Gordon research conference programs

Nucleic acids
June 11–16, 1995
New Hampton School
New Hampton, NH, USA

Cleavage and ligation

Tom Cech, University of Colorado, USA: **Smaller, better group I ribozymes**

Carol A Fierke, Duke University, USA: **Mechanism of RNase P-catalyzed cleavage of pre-tRNA**

Melissa Moore, Brandeis University, USA: **Exon ligation: the spliceosome and group II introns**

Alfonso Mondragón, Northwestern University, USA: **Structure and function of type I DNA topoisomerases**

Synthesis and therapeutics

Fritz Eckstein, Max Planck Institüte für Experimentelle Medizin, Göttingen, Germany: **The hammerhead ribozyme: structure, function, and application**

Peter Dervan, California Institute of Technology, USA: **Design of peptides for sequence-specific recognition in the minor groove of DNA**

Wolfgang Pieken, Nexagen, USA: **Novel 2'-pyrimidine nucleoside triphosphates as polymerase substrates and in SELEX**

Brian Froehler, Gilead, USA: **C-5 propyne-containing oligonucleotides**

Stephen Brown, Glaxo, USA: **Biophysical studies of peptide–nucleic acids as gene-targeting agents**

Repair and modification

Richard Wood, Imperial Cancer Research Fund, UK: **Nucleotide excision repair of DNA in mammalian cells**

Isabel Mellon, University of Kentucky, USA: **Transcription-coupled DNA repair**

Guo-Min Li, Duke University, USA: **Mismatch repair, genetic stability, and cancer avoidance**

Larry Simpson, University of California, Los Angeles, USA: **Mechanism of RNA editing in trypanosomes**

Walter Keller, Universität Basel, Switzerland: **Site-specific editing of nuclear messenger RNA precursors by adenosine to inosine conversion *in vitro***

Translation

Roy Parker, University of Arizona, USA: **to be announced**

Harry Noller, University of California, Santa Cruz, USA: **Probing spacial proximities in the ribosome**

Ruth Lehmann, Massachusetts Institute of Technology, USA: **Role of 3' UTR in translational control**

Jody Puglisi, University of California, Santa Cruz, USA: **to be announced**

Replication and recombination

Elizabeth Blackburn, University of California, San Francisco, USA: **Synthesis of telomeric DNA**

Nancy Craig, Johns Hopkins University, USA: **Tn7 transposition mechanism and target site selection**

Robert Craigie, NIH, USA: **Structure of HIV-1 integrase**

Nucleic acid selection

Jack Szostak, Harvard Medical School, USA: **to be announced**

Gerald Joyce, Scripps Institute, USA: ***In vitro* evolution of nucleic acid-based catalytic function**

Michael Yarus, University of Colorado, USA: **Selection of RNAs to perform translational reactions**

Transcription

Arnold Berk, University of California, Los Angeles, USA: **Mechanisms of transcriptional activation in eukaryotes**

Joan Conaway, Oklahoma Medical Research Foundation, USA: **Factors controlling initiation and elongation by RNA polymerase II**

Errol C Friedberg, University of Texas, Southwestern Medical Center, USA: **The transcription–nucleotide excision repair connection**

Richard A Young, Massachusetts Institute of Technology, USA: **New components and concepts in regulation of RNA polymerase II**

Assembly and transport

Iain Mattaj, EMBL, Germany: **A nuclear cap binding complex involved in pre-mRNA splicing and RNA transport**

Robin Reed, Harvard Medical School, USA: **Mechanisms of splice-site selection**

Michael Rosbash, Brandeis University, USA: **HIV Rev protein function and spliceosome assembly in yeast**

Gideon Dreyfuss, University of Pennsylvania, USA: **RNA binding proteins, nuclear transport, and fragile X mental retardation syndrome**

Rob Singer, University of Massachusetts, USA: **to be announced**

Structure and dynamics

Eric Westhof, CNRS, Strasbourg, France: **Modelling of RNA tertiary structures from biochemical and sequence data: usefulness and limits**

Gabrielle Varani, MRC, Cambridge, UK: **RNA recognition by basic domain and RNP proteins**

Steve Schultz, University of Colorado, USA: **to be announced**

Applications may be found in the February 3 issue of *Science* or requested from the conference chairmen:

Juli Feigon, PhD
Department of Chemistry and Biochemistry
University of California, Los Angeles
405 Hilgard Avenue
Los Angeles, CA 90024-1569, USA
Tel: 310 206 6922 Fax: 310 825 0982

Doug Turner, PhD
Department of Chemistry
University of Rochester
404 Hutchison Hall
River Campus
Rochester, NY 14627-0216, USA
Tel: 716 275 3207 Fax: 716 473 6889

Bioorganic chemistry
June 18–25, 1995
Proctor Academy
Andover, NH, USA

Bioorganic materials

Sam Gellman, University of Wisconsin, USA: **New strategies for protein design and protein refolding**

Reza Ghadiri, Scripps Research Institute, USA: **Self-assembly, self-organization, and molecular design**

Peter Lansbury, Jr, Massachusetts Institute of Technology, USA: **Nucleation-dependent protein aggregation in neurodegenerative disease**

Steve Regen, Lehigh University, USA: **Supramolecular chemistry with a view towards biology and medicine**

Protein synthesis and structure

Steve Kent, Scripps Research Institute, USA: **Bypassing ribosomal synthesis: probing a new universe of proteins**

Lila Gierasch, University of Massachusetts, USA: **Interactions of the chaperonin GroEL with its substrates and its co-chaperonin GroES**

Structural and analytical methods

Ruedi Aebersold, University of Washington, USA: **Identification and regulatory characterization of proteins in complex biological systems**

Brian Chait, The Rockefeller University, USA: **New probes of protein structure and interaction**

Engineered biosynthesis

John Frost, Michigan State University, USA: **Design, construction and use of microbial catalysts**

John Vederas, University of Alberta, Canada: **Structure and function of bacteriocins, antimicrobial peptides from lactic acid bacteria**

Chaitan Khosla, Stanford University, USA: **Engineered biosynthesis of unnatural natural products**

Molecular switches and cages

Itamar Willner, The Hebrew University of Jerusalem, Israel: **Photoswitchable biomaterials en route to bioelectronic devices**

Roger Tsien, University of California, San Diego, USA: **Molecules designed to poke and peek at cell signals**

Proteins under extreme conditions

Alexander Klibanov, Massachusetts Institute of Technology, USA: **Enzyme catalysis and structure in organic solvents**

Manuel Navia, Vertex Pharmaceuticals, USA: **The use of cross-linked enzyme crystals as stable catalysts**

Ming Xu, New England Biolabs, USA: **Self-splicing of proteins: molecular mechanism and potential applications**

Nucleic acids

Claude Hélène, Muséum National d'Histoire Naturelle — Laboratoire de Biophysique, France: **Antisense and antigene applications of synthetic oligonucleotides and oligonucleotide–intercalator conjugates**

Cynthia Burrows, State University of New York at Stony Brook, USA: **Recognition and reaction of specific guanines in DNA and RNA**

Nadrian Seeman, New York University, USA: **The control of DNA structure and topology**

Eric Kool, University of Rochester, USA: **The importance of shape in nucleic acid function**

Enzyme and receptor targets

Tom von Geldern, Abbott Laboratories, USA: **On the road to an endothelin antagonist**

Jean Chmeilewski, Purdue University, USA: **Dissociation of multisubunit proteins: a novel means of enzyme inhibition**

Carbohydrates and immunoglobulins

Mark Greene, University of Pennsylvania School of Medicine, USA: **Small synthetic forms of the immunoglobulin gene superfamily**

Laura Kiessling, University of Wisconsin, USA: **Carbohydrate–protein interactions: loose, but not promiscuous**

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Michael R Pavia, PhD
Sphinx Pharmaceuticals
840 Memorial Drive
Cambridge, MA 02139, USA
Tel: 617 354 0953 Fax: 617 354 4043

Glenn D Prestwich, PhD
State University of New York at Stony Brook
Center for Biotechnology
130 Life Sciences Building
Stony Brook, NY 11794, USA
Tel: 516 632 8521 Fax: 516 632 7960

Carbohydrate chemistry
June 25–30, 1995
Tilton School
Tilton, NH, USA

Oligosaccharide synthesis

JH van Boom, University of Leiden, Netherlands: **Synthesis of complex oligosaccharides via alkyl (aryl) l-thio-glycosides**

S Hanessian, Université de Montréal, Canada: **Stereocontrolled glycoside synthesis: from concept to practice**

A Hasegawa, Gifu University, Japan: **A facile synthesis of cell-surface oligosaccharides and their biological functions**

Y Ito, The Institute of Physical and Chemical Research (RIKEN), Japan: **Some aspects of stereochemical control in oligosaccharide synthesis**

D Kahne, Princeton University, USA: **Glycosylation using anomeric sulfoxides**

S Nishimura, Hokkaido University, Japan: **Glycoconjugate synthesis using isolated oligosaccharides as a versatile starting material**

R Schmidt, Universität Konstanz, Germany: **New aspects of glycoside bond formation**

A Vasella, Eidgenössische Technische Hochschule (ETH), Switzerland: **Approach to the synthesis of polysaccharide analogues**

C-H Wong, The Scripps Research Institute, USA: **Recent progress on the chemo-enzymatic synthesis of carbohydrates**

Glycopeptides

B Imperiali, California Institute of Technology, USA: **Protein glycosylation specificity and function**

M Meldal, Carlsberg Laboratory, Denmark: **Recent techniques in glycopeptide synthesis and biology**

H Paulsen, Universität Hamburg, Germany: **Syntheses of mucin glycopeptides**

R Polt, The University of Arizona, USA: **New methods for the synthesis of O-linked glycopeptides and the pharmacology of glycopeptide enkephalin analogs. (Is morphine obsolete?)**

Carbohydrate mimics

B Ernst, Ciba-Geigy, Switzerland: **Selectin-mediated cell adhesion**

H Hashimoto, Tokyo Institute of Technology, Japan: **Substrate mimics of glycoenzymes**

S Knapp, The State University of New Jersey, Rutgers, USA: **Studies in glycochemistry**

G Magnusson, University of Lund, Sweden: **Glycolipid analogs for biological investigations**

P Sinaÿ, Ecole Normale Superieure, France: **Facile syntheses of methylene linked sugars and cyclopentanes as carbohydrate mimics**

Molecular recognition of oligosaccharides

DR Bundle, University of Alberta, Canada: **Binding motifs in oligosaccharide–antibody complexes**

J Scott, Simon Fraser University, Canada: **Peptides mimicking carbohydrate epitopes on the cell wall of group A streptococcus**

E Toone, Duke University, USA: **Complexation in aqueous solution: evaluation of driving and opposing forces**

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O Hindsgaul, PhD, Chair
Department of Chemistry
University of Alberta
Edmonton, Alberta, Canada T6G 2G2
Tel: 403 492 9756 Fax: 403 492 7705

BM Pinto, PhD, Vice chair
Department of Chemistry
Simon Fraser University
Burnaby, British Columbia, Canada V5A 1S6
Tel: 604 291 3345 Fax: 604 291 3765