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**GORDON RESEARCH CONFERENCES** *frontiers of science*  
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**Nancy Ryan Gray, Ph.D.**  
Director

## GORDON RESEARCH CONFERENCE

on 2004 Gordon Research Conference on Reversible Associations in Structure & Molecular Biology

### FINAL PROGRESS REPORT

DOE  
DE-FG02-04ER15516

The Gordon Research Conference (GRC) on 2004 Gordon Research Conference on Reversible Associations in Structure & Molecular Biology was held at Four Points Sheraton, CA, 1/25-30/2004. The Conference was well-attended with 82 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. Attached is a copy of the formal schedule and speaker program and the poster program. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.

I want to personally thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Dr. Edward Eisenstein  
2004 Conference Chair

# REVERSIBLE ASSOCIATIONS IN STRUCT & MOLEC BIOL

Four Points Sheraton: Harbortown  
Jan 25-30, 2004

Name	Organization	Participation	Status
GARY ACKERS	WASHINGTON UNIVERSITY	Poster Presenter	Registered
MICHELLE ARKIN	SUNESIS PHARMACEUTICALS	Discussion Leader	Registered
BRIAN M BAKER	UNIVERSITY OF NOTRE DAME	Poster Presenter	Registered
DAVID BAKER	UNIVERSITY OF WASHINGTON	Speaker	Registered
JOHN M BEALS	ELI LILLY & COMPANY	Poster Presenter	Registered
LORA L BURNS-HAMURO	PROVID PHARMACEUTICALS	Attendee	Registered
CARLOS J CAMACHO	BOSTON UNIVERSITY	Speaker	Registered
SHARON L CAMPBELL	UNIVERSITY OF NORTH CAROLINA	Speaker	Registered
IRWIN M CHAIKEN	DREXEL UNIVERSITY	Speaker	Registered
JOHN C CHAMPAGNE	WYATT TECHNOLOGY	Attendee	Registered
JEAN A CHMIELEWSKI	PURDUE UNIVERSITY	Speaker	Registered
ANDREA G COCHRAN	GENENTECH	Speaker	Registered
JAMES L COLE	UNIVERSITY OF CONNECTICUT	Discussion Leader	Registered
MARK M DAVIS	STANFORD UNIVERSITY SCHOOL OF MEDICINE	Speaker	Registered
VICTORIA J DEROSA	TEXAS A&M UNIVERSITY	Speaker	Registered
JOHN R DESJARLAIS	XENCOR	Poster Presenter	Registered
SAVITHA DEVANATHAN	UNIVERSITY OF ARIZONA	Speaker	Registered
EDWARD EISENSTEIN	CENTER FOR ADVANCED RESEARCH IN BIOTECHNOLOGY	Chair	Registered
ADRIAN H ELCOCK	UNIVERSITY OF IOWA	Discussion Leader	Registered
TONY FINK	UNIVERSITY OF CALIFORNIA, SANTA CRUZ	Speaker	Registered
ERNESTO FREIRE	JOHNS HOPKINS UNIVERSITY	Discussion Leader	Registered
JESSICA E FRIEDMAN	BIOGEN IDEC	Attendee	Registered
ALLEN FURST	BECKMAN COULTER, INC.	Attendee	Registered
ALAN P GRAVES	UNIVERSITY OF CALIFORNIA-SAN FRANCISCO	Poster Presenter	Registered
ZYGMUNT GRYCZYNSKI	UNIVERSITY OF MARYLAND	Speaker	Registered
JEFFREY C HANSEN	COLORADO STATE UNIVERSITY	Speaker	Registered
KARA M HERLIHY	BIACORE, INC.	Poster Presenter	Registered
JOHN J HILL	ICOS CORPORATION	Attendee	Registered
GEOFFREY J HOWLETT	UNIVERSITY OF MELBOURNE	Attendee	Registered
RICHARD H INGRAHAM	BOEHRINGER INGELHEIM PHARMACEUTICALS, INC.	Poster Presenter	Registered
REINHARD JAHN	MAX-PLANCK INST FOR BIOPHYSICAL CHEMISTRY	Speaker	Registered
LEO C JAMES	MRC LABORATORY OF MOLECULAR BIOLOGY	Attendee	Registered
ANTHONY H KEEBLE	UNIVERSITY OF YORK	Poster Presenter	Registered
GUNTHER KERN	ASTRAZENECA	Attendee	Registered
SCOTT KLAKAMP	ABGENIX INC	Speaker	Registered
COLIN KLEANTHOUS	UNIVERSITY OF YORK	Discussion Leader	Registered
RACHEL R KROE	BOEHRINGER INGELHEIM PHARMACEUTICALS	Poster Presenter	Registered
BRADLEY W LANGHORST	UNIVERSITY OF NEW HAMPSHIRE	Attendee	Registered
THOMAS M LAUE	UNIVERSITY OF NEW HAMPSHIRE	Discussion Leader	Registered
DEBORAH LECKBAND	UNIVERSITY OF ILLINOIS	Speaker	Registered
MARK A LEMMON	UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE	Speaker	Registered
IRIS K LEUNG	PFIZER	Attendee	Registered
TIMOTHY LOHMAN	WASHINGTON UNIVERSITY	Speaker	Registered
JIRONG LU	ELI LILLY & COMPANY	Poster Presenter	Registered

ALAN E MARK	UNIVERSITY OF GRONINGEN	Speaker	Registered
JONATHAN S MARVIN	GENENTECH	Poster Presenter	Registered
STEVEN J MCBRYANT	COLORADO STATE UNIVERSITY	Attendee	Registered
KENNETH R MILLER	BIACORE, INC.	Attendee	Registered
ALLEN P MINTON	THE NATIONAL INSTITUTES OF HEALTH	Speaker	Registered
KIYOSHI MIZUUCHI	NATIONAL INSTITUTES OF HEALTH	Speaker	Registered
KENNETH P MURPHY	UNIVERSITY OF IOWA	Vice Chair	Registered
DAVID MYSZKA	UNIVERSITY OF UTAH	Discussion Leader	Registered
HELENA K NORDIN	BIACORE AB	Poster Presenter	Registered
TERRENCE G OAS	DUKE UNIVERSITY	Speaker	Registered
BARBARA A OWEN	MAYO CLINIC	Poster Presenter	Registered
CATHERINE PARRISH	BIACORE, INC	Poster Presenter	Registered
GARY J PIELAK	UNIVERSITY OF NORTH CAROLINA	Poster Presenter	Registered
LESZEK POPPE	AMGEN, INC.	Attendee	Registered
PETER E PREVELIGE	UNIVERSITY OF ALABAMA-BIRMINGHAM	Poster Presenter	Registered
STEPHEN RASO	WYETH BIOPHARMA	Attendee	Registered
VIRGINIA L RATH		Speaker	Registered
ERIC REESE	MICROCAL, LLC	Attendee	Registered
REBECCA L RICH	UNIVERSITY OF UTAH	Speaker	Registered
MATTIA G ROCCO	ISTITUTO NAZIONALE PER LA RICERCA SUL CANCRO	Poster Presenter	Registered
MARINA K. ROELL	XOMA (US) LLC	Attendee	Registered
LUMELLE A SCHNEEWEIS	UNIVERSITY OF PENNSYLVANIA	Poster Presenter	Registered
GIDEON SCHREIBER	WEIZMANN INSTITUTE OF SCIENCE	Speaker	Registered
DAVID J SCOTT	UNIVERSITY OF NOTTINGHAM	Attendee	Registered
BRUCE T. SEET	SAMUEL LUNENFELD RESEARCH INSTITUTE	Attendee	Registered
BRIAN K SHOICHE	UNIVERSITY OF CALIFORNIA-SAN FRANCISCO	Speaker	Registered
JAMES G SHORTER	WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH	Speaker	Registered
VANITA D SOOD	UNIVERSITY OF WASHINGTON	Poster Presenter	Registered
TIMOTHY A SPRINGER	HARVARD MEDICAL SCHOOL	Speaker	Registered
JOEL L SUSSMAN	WEIZMANN INSTITUTE OF SCIENCE	Discussion Leader	Registered
DAVID C SWINNEY	ROCHE PALO ALTO	Poster Presenter	Registered
SUSAN S TAYLOR	UNIVERSITY OF CALIFORNIA, SAN DIEGO	Discussion Leader	Registered
SPENCER C THIEL	BOSTON UNIVERSITY	Attendee	Registered
KOUHEI TSUMOTO	TOHOKU UNIVERSITY	Poster Presenter	Registered
SANDOR VAJDA	BOSTON UNIVERSITY	Attendee	Registered
VINCENT L VILKER	NATIONAL INSTITUTE OF STANDARDS & TECHNOLOGY	Attendee	Registered
GAY-MAY WU	AMGEN INC.	Attendee	Registered
JIN ZHANG	THE JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE	Speaker	Registered

# Reversible Associations In Structural & Molecular Biology

January 25-30, 2004  
Four Points Sheraton: Harbortown  
Ventura, CA

Chair: [Edward Eisenstein](#)  
Vice Chair: [Kip Murphy](#)

## SUNDAY

2:00 pm - 9:00 pm	Arrival and Check-in
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Recognition and Reactions at the Cell Surface</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Michelle R. Arkin</b> (Sunesis Pharmaceuticals)
7:45 pm - 8:20 pm	<b>Mark Davis</b> (Howard Hughes Medical Institute) "Ligand Binding at the Immunological Synapse"
8:20 pm - 8:55 pm	<b>Timothy Springer</b> (Harvard Medical School) "Inside Out Signaling in Integrins, from the Cytoplasm to the Extracellular Ligand Binding Domains"
8:55 pm - 9:30 pm	<b>Deborah Leckband</b> (University of Illinois) "Novel Mechanisms in Cell Adhesion"
9:30 pm	Poster Session / Reception

## MONDAY

7:30 am - 8:30 am	Breakfast
8:30 am	Group Photo
9:00 am - 12:30 pm	<b>Transition States, Specificity and Design in Protein Recognition</b>
9:00 am - 9:10 am	Discussion Leader: <b>Colin Kleanthous</b> (University of York)
9:10 am - 9:50 am	<b>Gideon Schreiber</b> (Weizmann Institute of Science) "Deciphering the Pathway of Protein-Protein Association and Its Application Towards Protein Design"
9:50 am - 10:30 am	<b>Colin Kleanthous</b> (University of York) "Specificity in High Affinity Systems"
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:40 am	<b>Dan S. Tawfik</b> (The Weizmann Institute of Science) "Conformational Diversity and Protein Evolution"
11:40 am - 12:20 pm	<b>David Baker</b> (University of Washington) "Prediction and Design of Protein-Protein Interactions"
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session / Refreshments
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Molecular Simulations of Biomolecular Associations</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Adrian H. Elcock</b> (University of Iowa)
7:45 pm - 8:20 pm	<b>Brian K. Shoichet</b> (University of California, San Francisco) "Model Systems for Docking and Scoring"

8:20 pm - 8:55 pm	<b>Alan E. Mark</b> (University of Groningen) "Simulating Self-Organization in (Bio)Molecular Systems"
8:55 pm - 9:30 pm	<b>Carlos J. Camacho</b> (Boston University) "From Molecular Recognition to Docking: A Guide to Predicting Protein Interactions"
9:30 pm	Poster Session / Refreshments

## TUESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Assembly of Macromolecular Complexes Involving Nucleic Acid</b>
9:00 am - 9:10 am	Discussion Leader: <b>James Cole</b> (University of Connecticut)
9:10 am - 9:50 am	<b>Timothy Lohman</b> (Washington University School of Medicine) "Helicase-Catalyzed DNA Unwinding"
9:50 am - 10:30 am	<b>Kiyoshi Mizuuchi</b> (NIDDK, National Institutes of Health) "Assembly and Disassembly Dynamics of Protein-DNA Complexes Involved in Phage Mu Transposition: Studies at the Single Molecule Level"
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:40 am	<b>Jeffrey C. Hansen</b> (Colorado State University) "Protein-Mediated Assembly of Novel, Higher-Order Chromatin Structures in vitro"
11:40 am - 12:20 pm	<b>Victoria DeRose</b> (Texas A&M University) "Metals, Folding and Catalysis in Ribozymes"
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time / tour and wine tasting at Wyatt Technologies
4:00 pm - 6:00 pm	Poster Session / Refreshments
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Natively Unfolded Proteins and their Role in Molecular Recognition</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Joel L. Sussman</b> (Weizmann Institute of Science)
7:45 pm - 8:20 pm	<b>Tony Fink</b> (University of California Santa Cruz) "Conformational Mobility of -Synuclein: A Natively Unfolded Protein"
8:20 pm - 8:55 pm	<b>James Shorter</b> (Whitehead Institute for Biomedical Research) "Modulation of Yeast Prion Behavior by the AAA+ Protein Hsp104"
8:55 pm - 9:30 pm	<b>Reinhard Jahn</b> (Max Planck Institute for Biophysical Chemistry) "Conformational Cycle of SNARE Proteins and Its Role in SNARE-Mediated Membrane Fusion"
9:30 pm	Poster Session / Refreshments

## WEDNESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>What Will Proteomics Miss: Weak, Small and Complex</b>
9:00 am - 9:10 am	Discussion Leader: <b>David G. Myszka</b> (University of Utah)
9:10 am - 9:50 am	<b>Rebecca Rich</b> (University of Utah) "Easy Come, Easy Go"
9:50 am - 10:30 am	<b>Virginia L. Rath</b> (Thios Pharmaceuticals) "Characterizing Allosteric Drugs by SPR"
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:40 am	<b>Savitha Devanathan</b> (University of Arizona) "Give Me a G, Give Me a P, Give Me a C, Give Me an R...What's It Spell?"
11:40 am - 12:20 pm	<b>Scott Klakamp</b> (Abgenix, Inc.) "How Long Must I Wait?"
12:30 pm	Lunch

1:30 pm - 4:00 pm	Free Time / whale watching, through Ventura shuttle
4:00 pm - 6:00 pm	Poster Session / Refreshments
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Signal Integration by Protein Phosphorylation</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Susan S. Taylor</b> (University of California San Diego)
7:45 pm - 8:20 pm	<b>Mark A. Lemmon</b> (University of Pennsylvania School of Medicine) "An Open-and-Shut-Case? Activation of Epidermal Growth Factor Receptor by Ligand-Induced Release of Auto-Inhibitory Interactions"
8:20 pm - 8:55 pm	<b>Sharon Campbell</b> (University of North Carolina) "Structure and Dynamic Studies of the Focal Adhesion Targeting Domain of Focal Adhesion Kinase (FAK): Regulation of Phosphorylation and Paxillin Binding"
8:55 pm - 9:30 pm	<b>Jin Zhang</b> (Johns Hopkins University School of Medicine) "Dynamic Visualization of Kinase/Phosphatase Activities in Living Cells"
9:30 pm	Poster Session / Refreshments

## THURSDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	<b>Discovery of Drugs that Disrupt Protein Interactions</b>
9:00 am - 9:10 am	Discussion Leader: <b>Ernesto Freire</b> (The Johns Hopkins University)
9:10 am - 9:50 am	<b>Ernesto Freire</b> (The Johns Hopkins University) "Different Strategies to Disrupt Protein/Protein Interactions: Competitive and Allosteric Inhibitors"
9:50 am - 10:30 am	<b>Jean Chmielewski</b> (Purdue University) "Small Molecule Inhibitors of Protein-Protein Interactions: HIV Proteins"
10:30 am - 11:00 am	Coffee Break
11:00 am - 11:40 am	<b>Irwin Chaiken</b> (Drexel University College of Medicine) "Differentiating Recognition and Activation in Designing Antagonists of Receptor Machines"
11:40 am - 12:20 pm	<b>Andrea Cochran</b> (Genentech, Inc.) "Peptide-Based Strategies to Inhibit Protein-Protein Interactions"
12:30 pm	Lunch
1:30 pm - 4:30 pm	Free Time
4:30 pm - 6:00 pm	<b>Special "Poster" Session: Selected Student Oral Presentations</b>
	Poster Judges: TBA
	Six, ten minute talks with five minutes of questions from student based on poster judging
6:00 pm	Dinner
7:30 pm - 9:30 pm	<b>Emerging Technologies for Studying Molecular Interactions</b>
7:30 pm - 7:45 pm	Discussion Leader: <b>Thomas Laue</b> (University of New Hampshire)
7:45 pm - 8:20 pm	<b>Zygmunt Gryczynski</b> (University of Maryland) "Surface Plasmon Coupled Emission - New Technology for Studying Biomolecular Processes"
8:20 pm - 8:55 pm	<b>Allen P. Minton</b> (National Institutes of Health) "Tracer Sedimentation Equilibrium: the "Swiss Army Knife" of Analytical Ultracentrifugation"
8:55 pm - 9:30 pm	<b>Terrence G. Oas</b> (Duke University Medical Center) "Protein Stability and Ligand Binding Measurements Using MS-Detected Amide Hydrogen Exchange in Living Cells and Crude Mixtures"
9:30 pm	Poster Session / Refreshments

**FRIDAY**

7:30 am - 8:30 am Breakfast

9:00 am Depart

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