimetry: Aliphatic Amine Aggregation and Protonation pK_a Shift"
10:20-10:40	Olga Y. Lubman "Structural and Thermodynamic Analysis of the Peptide Binding Specificity of the SH2 Domain of Src Kinase"
10:40-11:20	John J. Correia "The Regulation and Energetics of Receptor-Mediated Smad Trimerization"
11:40-12:30	Lunch

POSTER INFORMATION

Posters will be presented in one of two sessions, I and II, to be held Sunday and Monday evenings, respectively, in Sledgefoot Hall (Next to Freeberg, the dining hall).

Session I: First Authors **A** through **Landt**. Posters may be mounted starting on Sunday morning.

Session I: First Authors **Langsetmo** through **Z**. Posters may be mounted starting on Monday morning.

POSTERS I, alphabetical by author
Sunday 8-10 pm, Sledgefoot Hall

Influence of Pro-21 and Pro-26 on Rat β -Parvalbumin Stability

Sayeh Agah and Michael T. Henzl

Structural and Thermodynamic Properties of *Parmecium* Calmodulin Mutants Defective in K⁺ Channel Regulation

Zeynep Akyol, Rhonda Newman, Yulia Volokhina, Brenda Sorensen, and Madeline Shea

Proline Isomerase Assisted Refolding of Cro Repressor Variants

Ibrahim A. Al-Duraibi and Michael C. Mossing

Interaction of Fluoroalcohols with the Peptide Backbone

Matthew Auton and D. W. Bolen

T-cell receptor ligand specific oligomerization revisited

Brian M. Baker and Don C. Wiley

Changes in flexibility upon dissociation of a cytoplasmic dynein light chain and relation to dynein assembly

Elisar Barbar and Michael Hare

The Temperature Dependence of Denaturant Interactions with Proteins and Effects on Protein Stability Curves

Doug Barrick and Mark E. Zweifel

Folding and Stability of Procaspase-3

Kakoli Bose and A. Clay Clark

The Symmetry Rule Model of Hemoglobin Cooperativity Predicts the Strong Correlations Observed Between Heats of Oxygen Binding and Bohr Proton Release

Sethe Burgie, Jo M. Holt, and Gary K. Ackers

Unfolding of Fatty Acid Binding Protein Studied by Fluorescence Correlation Spectroscopy

Krishnananda Chattopadhyay and Carl Frieden

Comparison of ab-initio and molecular dynamics calculated free energies for a predicted arginine-wobble interaction.

Alan Cheng, Stephen P. Edgcomb, and Alan D. Frankel

Characterization of Caspase Recruitment Domains of RICK and Procaspase-1

Yun-Ru (Ruby) Chen and Clay A. Clark

Thermodynamics of Denaturant-Induced Unfolding of a Protein G B1 Domain Variant

Allan Chris M. Ferreon and D. W. Bolen

Determinants of Cooperativity: the Doubly ligated structure of human ileal Bile Acid binding protein

Gregory T. DeKoster, Gregory P. Tochtrop, and David P. Cistola

Heat Capacity Changes upon Burial of Polar and Non-Polar Groups in Proteins

Dmitri N. Ermolenko, Vakhtang V. Loladze, and George I. Makhataдзе

Buried Polar Groups and Protein Stability

Dmitri N. Ermolenko, Vaktang V. Loladze, and George I. Makhataдзе

Determining the Cooperativity of Hydrogen Exchange and Unfolding in Ubiquitin via Mass Spectrometry

Debra Ferraro, T. Sivaraman, Lynn Teesch, and Andrew D. Robertson

The Protein-Detergent Interaction Studied by Isothermal Titration Calorimetry and Differential Scanning Calorimetry

Jaime M. Ferreira and Mark Chiu

Experimental pK_a values of buried groups for calibration of continuum methods for pK_a calculations and for assessment of contributions by buried water to the dielectric response in the protein interior

Carolyn Fitch, D. Karp, A. Gittis, D. Nguyen, E. Lattman, and B. Garcia-Moreno

Protein electrostatics from the experimental perspective: are we ready to trade in the pH meter for a PC?

Carolyn Fitch, Kelly Lee, and Bertrand Garcia-Moreno

Energetics of transmembrane helix-helix interactions

Karen G. Fleming

Pressure Perturbation Calorimetry: A novel technique to measure volumetric and solvation properties of proteins and biopolymers in solution

Verna Frasca, Valerian Plotnikov, J. Michael Brandts, John F. Brandts and Lung-Nan Lin

***In vitro* Interactions of CAP and *lac* Repressor**

Michael G. Fried and Margaret A. Daugherty

***In vitro* Interactions of RNA Polymerase with CAP**

Michael G. Fried and Damian Dyckman

Interactions of Nucleotide Cofactors with the *Escherichia Coli* Replication Factor DNAC Protein

Roberto Galletto, S. Rajendran and W.M. Bujalowski

Conformational and Thermodynamic Properties of Peptide Binding to S100P

Alexey V. Gribenko, Mercedes Guzmán-Cassado, Maria M. Lopez, and George I. Makhataдзе

The Coefficient of Thermal Expansion of Ribonuclease T1 in Osmolyte Solutions

Marko Häckel and D. Wayne Bolen

Ligand-Linked Stability of Calmodulin

Kenosha F. Hobson, Susan Pedigo, and Maurice R. Eftink

Structural Insight into the Energetics of OMTKY3-Subtilisin Carlsberg Binding

James R. Horn and Kenneth P. Murphy

Energetics of Acridine-based Anticancer Agents with DNA: Influence of Ring Modifications on Binding Thermodynamics

Rachel Hutchins and David Graves

Stability of G-Quadruplex DNA

Mack Kennington, Patrick Harkins, and Susan Pedigo

Kinetic Evidence for Direct Transfer of *E.coli* SSB Protein between Two Molecules of ssDNA

Alexander G. Kozlov and Timothy M. Lohman

Thermodynamics of Distamycin A and Netropsin Competitive binding to the DNA Duplexes Containing two Binding Sites

Jurij Lah and Gorazd Vesnaver

Requirements for 2' OH group in the Salt-dependent binding of Tat peptides to TAR RNA

Stephen G. Landt, Stephen P. Edgcomb, Valerie Calabro, A. Rene Tipton and Alan D. Frankel

POSTERS II, alphabetical by author

Monday 8-10 pm, Sledgefoot Hall

Heterodimer Preference in Myosin Phosphatase Subunit Coiled Coil Interactions

Knut Langsetmo, Walter F. Stafford and Terence Tao

Ligand Design for Virus Agglomeration-Coprecipitation

Rex Lovrien, Daumantus Matulis and Vytautas Raulinaitis

Interactions of cytoplasmic dynein light chains Tctex-1 and LC8 with the intermediate chain IC74

Moses Makokha, Michael Hare, and Elisar Barbar

Single Turnover DNA Unwinding Studies of *E. coli* UvrD-DNA Helicase Activity

N. Karl Maluf and Timothy M. Lohman

The Relation between Stability and Repeat Number in a Structurally Modular Protein

Cecilia C. Mello and Doug Barrick

Determinants of Ligand Binding Stoichiometry: Intestinal Fatty Acid Binding Protein

Benhur Ogbay John Monsey and David P. Cistola

A Genetic Polymorphism in Human Intestinal fatty acid binding Protein Affects Ligand Release

Jeramia J. Ory, John D. Monsey, Sethe Burgie and David P. Cistola

Characterization of a procaspase-3 mutant that disrupts the oligomeric state of the native protein

Cristina Pop, Ashutosh Tripathy, Erin Shiver, Brett Feeney, and Clay Clark

Molecular Dynamics and Quantum Mechanical Studies of Cytochrome *c*

Ninand V. Prabhu, Sergio E. Dalosto, Jane M. Vanderkooi and Kim A. Sharp

Efficacy of Macromolecular Crowding in Forcing Proteins to Fold

Youxing Qu and D. W. Bolen

Intestinal Fatty Acid Binding Protein: Structural Perturbations by Single Site Mutations

Massy Rajabzadeh and Carl Frieden

Multiple-step Kinetic Mechanism of DNA-Independent ATP Binding and Hydrolysis by Escherichia Coli Replicative Helicase DnaB Protein: Quantitative analysis using the Rapid Quench-Flow method

S. Rajendran, M. J. Jesewska and W. Bujalowski

Detection of Membrane-Protein Conformations by PWR

G. Ramsay, Z. Salamon, S. Cowell, V. J. Hraby, G. Tollin

Thermodynamics of Helix Unfolding

John Richardson and George Makhataдзе

Sequence Determinants of the Ubiquitin Fold

Andrew D. Robertson

Osmolyte Effects on Protein Folding Dynamics: Is How You Get There as Important as Where You're Going?

Andrew T. Russo and Wayne Bolen

Stability of Cognate and Near Cognate Codon-Anticodon-Ribosome Interactions Involving *tRNA*^{Phe}

Kevin Y Sambomatsu and Simpson Joseph

Folding and Assembly Kinetics of Cro Dimers

John Satumba and Michael C. Mossing

Design of a Hyperthermostable Variant of RNase Sa

David Schell, Niles Peirce, Travis Waldron, Kenneth Murphy, Stephen Mayo, and Nick Pace

First Principles Calculation of Macromolecular Binding Constants

Kim Sharp

Thermodynamics of the Inclusion of dC Bulges and dC*dC Mismatches in DNA Hairpin Molecules

Ronald A. Shikiya and Luis A. Marky

Non-Linear Least Squares Curve Fitting of Sedimentation Velocity Data for Self-Associating Tubulin Heterodimers

Chris A. Sontag, Walter F. Stafford III, and John J. Correia

Cooperative Binding of Alkyltrimethylammonium Ions to Natural and Homopolymeric DNA

Charles H. Spink and Dominik Mantella

Addition of a Flexible “Tail” Raises Thermostability and Lowers Calcium Affinity of Calmodulin N-domain

Brenda R. Sorensen, Laurel A. Coffeen, Rainbo Hultman and Madeline A. Shea

The Stability Curve of Bovine Adenosine Deaminase is Bimodal

Ester A. Strohmeyer and B. Mark Britt

Electrostatic interactions in ubiquitin: Stabilization of carboxylates by lysine amino groups

Monica Sundd, Nicole Iverson, Rhonda Newman, Jared Helm and Andrew D. Robertson

Improving the Lac Repressor: the L148F Mutation Increases Inducibility

Liskin Swint-Kruse, Bonnie Fairbanks, Atul Maheshwari and Kathleen Shive Matthews

Cooperativity in Ligand-Protein Recognition: Human Ileal Bile Acid-Binding Protein

Gregory P. Tochtrop, Douglas F. Covey and David P. Cistola

Asp 79 Makes a Large, Unfavorable Contribution to the Stability of Ribonuclease Sa

Saul Trevino, Kevin Shaw, Stephanie Newsom, J. Martin Scholtz and C. Nick Pace

Domain-Specific Optical Spectroscopy of Calmodulin: Intrinsic Phenylalanine Fluorescence Selectively Reports on Conformational Change of the N-domain as shown by Time-Resolved and Steady-State Studies

Wendy S. Van Scyoc, Brenda Sorensen, Elena Rusinova, William Laws, J.B. Alexander Ross, and Madeline A. Shea

Anion Binding to Protein-Protein Complexes

Travis T. Waldron, Modestos A. Modestou, Rhonda A. Newman, Keith Bryan, and Kenneth P. Murphy

Properties of Microtubule synthesized in *Escherichia coli* and Folded *in vitro* by the Chaperonin CCT

Robley Williams, Chirayu Shah, Cathy Xu and Jonathan Vickers

A Three-Dimensional Statistical Mechanical Model of Folding Double-Stranded Chain Molecules

Wenbing Zhang and Shi-Jie Chen

Structure, Stability and Modularity of the Ankyrin-Repeat Domain from *Drosophila* Notch

Mark Zweifel and Doug Barrick