

# Gordon Research Conferences

**ALEXANDER M. CRUICKSHANK**

The Winter Gordon Research Conferences will be held 4 January to 11 March 1988 at the Sheraton Hotel, Ventura, California, and 11 January to 18 March 1988 at the Casa Sirena Marina Hotel, Oxnard, California.

Requests for applications to the Conferences, or for additional information, should be addressed to: Dr. Alexander M. Cruickshank, Di-

rector, Gordon Research Conferences, Gordon Research Center, University of Rhode Island, Kingston, RI 02881-0801. Telephone: 401-783-4011 or 401-783-3372.

Fixed Conference Fees, Winter 1988  
 Conferee (double occupancy) \$385  
 Conferee (single occupancy) \$495  
 Guest (double occupancy) \$275  
 Guest (single occupancy) \$385

## IMPORTANT—PLEASE NOTE—NEW REGULATION

1) Registration will be accepted by the office of the Director if postmarked 3 weeks prior to the Conference after which all registration will be on-site.

The Board of Trustees voted unanimously to implement an on-site registration fee which will be fifty dollars (\$50) higher than the standard registration fee (\$435 double occupancy, \$545 single occupancy). This on-site fee will apply to all conferees including speakers, discussion leaders, and guests.

2) Full fixed fee charged regardless of time conferee attends Conference. Please note fees.

3) Fixed fee cannot be prorated or reduced for anyone (speakers, discussion leaders, conferees).

## Biology of Aging

### Sheraton Hotel, Ventura

J. A. Joseph, chairman; D. Gershon, vice chairman

Membrane and Cellular Regulation of Physiological Function During Aging

### 15 February

Phylogenetic overview of functional aging: D. Ingram, discussion leader.

J. Tobin, "Defining human aging more than a semantic exercise."

D. M. Bowdan, "Measuring the rate of aging in primates."

E. J. Masoro, "Issues to be addressed in the use of the rat as a model of aging."

F. A. Lints, "Testing aging theories in *Drosophila*."

Immune responsiveness and immunoregulation during aging: D. L. Schmucker, discussion leader.

W. Weigle, "Effects of age on lymphocyte activation: Immunity and autoimmunity."

J. Bienenstock, "Neurons, neuropeptides and the expression of mucosal immunity."

M. Weksler, "Autoreconstruction of the immune deficit by total nodal irradiation in senescence."

The author, director of the Gordon Research Conferences, is professor emeritus of chemistry, University of Rhode Island, Kingston 02881-0801.

### 16 February

Changes in regulation of calcium mobilization and metabolism during aging: G. Roth, discussion leader.

R. Miller, "Age changes in calcium mobilization in lymphocyte mitogenesis."

B. Baum, "Age changes in calcium regulation in parotid gland."

B. Sacktor, "Age changes in parathyroid hormone and vitamin D regulation of calcium mobilization in intestine and kidney."

G. Gibson, "Altered calcium transport in the aged brain: Behavioral correlates."

Age-related alterations in membrane transbilayer structure: F. Schroeder, discussion leader.

G. Wood, "Fluorescence probes and membrane asymmetry: Effects of age and radiation-induced injury."

P. Devaux, "Regulation of transbilayer migration of membrane lipids."

L. Gordon, "Receptor mediated processes and transmembrane asymmetry."

### 17 February

Signal transduction in senescence: F. Crews, discussion leader.

J. Frascella, "Age- and radiation-induced electrophysiological and neurochemical alterations in nigrostriatal function: Similarities and differences."

P. Landfield, "Altered  $Ca^{++}$  conduc-

## 1988 Winter Schedule

### Sheraton Hotel

4-8 January Polymers  
 11-15 January Composites  
 18-22 January Electrochemistry  
 25-29 January Metals in Biology

1-5 February Protons and Membrane Reactions

8-12 February Chemistry and Biology of Peptides

15-19 February Biology of Aging  
 22-26 February Photoconductivity and Related Phenomena

29 February-4 March Estuarine Processes

7-11 March Chemistry of Electronic Materials

14-18 March

### Casa Sirena Marina Hotel

Superconducting Films  
 Cybernetics  
 Sensory Transduction in Microorganisms  
 Angiotensin

Prolactin

Organic Thin Films  
 Dynamics of Macromolecules and Polyelectrolyte Solutions  
 Marine Natural Products

Electron Transfer in Macromolecules  
 Chemotherapy of AIDS

tance and synaptic function during aging."

A. Lippa, "Possible mechanisms of age-related changes in brain muscarinic acetylcholine receptors."

G. Sun, "Poly PI in the aging mouse brain."

Role of free radicals in aging: R. Sohal, discussion leader.

I. Fridovich, "Biology of free radicals."

K. J. A. Davies, "Oxidative damage to proteins and membranes."

P. A. Cerutti, "Testing the free radical theory of aging."

### 18 February

Putative interventions in aging: D. Morgan, discussion leader.

T. Collier, "Brain graft reversal of 'benign forgetfulness' in senescence and lesion-induced degeneration in non-human primates."

M. B. Kay, "Senescent cell antigen and cellular life-span manipulation."

A. Richardson, "Influence of dietary restriction on gene expression during aging."

C. Finch, "Future direction in intervention."

Special lectures: Overviews.

T. F. Williams: Can the study of aging be separated from the study of disease?

H. Rasmussen, "Spatial-temporal model of cell activation."

### 19 February

Interrelationships between differentiation and aging: D. Gershon, discussion leader.

O. Hockwin, "Aging of the lens: Possible effects of early developmental events."

T. Johnson, "Genetic inferences from strain of the nematode (*C. elegans*) with lengthened life-span."

K. Kelley, "Role of growth hormone and prolactin in regulating the immune response of aged animals."

D. Gershon, "Overview and directions of future research."

There will be a call for posters at this meeting.

## Angiotensin and Related Hormones

### Casa Sirena, Oxnard

Molecular Mechanisms of Vasoactive Hormones

V. J. Dzau, chairman; M. I. Phillips, vice chairman

### 1 February

Regulation of gene expression: V. J. Dzau, chairman.

G. Felsenfeld, "Chromatin structure and gene expression."

D. Burt, "Transcriptional control and nuclear factors in renin gene expression."

J. Drouin, "ANF gene expression: Regulatory elements."

D. Gardner, J. Baxter, discussants  
 Intracellular protein processing, sorting, and secretion: T. Inagami, chairman.

D. Sabatini, "Mechanisms for the incorporation of proteins into membranes and organelles."

T. Inagami, "ProANF processing enzyme: Purification and localization."

M. Paul, "Renin intracellular processing and secretion in transfected cells."

K. Yamamoto, "Role of glycosylation in renin metabolism."

K. Murakami, discussant.

### 2 February

Tissue renin angiotensin I: M. I. Phillips, chairman.

V. J. Dzau, "Vascular renin angiotensin system."

P. Mulrow, "Adrenal renin angiotensinogen system."

M. Peach, "Angiotensinogen expression in adipocytes."

M. Cogan, "Cellular effect of angiotensin II on proximal renal tubules."

D. Ganten/L. G. Navar, discussants.  
 Tissue renin angiotensin system II: W. F. Ganong, chairman.

K. Lynch, "Brain renin angiotensin system."

W. F. Ganong, "Pituitary renin angio-

tensin system."

A. Husain, "Reproductive system."

J. Sealey/W. Hseuh, discussants.

### 3 February

Molecular biology and regulation of receptors: F. Murad, chairman.

R. F. Dixon, "Genetic analysis of ligand binding to  $\beta$  adrenergic receptor."

J. Lewicki, "Molecular biology and function of ANF low MW 'C' receptor."

C. Yip, "Cloning and characterization of ANF high MW receptor."

K. Lynch/K. Catt, "Expression of angiotensin receptor in oocytes." Discussants.

Signal transduction: Emphasis on G-protein: R. W. Alexander, chairman.

E. Ross, "Mediation of receptor signaling via G-protein."

J. Exton, "Vasopressin receptor and G-protein."

K. Catt, "Control of aldosterone by angiotensin II is mediated by G-protein."

J. Douglas, "Spectrum of signal transduction mechanisms of kidney epithelium."

### 4 February

Blood vessel growth and angiogenesis: M. Peach, chairman.

J. Folkman, "Angiogenesis: An overview."

L. T. Williams, "Cellular mechanisms of growth regulation factors."

G. Owens, "Angiotensin effect on vascular smooth muscle growth."

Transgenic animals as a tool for studies of gene expression and physiology: K. Gross, chairman.

J. Mullins, "Expression of renin in transgenic mice."

C. Seidman, "ANF expression in transgenic mice."

L. Field, "Physiological effect of ANF fusion transgenes."

### 5 February

Renin inhibitor development: W. Holt, chairman.

Design and pharmacologic studies of renin inhibitors: J. Wood, H. Kleinert, D. Pals, speakers.

M. Miyazaki, discussant.

## Chemotherapy of AIDS

### Casa Sirena Hotel, Oxnard

K. Folkers, chairman; D. Henry, vice chairman

### 14 March

Epidemiology: D. Kanouse, discussion leader.

D. Francis, "Incidence, prevalence and trends."

W. Winkelstein, "Transmission and infectivity."

K. Mayer, "Natural history."

Speaker to be announced, "AIDS and intravenous drug abuse."

Speaker to be announced, "Heterosexual transmission."

### 15 March

Vaccines: E. Emini, discussion leader.

M. Helleman, "Considerations in the development of successful viral vaccines."

Speaker to be announced, "Development of retroviral vaccines: Background and issues."

S. Putney, "Potential HIV subunit vaccines: Current status."

Speaker to be announced, "HIV recombinant virus vector vaccines: Current status."

E. Emini, "Immunological considerations in the development of an HIV subunit vaccine."

### 16 March

Chemotherapy: D. Henry discussion leader.

D. W. Berry, subject to be announced.

J. L. Rideout, subject to be announced.

### 17 March

Chemotherapy: J. Martin, discussion leader.

J. Driscoll, "Nucleosides in HIV chemotherapy."

Speakers and subjects to be announced.

### 18 March

Enhancement of the immune system: K. Folkers, discussion leader.

R. Capetola, "Synthetic B cell immunostimulants."

F. E. Durr, "Synthetic immunomodulators. Potential therapy for AIDS."

Y. Nara and K. Folkers, "Studies on blood levels of CoQ<sub>10</sub>, B<sub>6</sub> and B<sub>2</sub> for patients with AIDS or ARC."

## Composite Materials

### Sheraton Hotel, Ventura

L. Nicolais, chairman; R. M. Ikeda, vice chairman

### 11 January

J. C. Halpin, discussion leader.

W. Barry, "Introductory remarks."

P. M. Hergenrother, "High-performance new thermoplastics as composite matrices."

S. Allen, "New reinforcing fibers."

S. S. Sternstein, discussion leader.

N. Cogswell, "Processing of high-performance thermoplastic based composites."

D. Mallow, "Processing of high-temperature thermoset composites."

### 12 January

A. T. DiBenedetto, discussion leader.

M. R. Kamal, "Flow behavior and orientation of short fiber composites."

D. Shirrel, "Processing and properties of SMC."

K. Frederick, discussion leader.

M. Darlington, "Long-term properties of short fiber composites."

J. W. Gillespie, Jr., "Design methodology for short fiber reinforced composite structures."

### 13 January

D. Wilkins, discussion leader.

B. Thorfinnson, "Control of prepreg processing."

D. Ruhmann, "The development of a filament wound railroad hopper car: A case study."

E. Fitzgerald, discussion leader.

L. B. Ilciewicz, "Material selection in design methodology."

C. T. Herakovich, subject to be announced.

### 14 January

R. M. Christensen, discussion leader.

N. Laws, "Progressive cracking of cross ply laminates."

G. Dvorak, "Plasticity effects in metal matrix composites."

R. M. Ikeda, discussion leader.

Short presentations from conference attendees.

### 15 January

M. Narkis, discussion leader.

S. J. DeTeresa, "The prime importance of second-order effects in anisotropic materials."

G. Marom, "Chemical and physical design of fiber-matrix interlayers."

## Cybernetics

### Casa Sirena Hotel, Oxnard

E. von Glasersfeld, chairman; P. Pangaro, vice chairman

Applied Epistemology: Models, Representations, Applications

### 18 January

P. Pangaro, discussion leader.

D. Rummelhart, "New brews: Powers and limitations."

S. Dreyfus, "Epistemological support for magic."

O. Selfridge, subject to be announced.

P. Steedman, discussion leader.

H. von Foerster, "The objectivity of yesterday."

L. Beyer, "Objectivity and critical social theory."

### 19 January

P. Garvin, discussion leader.

C. Montgomery, "Is there a special linguistics for computers?"

I. Melchuk, "Semantic representation and its implementation."

A. Becker, discussion leader.

L. Talmy, "How language structures its concepts: The role of grammar."

P. Hopper, "Language games and inertial frames."

### 20 January

B. Patten, discussion leader.

M. Conrad, "Organization of ecosystem networks and biological adaptation."

R. Ulanowicz, "Information flow in ecological networks."

M. Higashi and E. Teramoto, "Adaptation in ecological networks: A systems approach."

W. Powers, discussion leader.

W. Williams, "Control theory: New foundation for choice-theoretic economies."

R. Marken, "Cooperation and conflict."

T. Bourbon, "Communication, control, and linear causality."

### 21 January

F. Steier, discussion leader.

K. Gergen, "Toward madness in our methods."

R. Schweder, "Artful realism: The phenomenon of divergent realities."

K. Smith, "Parallel processing in researching human relationships."

H. Bauersfeld, discussion leader.

P. Cobb, "Elementary school mathematics: The mutual construction of realities."

E. Ackermann, subject to be announced.

### 22 January

P. Clough, discussion leader.

S. Tyler, "Writing ethnography."

D. Porush, "Cybernetics and literature."

P. Edwards, "The cultural politics of high tech."

## Electrochemistry

### Sheraton Hotel, Ventura

W. R. Heineman, chairman; P. N. Ross, Jr., vice chairman

### 18 January

L. R. Faulkner, discussion leader.

R. W. Murray, "Solid-state voltammetry."

M. S. Wrighton, "Surface chemistry of microfabricated structures: New microelectrochemical devices."

A. F. Diaz, discussion leader.

T. J. Marks, "Design, construction, and electrochemistry of 'metal-like' molecular assemblies."

B. Miller, "Electrochemical aspects of cuprate-based superconductors."

### 19 January

R. P. Van Duyne, discussion leader.

A. T. Hubbard, "Electron energy-loss spectroscopy of electrode surfaces."

T. M. Cotton, "SERS studies of Langmuir-Blodgett monolayers: Applicability to biological systems."

R. Fawcett, discussion leader.

M. R. Philpott, "Vibrational spectroscopy of specifically adsorbed ions. Ab initio calculations and experiments."

R. de Levie, "The dynamic double layer."

### 20 January

J. Wagenknecht, discussion leader.

D. H. Evans, "Low temperature kinetic studies using microelectrodes."

E. Steckhan, "Indirect electrochemical processes: Principles, approaches and applications."

P. N. Ross, discussion leader.

Open session.

### 21 January

H. N. Blount, discussion leader.

M. Majda, "Electrochemistry of organized, monolayer and bilayer assemblies of amphiphiles."

H. A. Abruna, "X-rays as probes of electrochemical interfaces."

A. Ewing, "Voltammetry inside single nerve cells."

D. A. Buttry, "Ion and solvent transport in thin films on electrodes."

H. B. Mark, Jr., discussion leader.  
 T. M. Duncan, "NMR of molecules adsorbed at surfaces."  
 L. H. Thaller, "Design considerations for nickel hydrogen cells."

## 22 January

F. M. Hawkridge, discussion leader.  
 W. J. Albery, "Kinetics and mechanisms of conducting organic salt enzyme electrodes."  
 G. S. Wilson, "Electrochemical detection of immunological reactions."

## Electron Transfer in Macromolecules

### Casa Sirena Hotel, Oxnard

M. G. Simic, chairman; S. Ferguson-Miller, vice chairman

## 7 March

Mechanisms of electron transfer: N. Sutin, discussion leader.  
 N. Sutin, "Factors determining electron transfer rates."  
 M. A. Ratner, "Equilibrium constraints on dynamical electron transfer."  
 A. Kuki, "Electron tunneling paths in proteins."  
 Techniques and measurements: A. D. Trifunac, discussion leader.  
 A. D. Trifunac, "Transient paramagnetic transients in pulse radiolysis."  
 K. G. Spears, "Transient relaxation of ionic states by picosecond techniques."

## 8 March

Long-range electron transfer in proteins: H. B. Gray, discussion leader.  
 D. Beratan, "Theory."  
 J. Winkler, "Free energy effects."  
 H. B. Gray, "Distance and medium effects."  
 Microelectronics: T. W. Barrett, discussion leader.  
 A. Harriman, "Electron and charge transfer processes in porphyrins."  
 A. Henglein, "Ionization effects in the photochemistry of colloidal semiconductors."

## 9 March

Principles of molecular electronics: B. Simic-Glavaski, discussion leader.  
 A. G. MacDiarmid, "Conducting polymers: Basic structural, doping and electronic concepts."  
 B. Simic-Glavaski, "Molecular electronic devices."  
 D. Mobius, "Monolayer substrate interaction and the construction of functional systems on solids."  
 J. B. Lando, "Assembly of polymerizable amphiphilic molecules in microstructures."  
 Radiation and biomolecules: I. Kaetsu, discussion leader.  
 I. Kaetsu, "Biopolymers."  
 G. O. Phillips, "Radiation effects on connective tissue—hyaluronic acid."  
 E. S. Kempner, "Principles of molecular size measurements by radiation inactivation."

## 10 March

Analysis of protein structure and function by radiation: S. Ferguson-

Miller, discussion leader.

S. Fleischer, "Analysis of structure and function of membrane proteins."  
 M. J. McCreery, "Evidence for functional domains of proteins detected by target analysis."  
 S. Ferguson-Miller, "Potential problems in target analysis."  
 M. G. Simic, discussion leader.  
 Discussion: Posters.

## 11 March

Polymers—conductivity and cross-linking: Y. Tabata, discussion leader.  
 Y. Tabata, "Radiation-induced cross-linking of macromolecules."  
 Y. Hama, "Light- and heat-induced conversion of charged species to neutral radicals."

## Chemistry of Electronic Materials

### Sheraton Hotel, Ventura

D. W. Hess, chairman; P. George, vice chairman

## 7 March

P. George, discussion leader.  
 J. Meindl, "Processing needs for future integrated circuits."  
 D. Johnson, "Electroceramics processing."  
 F. DiSalvo, discussion leader.  
 A. Stacy, "Chemistry of superconductive materials."  
 I. Shah, "Growth of high  $T_c$  superconductors by sputtering."  
 J. Weaver, "Surface and interface chemistry of superconductive materials."

## 8 March

D. Brundle, discussion leader.  
 J. Demuth, "Scanning tunneling microscopy and spectroscopy of semiconductor surfaces."  
 W. Rabalais, "Direct recoil spectrometry for analysis of surface composition and structure."  
 B. Coleman, "Inelastic electron tunneling and low-temperature scanning microscopy."  
 A. Heeger, discussion leader.  
 N. Bartlett, "Layered organic compounds."  
 R. Elsenbaumer, "Conducting polymers."

## 9 March

L. Thompson, discussion leader.  
 J. Schellekens, "Silylation of resists."  
 L. Halle, "Modification of resist processes."  
 S. Morita, "Plasma deposition of resists."  
 B. Breiland, discussion leader.  
 D. Brown, "Chemical precursors of MOCVD."  
 J. Beauchamp, "Experimental and theoretical studies of reaction intermediates and mechanisms in silicon CVD."

## 10 March

K. Spear, discussion leader.  
 J. Butler, "Vapor deposition of diamond."  
 T.-M. Lu, "Ionized cluster beam de-

position of thin films."

B. Yoldas, "Chemistry of oxide materials and thin film formation via sol-gel processes."  
 S. Williams, discussion leader.  
 R. Williams, "Molecular and electronic interactions at interfaces."  
 D. Leyden, "Characterization of surfaces using techniques of molecular spectroscopy."

## 11 March

D. Nelson, discussion leader.  
 Short summary presentations by discussion leaders followed by general discussion.

## Estuarine Processes

### Sheraton Hotel, Ventura

B. Sanders, chairman; R. Biggs, vice chairman

## 29 February

Estuarine chemistry: R. F. Mantoura, discussion leader.  
 M. Whitfield, "Perspectives in estuarine chemistry."  
 T. Church, "Processes controlling the chemistry of trace metals in estuarine water."  
 L. Cifuentes, "The application of stable isotopes to estuarine biogeochemical processes."  
 G. Knauer, discussion leader.  
 J. Lovelock, "Estuarine regulatory processes from a geophysiological viewpoint."

## 1 March

Micronutrients: F. Azam, discussion leader.  
 J. Fuhrman, "Rapid turnover of dissolved organic nutrients by estuarine microorganisms."  
 H. Ducklow, "The flux of carbon through estuarine bacterioplankton."  
 T. F. Thingstad, "Interrelations between bacterial degradation of organic matter and the cycling of mineral nutrients."  
 D. Monahan, "The importance of dissolved organic matter for the growth and energetics of invertebrates."  
 D. Crisp, discussion leader.  
 F. Azam, "Bacterial utilization of organic matter: Mechanisms, rates and food webs."

## 2 March

Trace metal chemistry and biological interactions: S. George, discussion leader.  
 W. Sunda, "Metal interactions with phytoplankton."  
 D. Hamer, "Regulation of metallothionein induction."  
 K. Jenkins, "Strategies for trace metal homeostasis in invertebrates."  
 S. Silver, "Metal detoxication in bacteria."

## 3 March

Strategies of adaptation: K. Jenkins, discussion leader.  
 P. Hochachka, "Principles of biochemical adaptation: Can we transfer underlying mechanisms?"  
 W. Welch, "The mammalian heat shock response: A cellular defense mechanism."

D. Morse, "Mechanisms of synchronous spawning, settling and metamorphosis."

The modification of an estuary: The San Francisco Bay estuary: R. Biggs, discussion leader.

F. Nichols, "The difficulties of evaluating anthropogenic impact."  
 S. Luoma, "Bioavailability of chemical constituents."

## 4 March

Estuarine protection: D. Malins, discussion leader.  
 J. Cappuzzo and J. Farrington, "Biogeochemistry and biological effects of lypophilic organic contaminants in Buzzards Bay."  
 T. Davies, "Can the regulatory structure adapt to evolving scientific understanding?"

## Dynamics of Macromolecular and Polyelectrolyte Solutions

### Casa Sirena Hotel, Oxnard

B. R. Ware, chairman; L. Magid, vice chairman

## 22 February

T. P. Lodge, "Diffusion of linear and branched polymers in concentrated solutions and gels."  
 F. Lanni, "Long-range tracer diffusion of size fractionated polymers in protein solutions and gel networks as models of cytoplasm in live cells."  
 G. D. J. Phillies, "Probe motion in polymer and polyelectrolyte solutions."  
 W. Burchard, "Dynamic light scattering from polymers of different architectures in the dilute and semidilute regimes."  
 Peter Pusey, "Colloidal fluids, crystals, and glasses."

## 23 February

D. L. Taylor, "Dynamics of actin and myosin in living cells."  
 K. S. Zaner, "Physical chemistry of actin networks."  
 R. Nossal, "Analytical models of the gelation and elasticity of cytoskeletal networks."  
 N. L. Thompson, "Phospholipid Langmuir-Blodgett films as models of immunological cell membranes."  
 F. Rondelez, "Dynamics of polymer solutions near solid-liquid interfaces."

## 24 February

S. Levene, "Gel electrophoresis of DNA using time-varying fields."  
 J. Noolandi, "Biased reptation theory of DNA gel electrophoresis."  
 H. Yu, "Polyelectrolyte diffusion and electrophoresis in polymer solutions and gels."  
 V. Bloomfield, "DNA condensation by multivalent ions."  
 J. M. Schurr, "Dynamics and structures of DNA and DNA/protein complexes."

## 25 February

B. Chu, "SAXS at the SUNY Beamline, NSLS/BNL."  
 S.-H. Chen, "SAXS and SANS mea-

surements of counterion condensation and distribution around cylindrical micelles."

M. Rinaudo, "Polyion-counterion interaction in dilute solution."

L. Magid, discussion leader.

Discussion of contributed posters.

## 26 February

B. J. Ackerson, "Collective order induced in equilibrium liquid and solid phases by a shear flow."

L. Magid, "Dynamics of microemulsions."

## Marine Natural Products

### Casa Sirena Hotel, Oxnard

R. Moore, chairman; J. Clardy, vice chairman

## 29 February

J. Clardy, discussion leader.

W. Fenical, "Chemical ecology of Marine Natural Products."

K. Nakanishi, "Studies with tunicate blood."

R. Jacobs, discussion leader.

E. Dennis, "Phospholipases: Activation and inhibition by monoalide and other compounds."

## 1 March

F. Schmitz, discussion leader.

M. Tius, "Synthesis of marine furanocembrenoids."

A. Smith, III, "Total synthesis of Marine Natural Products."

K. Nakanishi, discussion leader.

Y. Ohizumi, "Pharmacological studies of Marine Natural Products."

## 2 March

P. Scheuer, discussion leader.

D. Uemura, "Chemistry of anti-cachexia substances from a marine animal. Toxic substances from Okinawan Ciguatera fishes."

T. Yasumoto, "Maitotoxin and other polyether dinoflagellate toxins."

Y. Shimizu, discussion leader.

H. Fujiki, "Tumor promoters and anti-tumor promoters from marine sources."

## 3 March

R. Andersen, discussion leader.

V. Paul, "Chemical ecology on the coral reefs of Guam."

M. Garson, "Biosynthesis of Marine Natural Products."

W. Fenical, discussion leader.

C. Peter Wolk, "Anabaena: The development of its genetics and the genetics of its development."

## 4 March

K. Rinehart, discussion leader.

O. McConnell, "Bioactive compounds from marine organisms."

M. Munroe, "Antiviral and antitumor compounds from New Zealand marine invertebrates."

## Metals in Biology

### Sheraton Hotel, Ventura

B. M. Hoffman, chairman; P. Aisen, vice chairman

## 25 January

L. E. Mortenson, discussion leader.

S. P. J. Albracht, "Properties of nickel in hydrogenase and methyl-coenzyme-M-reductase."

R. R. Eady, "Vanadium nitrogenase of *A. chroococcum*."

B. Hales, "Metal clusters in vanadium nitrogenase."

D. N. Coucouvannis, "Attempts towards the synthesis of analogues to the [Fe, Mo, S] site in nitrogenase."

I. Bertini, discussion leader.

J. E. Coleman, "Zn domains in DNA-binding proteins."

J. M. Berg, "Metal-binding domains in TFIIIA and related proteins."

## 26 January

E. C. Theil, discussion leader.

C. T. Walsh, "Molecular bases of bacterial resistance to mercurials."

E. T. Kaiser, "Studies on the active site of alkaline phosphatase by site-directed mutagenesis."

A. G. Mauk, "Function and structure of cytochrome *c* and cytochrome *c* peroxidase mutants."

J. Kraut, "Cytochrome *c* peroxidase: Search for the lost radical."

T. Poulos, discussion leader.

S. G. Sligar, "Genetic engineering of metalloproteins: Myoglobin, cytochromes *b<sub>5</sub>* and P450."

S. Forsen, "Protein engineering and biophysical studies of an EF-hand  $\text{Ca}^{2+}$  binding protein: Bovine calbindin 9k."

## 27 January

T. G. Spiro, discussion leader.

P. G. Wolynes, "Theoretical challenges from biomolecular reactions."

R. H. Austin, "Protein dynamics: Gels, glasses, and all that."

R. Elber, "Calculations of reaction paths in proteins."

M. F. Perutz, "The structures of intermediates in the reaction of hemoglobin with oxygen, and the allosteric mechanism."

A. Robbins, discussion leader.

W. A. Eaton, "Time-resolved optical spectroscopy and dynamics of structural changes in hemoglobin."

## 28 January

E. A. Deutsch, discussion leader.

P. J. Sadler, "Inorganic pharmacology: The search for new inorganic drugs."

A. Davison, "Technetium chemistry and organ imaging."

C. F. Meares, "Metal chelates and monoclonal antibodies."

S. J. Lippard, "Site-specifically platinated DNA."

B. M. Hoffman, discussion leader.

M. F. Perutz, "How molecular biology started."

## 29 January

B. A. Averill, discussion leader.

D. C. Rees, "Crystallographic studies of the nitrogenase Fe protein."

W. H. Orme-Johnson, "Metal-sulfur clusters in nitrogenase."

E. Munck, "Double-exchange and novel [Fe-S] clusters."

## Organic Thin Films

### Casa Sirena Hotel, Oxnard

S. Garoff, chairman; J. Israelachvili, vice chairman

## 15 February

J. D. Swalen, discussion leader.

J. K. Blasie, "Structural studies of lipid-protein interactions in thick and ultrathin multilayers."

R. H. Tredgold, "Ultrathin films of monomeric and polymeric amphiphiles with reference to the Langmuir-Blodgett technique."

G. M. Whitesides, "Self-assembled organic monolayer films."

R. S. Pindak, discussion leader.

H. M. McConnell, "Superstructures and superstates in two dimensions."

D. R. Nelson, "Hexatic phases of matter."

P. S. Pershan, "Effects of surfaces and finite thickness on liquid crystal structures."

## 16 February

J. B. Lando, discussion leader.

J. F. Rabolt, "Dynamics of polymerization in oriented molecular assemblies."

J. M. Schnur, "Self-organized lipid tubules: Fabrication, structure, and characterization."

E. L. Thomas, "Area minimizing surfaces in ordered microstructures of phase separated block copolymers."

L. A. Turkevich, discussion leader.

H. Mohwald, "Microstructure of amphiphile monolayers studied by x-ray, electron diffraction and fluorescence microscopy."

M. Seul, "Molecular ordering in thin lyotropic films."

## 17 February

D. L. Allara, discussion leader.

C. B. Duke, "Localized states in polymers."

M. Majda, "Dynamics of lateral charge transport in organized bilayers of electroactive amphiphiles."

R. W. Murray, "Electron self-exchange transport in thin localized state films."

C. P. Bean, discussion leader.

W. L. Hubbell, "Ion transport through lipid bilayers."

M. Watanabe, "Ion transport in polymer thin films."

## 18 February

H. M. Princen, discussion leader.

H. K. Christenson, "Interactions between hydrophobic monolayer surfaces in aqueous solution."

R. G. Nuzzo, "Studies of microscopic wetting: Adsorption on well-defined organic surfaces."

D. Tabor, "Shearing of thin organic lubricant films: Speculative molecular models."

P. Dutta, discussion leader.

S. Granick, "Monolayer, multilayers, and wetting films of polymers."

P. Somasundaran, "Microstructure of surfactant and polymer layers on solids."

D. Wasan, "Multilayer structuring phenomena in thin liquid films."

## 19 February

S. T. Kowall, discussion leader.

J. D. Margerum, "Liquid crystal displays and polymer dispersed liquid crystal films."

R. F. Pease, "Prospects and requirements for ultrathin lithography films."

M. S. Wrighton, "Surface chemistry of microfabricated structures: Molecular-based electronic devices."

Poster sessions will be held. Those interested in presenting posters should indicate a proposed title on their applications.

## Chemistry and Biology of Peptides

### Sheraton Hotel, Ventura

J. M. Stewart, chairman; F. E. Bloom, vice chairman

## 8 February

Protein engineering: B. Erickson, discussion leader.

G. D. Rose, "Engineering concepts from natural proteins."

P. Schultz, "Engineering biological catalysts."

J. A. Wells, "Engineering enzyme specificity."

Peptide response regulation: E. Costa, discussion leader.

R. J. Miller, "Peptide signal transduction."

T. Curran, "Modification of gene expression."

J. Taylor, "Physical-chemical characteristics of peptides."

## 9 February

Control of ingestive behavior: E. M. Stricker, discussion leader.

J. Gibbs, "Peptides and control of meal size."

A. N. Epstein, "Hormonal organization of salt appetite."

D. J. Ramsay, "Neurohumoral inputs to thirst."

Methods for peptide structure analysis: V. J. Hruby, discussion leader.

G. Wagner, "NMR: Solution structure of metallothionein."

R. W. Williams, "Raman spectroscopy in protein engineering."

## 10 February

Advances in peptide synthesis: B. Merrifield, discussion leader.

D. Yamashiro, "Thiocarboxyl fragment coupling."

S. Sakakibara, "Selective formation of disulfide bonds."

S. S. Isied, "Cobalt protection in peptide synthesis."

Peptides and pain processing: T. L. Yaksh, discussion leader.

J. Levine, "Inflammation and arthritic pain."

A. Light, "Dorsal horn pain transmission."

G. Wilcox, "Spinal peptide systems."

An application blank for attendance at the Gordon Research Conferences may be found on page 218.

## 11 February

Peptides in gut and pancreas regulation: R. Hakanson, discussion leader.  
J. J. Holst, "Peptidergic regulation of pancreas."

M. Costa, "Neuronal circuits in the gut: chemical coding."

G. Makhlof, "Peptidergic motor and secretory control."

Peptide-macromolecule interactions: W. F. DeGrado, discussion leader.

P. Dervan, "Peptide-DNA interactions."

E. Friere, "Peptide-lipid interactions."

## 12 February

Peptide mediators of cytotoxicity: A. Cerami, discussion leader.

C. A. Dinarello, "IL-1 and TNF synergistic toxicity."

M. A. Palladino, "Interferon and TNF synergistic toxicity."

J. D.-E. Young, "Perforins."

## Photoconductivity and Related Phenomena

### Sheraton Hotel, Ventura

R. C. Hughes, chairman; M. Pope, vice chairman

## 22 February

M. Pope, discussion leader.

G. Kepler, "Electronic transport in polysilanes."

G. Wilson, "Physics of photoresists."

M. Rice, "Electronic states of polysilanes."

H. Bassler, discussion leader.

D. Moses, "Carrier photogeneration and transport mechanisms as revealed by studies of fast transient photoconductivity."

Z. Soos, "Low energy excited states of conjugated polymers."

## 23 February

S. Kurtz, discussion leader.

D. Burland, "Photoconductivity in polyvinylcarbazole—a perfect example of dispersive transport."

D. Haarer, "Dispersive versus non-dispersive photocurrents in polymeric photoconductors."

Z. Popovic, "Photocarrier generation mechanisms in perylene-type photoconductors."

R. Young, discussion leader.

J. R. Miller, "The chemical physics that controls electron transfer between a pair of molecules."

S. Boxer, "Charge separation and recombination on photosynthetic reaction centers."

## 24 February

E. Maruyama, discussion leader.

F. Capasso, "Photocarrier transport in superlattices: New tunneling, avalanche and storage phenomena in quantum wells."

I. Shimizu, "Photoconductive properties of multilayered materials."

T. Tiedje, "Photoconductivity in Si/Ge multilayers."

C. Braun, discussion leader.

A. Bocarsly, "Interfacial microstructure as a controlling factor in photo-

induced charge transfer at the derivitized N-CdS/aqueous interface."

A. Heller, "Biosensors using electron transport in coated electrodes."

## 25 February

L. Schein, discussion leader.

E. Silinsh, "Photogeneration mechanisms in organic materials."

M. Samoc, "Photogeneration of charge carriers in donor-acceptor systems."

J. Perlstein, "Geminate recombination mechanisms."

H. Scher, discussion leader.

J. Klafter, "Nonexponential time dependencies in recombination kinetics."

## 26 February

R. Hughes, discussion leader.

B. McLean, "Photocarrier generation and transport in SiO<sub>2</sub>."

N. Haegel, "Transient phenomena and space charge effects in extrinsic semiconductor photoconductors: In theory and in practice."

## Polymers

### Sheraton Hotel, Ventura

M. Tirrell, chairman; E. A. DiMarzio, vice chairman

## 4 January

T. J. McCarthy, discussion leader.

G. Wegner, "Ultrathin layers of polymers with molecular control over structure and performance."

J. Sagiv, "Monolayer techniques in studies of interactions at well-defined organic surfaces."

C. K. Ober, discussion leader.

S. I. Stupp, "The ordering of liquid crystal polymers by surfaces and fields."

## 5 January

D. A. Tirrell, discussion leader.

G. M. Whitesides, "Organic surface chemistry: Functionalized organic polymers and self-assembled monolayers."

J. F. Rabolt, discussion leader.

J. P. Rabe, "Scanning tunneling microscopy on organic materials."

S. Granick, discussion leader.

R. Horn, "Structure and viscosity of very thin polymer films."

G. Hadzioannou, "Viscoelastic properties of thin film liquid polymers confined between solid surfaces."

## 6 January

C. W. Frank, discussion leader.

A. P. Gast, "Adsorption of amphiphilic copolymers: Block copolymers and end-tagged chains."

M. A. Winnik, "Morphology, flocculation and film formation of sterically stabilized colloidal dispersions."

D. S. Pearson, discussion leader.

H. Yu, "Polymeric monolayers probed by surface light scattering."

J. Klein, "Mutual diffusion in compatible polymer blends."

## 7 January

G. H. Fredrickson, discussion leader.

K. Kawasaki, "Morphology of polymer blends and block copolymers with emphasis on dynamics."

F. S. Bates, discussion leader.

T. P. Russell, "Statics and dynamics of homo- and block-copolymer films."

J. D. Hoffman, discussion leader.

H. D. Keith, "Recent developments in the study of spherulitic morphology."

## 8 January

E. A. DiMarzio, discussion leader.

S. J. Organ, "Chain folding and unfolding in ultra-long *n*-alkanes crystallized from solution."

Y. Rabin, "Viscosity of polyelectrolyte solutions."

## Prolactin

### Casa Sirena Hotel, Oxnard

R. Weiner, chairman; F. Talamantes, vice chairman

## 8 February

J. D. Vincent, discussion leader.

J. Barker, "Physiological properties of lactotrophs."

T. Martin, "Roles of phospholipase C in stimulus-secretion coupling in GH<sub>3</sub> cells."

L. Canonico, "Dopamine and the inhibition of prolactin: Involvement of multiple intracellular signals."

R. MacLeod, discussion leader.

G. Martinez de la Escalera, "Dopamine removal: An important signal in prolactin regulation."

A. Enjalbert, "Transduction mechanisms of neurohormone receptors in anterior pituitary."

## 9 February

M. Freeman, discussion leader.

N. Ben-Jonathan, "Characterization of prolactin-releasing factor from the posterior pituitary."

W. Samson, "Oxytocin: Comparison to and interaction with other prolactin releasing factors."

R. Lechan, "Role of VIP in prolactin."

C. Nicoll, discussion leader.

P. Colosi, "Structural features of mouse placental lactogens."

C. Clapp, "Functional significance of 16K prolactin."

## 10 February

P. Dannies, discussion leader.

D. Pfaff, "Prolactin in brain: Possible behavioral consequences."

R. Maurer, "Analysis of estrogen-responsive DNA elements of the prolactin gene."

M. Rosenfeld, "Developmental and homeostatic regulatory mechanisms in prolactin gene regulation."

J. Clemens, discussion leader.

P. Kelly, "Prolactin receptor structure and function."

S. Frawley, "Isolation and physiologic role of liver lactogenic factor."

## 11 February

H. Bern, discussion leader.

B. Delidow, "Evidence for hepatic mediation of prolactins actions in amphibian larvae."

T. Hirano, "Fish prolactins and their function."

N. Horseman, "Prolactin-inducible genes of the pigeon crop sac."

C. Kordon, discussion leader.

C. Denef, "Paracrine regulation of prolactin release via angiotensin II and other intercellular messengers."

J. Porter, "Hormonal regulation of tyrosine hydroxylase in tuberoinfundibular neurons."

## 12 February

M. Thorner, discussion leader.

L. Shepel, "Relationship of oncogene structure to the genetics of estrogen induced pituitary tumors."

J. Schechter, "Vascular changes associated with prolactin tumor formation."

D. Larson, "Role of prolactin in the immune response."

## Protons and Membrane Reactions

### Sheraton Hotel, Ventura

D. W. Deamer, chairman; J. Lanyi, vice chairman

## 1 February

Proton conduction processes: D. Cafiso, discussion leader.

J. Nagle, "Proton conduction in bilayers and biomembranes."

H. Gutman, "Role of bound water in proton conduction."

S. McLaughlin, "Uncouplers and proton transport mechanisms."

Principles of proton conduction: J. Nagle, discussion leader.

P. Devlin, "Protons and Bjerrum defects in ice and ice-like substances."

S. Scheiner, "Principles of intermolecular proton transfer."

## 2 February

Electrical fields and membrane function: A. Parsegian, discussion leader.

P. Graber, "Electric field driven reactions of the thylakoid ATP synthase."

T. Tsong, "Transduction of free energy from electric fields by membrane ATPases."

Proteins and proton conduction: L. Packer, discussion leader.

W. Junge, "Proton conduction in thylakoid membranes."

R. Simoni, "Proton conduction in the F<sub>o</sub> subunit."

## 3 February

Protons and photons: Bacteriorhodopsin: J. Lanyi, discussion leader.

D. Oesterheld, "Molecular biology of halorhodopsin."

K. Rothschild, "FTIR studies of purple membrane: Toward a molecular goal."

Protons and photons: Reaction centers: A. R. Crofts, discussion leader.

K. Schulten, "Molecular dynamic calculations of *R. viridis* reaction centers."

C. Wraight, "Proton binding in reaction centers."

## 4 February

Protons and electrons: Redox systems: R. Capaldi, discussion leader.

M. Brunori, "Cytochrome *c* oxidase."

B. L. Trumpower, "Proton translocation mechanism in cytochrome *b-c<sub>1</sub>* complex."

Proton coupled transport systems: F. Harold, discussion leader.

C. Slayman, "Proton-potassium symport in *Neurospora*."

S. Grinstein, "Proton exchange and control of intracellular pH."

## 5 February

Proton ATPases in membrane transport: A. Scarpa, discussion leader.

G. Sachs, "Potassium ATPases of gastric mucosa."

M. Forgac, "Proton ATPases of coated vesicles."

## Sensory Transduction in Microorganisms

### Casa Sirena Hotel, Oxnard

J. L. Spudich, chairman; P. N. Devreotes, vice chairman

## 25 January

Receptors I—bacterial chemotaxis: J. Adler, discussion leader.

M. Simon, "Action at the *Escherichia coli* membrane/cytoplasm interface."

J. S. Parkinson, "Structure/function analysis of bacterial receptor/transducers."

G. Hazelbauer, "Investigating the sites of covalent modification in bacterial transducers."

Signal processing I—bacterial chemotaxis: M. Eisenbach, discussion leader.

D. E. Koshland, Jr., "Information processing in bacterial sensing."

H. C. Berg, "Coupling of the receptors to the bacterial flagellar motor."

## 26 January

Receptors II—retinal-linked proteins: R. Bogomolni, discussion leader.

W. Stoeckenius, "Sensory rhodopsins of halobacteria."

Y. Kobatake, "Phototaxis and the second sensory pigment in *Halobacterium halobium*."

P. Hargrave, "Structure and function of visual pigments."

Receptors III—chemoattractants and hormones: P. N. Devreotes, discussion leader.

J. Thorne, "The cell surface receptor for the peptide mating pheromone,  $\alpha$ -factor, in the yeast *S. cerevisiae*."

D. Garbers, "Chemoattractant receptors in sea urchin sperm."

## 27 January

Signal processing II—sensory regulation of gene expression: E. Schaeffer, discussion leader.

A. Grossman, "Light-regulated expression of phycobilisome components."

D. Kaiser, "Regulation of social motility in *Myxococcus*."

R. Firtel, "Cell surface receptor regulation of gene expression in *Dictyostelium*."

M. Wigler, "Signal transduction and growth control."

Signal processing III—eukaryotic chemotaxis and G-proteins: P. Van Haastert, discussion leader.

P. Van Haastert, "Signal transduction pathways in *Dictyostelium*."

Y. Kaziro, "GTP-binding proteins involved in yeast and mammalian cells."

## 28 January

Motor and response I—pseudopods: S. Zigmond, discussion leader.

J. A. Spudich, "Molecular biological approaches to cell migration in *Dictyostelium*."

G. Gerisch, "Chemotaxis mutants of *Dictyostelium*."

J. Condeelis, "Regulation of pseudopod extension during amoeboid chemotaxis."

Motor and response II—bacteria flagella: Y. Imae, discussion leader.

R. Macnab, "Structure and assembly of the bacterial flagellar motor."

S. Khan, "Structure and energetics of the *Escherichia coli* flagellar motor."

L. Shapiro, "The *Caulobacter* flagellar motor and the regulation of its biogenesis."

J. Armitage, "Photosensory control and activation of the *Rhodospirillum rubrum* flagellar motor."

## 29 January

Motor and response III—cilia and eukaryotic flagella: D. Nelson, discussion leader.

C. Kung, "Ion channels of *Paramecium*, yeast, and *Escherichia coli*."

P. Satir, "Dynein arm activation in protozoan cilia."

U. Goodenough, "Cyclic AMP functions as a primary sexual signal in *Chlamydomonas reinhardtii*."

## Superconducting Films

### Casa Sirena Hotel, Oxnard

S. A. Wolf, chairman; D. U. Gubser, vice chairman

## 11 January

R. A. Hein, discussion leader.

M. Suzuki, "Thin film superconductivity at NTT."

A. Goldman, "Macroscopic quantum phenomena in ultrathin films."

J. Clarke, "Macroscopic quantum tunneling."

D. Ginsberg, discussion leader.

U. Chowdhry, "Synthesis and processing of HTS films."

B. G. Beyley, "Thin-film supercon-

ductivity at Bellcore."

## 12 January

I. Schuller, discussion leader.

G. Deutscher, "Superconducting interfaces."

A. Kleinsasser, "Superconducting semiconducting layers."

Y. Bruynseraede, "Superconducting multilayers."

A. Braginsky, discussion leader.

R. Buhrman, "Growth and processing of HTS films."

L. Toth, "Processing and characterization of HTS films."

## 13 January

C. Uher, discussion leader.

V. Kresin, "Theoretical overview."

M. Beasley, "Properties of HTS films."

K. Wasa, "Sputtered films of Er Ba CuO."

D. Tanner, discussion leader.

K. Gray, "Tunneling into superconducting films."

P. Gammel, "Flux lattice melting in InO<sub>y</sub> films."

## 14 January

M. Nisenoff, discussion leader.

D. Bedard, "Applications overview."

R. Koch, "HTS films and SQUIDS."

C. Vittoria, "Microwave applications."

K. Rhyne, discussion leader.

M. Melich, "Scientific breakthroughs—Do they pay their way? When?"

## 15 January

D. Dustin, discussion leader.

R. Kwo, "HTS film preparation."

M. Nastasi, "Material science and properties of HTS."

D. Finnemore, "Twin plane effects in HTS."

# GORDON RESEARCH CONFERENCES

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