

**3rd Carbondale Conference**

**on**

**"Functional Energetics"**

**September 16–19, 1989**

## **SATURDAY NIGHT (9/16/89)**

No food available at Touch of Nature on Saturday.

5:00 p.m. - ? Registration

8:00 p.m. Open Cash Bar

## **SUNDAY A.M. (9/17/89)**

(Moderator: Norma Allewell)

7:30 - 8:30 a.m. BREAKFAST

9:00 - 9:10 a.m. Norma Allewell

9:10 - 9:30 a.m. Stan Gill

9:30 - 9:35 a.m. Discussion

9:35 - 9:55 a.m. Joe Simmons  
"Stabilization of the T-State of Hemoglobin"

9:55 - 10:00 a.m. Discussion

10:00 - 10:20 a.m. Margaret Daugherty  
"Effects of Protons on the Distribution of the Intermediate Ligation States of Human Hemoglobin"

10:20 - 10:25 a.m. Discussion

10:25 - 10:40 a.m. BREAK

10:40 - 11:00 a.m. Vince LiCata  
"Molecular Communication Across the Regulatory Interface in Human Hemoglobin Operates Via Three Distinct Coupling Modes"

11:00 - 11:05 a.m. Discussion

11:05 - 11:25 a.m. Phil Speros  
"Energetics of Intermediate Ligation Species of Human Hemoglobin: the Cobalt(II)/Iron(II)-CO System"

11:25 - 11:30 a.m. Discussion

11:30 - 11:50 a.m. Jeremy Johnson  
"Cooperative Enthalpy and Entropy of Assembly for CN-MET Intermediate Ligation State Species 21 in Human Hemoglobin"

11:50 - 11:55 a.m. Discussion

11:55 - 12:15 p.m. Michael Doyle  
"Utility of Single Isotherms in Complex Ligand-Linked Dimerizing Systems"

12:15 - 12:20 p.m. Discussion

12:30 - 1:30 p.m. LUNCH

## **SUNDAY P.M.**

"Poster Put-Up" after lunch. Will remain up for rest of meeting.

6:30 - 7:30 p.m. DINNER

## **SUNDAY NIGHT**

(Moderator: Stan Gill)

8:00 - 8:20 p.m. Robley Williams, Jr.

8:20 - 8:25 p.m. Discussion

8:25 - 8:45 p.m. Tomasz Heyduk  
"Fluorescence Method for Studying DNA-Protein Interactions in Solution"

8:45 - 8:50 p.m. Discussion

8:50 - 9:10 p.m. Dorothy Beckett  
"Thermodynamic Analysis of Single Site Mutants of the Bacteriophage  
Lambda  $\text{cI}$  Repressor that are Defective in Cooperative Binding to DNA"

9:10 - 9:15 p.m. Discussion

9:15 - 9:35 p.m. Thomas Callaci  
"Assembly of Xenopus Transcription Factor IIIA - 5S - RNA Complex"

9:35 - 9:40 p.m. Discussion

9:40 - 10:00 p.m. D.P. Mascotti  
"The Thermodynamic Extent of Counterion Release upon Binding  
Oligolysines to Single Stranded Nucleic Acids"

10:00 - 10:05 p.m. Discussion

## **MONDAY A.M. (9/18/89)**

(Moderator: Michael Johnson)

7:30 - 8:30 a.m. BREAKFAST

9:00 - 9:20 a.m. John Schellman

9:20 - 9:25 a.m. Discussion

9:25 - 9:45 a.m. Gregg Fields  
"Statistical Thermodynamic Models of Protein Crystallization and Aggregation"

9:45 - 9:50 a.m. Discussion

9:50 - 10:10 a.m. Ken Murphy  
"Thermodynamic Features Common to Protein Unfolding and Dissolution  
of Hydrophobic Compounds in Water"

10:10 - 10:15 a.m. Discussion

10:15 - 10:30 a.m. BREAK

- 10:30 - 10:50 a.m. W.W. van Osdol  
"Multi-Frequency Calorimetry of Cytochrome C"
- 10:50 - 10:55 a.m. Discussion
- 10:55 - 11:15 a.m. Marcelo Santoro  
"Differential Scanning Calorimetry of an Oxidized Mutant, D26A,  
of E. coli Thioredoxin"
- 11:15 - 11:20 a.m. Discussion
- 11:20 - 11:40 a.m. Glen Ramsay  
"A Calorimetric Study of Guanidine HCl Induced Protein  
Destabilization in Diphtheria Toxin"
- 11:40 - 11:45 a.m. Discussion
- 12:30 - 1:30 p.m. LUNCH

### **MONDAY NIGHT**

(Moderator: Wayne Bolen)

- 5:00 - 6:00 p.m. POSTER SESSION
- 6:30 - 7:30 p.m. DINNER
- 8:00 - 8:20 p.m. Steve White
- 8:20 - 8:25 p.m. Discussion
- 8:25 - 8:45 p.m. Dave Burz  
"Quaternary Structure of Wild Type and Single-Site Mutants  
of E. coli Aspartate Transcarbamoylase"
- 8:45 - 8:50 p.m. Discussion
- 8:50 - 9:10 p.m. Paul Morin  
"Thermal Stability of Membrane Reconstituted Yeast  
Cytochrome C Oxidase"
- 9:10 - 9:15 p.m. Discussion
- 9:15 - 9:35 p.m. Diana Montgomery  
"The Dissociation of Three Hydrophilic Subunits from Yeast  
Cytochrome C Oxidase"
- 9:35 - 9:40 p.m. Discussion
- 9:40 - 10:00 p.m. T. Harrigan  
"Subunit Interactions in the E. coli TRP Repressor"
- 10:00 - 10:05 p.m. Discussion



## **POSTERS**

Subunit Interactions in Single Site Mutants of *E. coli* Aspartate Transcarbamylase  
**S. Bromberg, D.S. Burz, and N.M. Allewell**

Assembly of Microtubules and Formation of Microtubule Liquid Crystals: Linkage of Free Energies?  
**Alan R. Cross, Anne Hitt, and Robley C. Williams, Jr.**

Linkage Graphs of CO and O<sub>2</sub> Binding to Hemocyanins  
**Stanley J. Gill, and Mauro Angeletti**

Titration Microcalorimetry of Calcium Binding to Calmodulin  
**Herbert R. Halvorson**

Thermodynamic Linkages in the Regulation of Transcription by RNA Polymerase  
**Simon J. Harris and James C. Lee**

Which Denaturant Concentration Scales Provide Thermodynamically Valid Unfolding Free Energy Changes?  
**Yingwen Huang, Marcelo Santory, and Wayne Bolen**

A Numerical Approach to Binding Phenomena in Biological Systems  
**Catherine A. Royer, and Joseph M. Beechem**

Solvation Thermodynamics  
**John Schellman**

Studies of the Association Between Cholera Toxin and Its Cell Surface Receptor, Ganglioside GM1, Inserted into Vesicles  
**Arne Schon, Dong Xie, and Ernesto Freire**

Quasi-Molecular Modeling of Liquid Crystalline Bilayers Using Neutron and X-Ray Diffraction Measurements  
**Michael C. Welner, and Stephen H. White**