

# Gordon Research Conferences

## ALEXANDER M. CRUICKSHANK

The Winter Gordon Research Conferences will be held 2 January to 3 March 1989 at the Doubletree Hotel (telephone: 805-643-6000), 2055 Harbor Boulevard, Ventura, California, and 2 January to 24 February 1989 at the Casa Sirena Marina Hotel (telephone: 805-985-6311), 3605 Peninsula Road, Oxnard, California.

Requests for applications to the Conferences, or for additional information, should be addressed to: Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, Gordon Research Center, University of Rhode Island, RI 02881-0801. Telephone: 401-783-4011 or 401-783-3372.

### Agricultural Sciences: New Frontiers

**Casa Sirena Marina Hotel**  
J. J. Menn, chairman; W. E. Marshall, vice chairman

#### 16-20 January

J. J. Menn, Introductory remarks  
Phytochrome regulation of plant growth: P. Quail, discussion leader  
W. Briggs, "Photobiology of gene expression."  
E. Tobin, "Phytochrome-regulated gene expression."  
J. Silverthorne, "Phytochrome regulation of gene expression in pines."  
C. Lagaris, "Structure-function studies on phytochrome."  
P. Quail, "Phytochrome and the expression of its genes."  
Advances in pesticide delivery technology: J. N. Seiber, discussion leader  
J. R. Plimmer, "Controlled release of bioactive materials."  
D. K. Giles, "Defining the target for pesticide delivery."  
E. Law, "Basic phenomena active in electrostatic crop charge droplets."  
S. Maeda, "Engineered baculoviruses as selective delivery systems for pesticides."  
Design of enzyme inhibitors: P. A. Bartlett and B. D. Hammock, discussion leaders  
J. Schloss, "Acetolactate synthase: Mechanism of action and mode of inhibition by various herbicides."  
M. Pirrung, "Inhibition of dihydroxy-acid dehydratase."  
D. Poulter, "Inhibitors of early steps

in the isoprenoid pathway."

Design of enzyme inhibitors: B. D. Hammock and P. A. Bartlett, discussion leaders

N. Amrhein, "The use of in vitro reconstituted amino acid biosynthetic pathways in the search for inhibitors."  
R. Abeles, "Inhibitors of proteolytic enzymes."

New biopesticides and biocidal concepts: A. L. Christy, discussion leader  
J. Cook, "Biological control of plant diseases."

G. Papavizas, "Biocontrol of soil-borne plant diseases—progress and problems."

P. Carlson, Inside<sup>(R)</sup>: A new technology for biological crop protection."

W. Rice, "Genetic engineering of the baculovirus H<sub>2</sub> NPV as a viral insecticide."

Mycoherbicides: A. L. Christy, discussion leader

J. Bannon, "Mycoherbicides—opportunities and problems."

D. Sands, "Mutational delimitation of mycoherbicides."

Advances in new management strategies for plant parasitic nematodes: R. Huettel, discussion leader

D. Kaplan, "Surface carbohydrates and their role in host-parasite recognition."

R. Hussey, "Biochemical interaction and nematode response."

D. Chitwood, "Sterols and disruption of bioregulation of nematodes."

V. Williamson, "Gene expression on and host-resistance in nematodes."

V. Morton, "Adaptations of new technology to nematology."

J. J. Menn, W. E. Marshall, discussion leaders

B. Ames, "Natural plant pesticides, man-made pesticides and cancer risk."

Protein trafficking, signal peptides, transfer peptides: G. Kishore, discussion leader

K. Keestra, "Chloroplast protein import."

N. H. Chua, "Mitochondrial protein import."

A. Matoo, "Signals for assembly and degradation of a chloroplast encoded protein."

M. Chrispeels, "Identification of a vacuolar targeting signal."

### Angiotensin: Central and Peripheral Mechanisms of Action

#### Casa Sirena Marina Hotel

M. I. Phillips, chairman; K. Catt, vice chairman

#### 20-24 February

V. Dzau, discussion leader

## 1989 Winter Schedule

	Doubletree Hotel	Casa Sirena Marina Hotel
2-6 January	Polymers	Temperature Stress in Plants
9-13 January	Composites	Quantitative Genetics
16-20 January	Electrochemistry	Agricultural Science
23-27 January	Metals in Biology	Mammalian DNA Repair
30 January-3 February	Metabolic Sequences, Organization of	Plant Herbivore Interaction
6-10 February	Oxygen Radicals in Biology	Fibronectin
13-17 February	Glycoproteins and Glycolipids	Kallikreins and Kinins
20-24 February	Polymers for Biomedical and Agricultural Application	Angiotensin
27 February-3 March	Superconductivity	

R. Pratt, "Vasoactive substances and gene expression in the vasculature."

S. Oparil, "Molecular regulation of angiotensin converting enzyme."

E. Clauser, "Regulation of human angiotensin gene."

D. Ganten, discussion leader

K. Lynch, "In situ hybridization of mRNA angiotensinogen in brain."

A. Perlman, "Angiotensinogen gene expression in developing CNS."

K. Catt, discussion leader

R. Soffer, "Angiotensin binding protein."

F. Mendelsohn, "Receptors of the renin-angiotensin system."

D. Felix, "Neurophysiology responses to enzymatic inhibitors of angiotensins."

M. Prantz, discussion leader

J. Saavedra, "Survey of angiotensin receptors in the CNS."

M. Raizada, "Angiotensin and insulin receptors in glia and neurons."

E. H. Blaine, discussion leader

J. V. Duncia, P. Wong, G. Moore, P. Bovy, "New specific nonpeptide angio-

tensin II receptor antagonists."

W. F. Ganong, discussion leader

C. Deschepper, "The renin angiotensin system in endocrine glands."

P. Corvol, "Renin-angiotensin system in pituitary."

M. Bumpus, discussion leader

C. M. Ferrario, "Novel pathways for the formulation of angiotensin peptides in the brain."

J. W. Harding, "Angiotensin metabolism and active metabolites."

A. Husain, "Extracellular generation of angiotensin II in adrenal glands."

M. I. Phillips, discussion leader

T. Goodfriend, "ANP and angiotensin interaction."

T. Inagami, "Vasoactive peptides in the vascular system."

H. Kleinert, discussion leader

K. Berecek, "Lifelong treatment of angiotensin converting enzyme inhibition."

J. de Forrest, "New classes of converting enzyme inhibitors."

T. Unger, "Molecular and functional analysis of brain-kidney interactions."

### IMPORTANT—PLEASE NOTE

FAX No. 401-783-7644; Bitnet Address: BCP101@URIMVS

#### Fixed Conference Fees—Winter 1989

Conferee (double occupancy)	\$435
(\$385 if postmarked 3 weeks prior to Conference)	
Conferee (single occupancy)	\$545
(\$495 if postmarked 3 weeks prior to Conference)	
Guest (double occupancy)	\$325
(\$275 if postmarked 3 weeks prior to Conference)	
Guest (single occupancy)	\$435
(\$385 if postmarked 3 weeks prior to Conference)	

1) Full fixed fee charged regardless of time conferee attends Conference.

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

3) Children must be at least 12 years of age to have accommodations (room and meals) at the Conference host site.

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

## Composites

### Doubletree Hotel

R. M. Ikeda, chairman; A. T. DiBenedetto, vice chairman

### 9-13 January

N. J. Johnston, discussion leader  
P. T. McGrail, "New thermoplastic matrices."

B. J. Swetlin, "Toughened resins."

L. J. Mathias, "New thermally activated curing reactions for matrix resins."

H. L. Brinson, discussion leader

L. Drzal, "Fiber/matrix interface properties."

M. R. Piggott, "Fiber/matrix interface properties and their effects on composite properties."

A. Yee, discussion leader

A. Lustiger, G. Newaz, "Morphology and mechanical response modeling of damage processes in PEEK composites."

D. R. Lefebvre, "Moisture diffusion and its effect on adhesion and durability prediction."

C. Heil, A. H. Cardon, "Creep in thermoplastic composites."

J. Walker, discussion leader

Contributed papers.

M. Narkis, discussion leader

J. G. Williams, "Mixed mode interlamina fracture."

J. A. Nairn, "The strain energy release rate of composite microcracking: A variational approach."

M. Shuart, "Compression after impact."

J. Halpin, discussion leader

S. S. Sternstein, "Micromechanical modeling of high-performance composites."

R. Badalian, "Nonlinear constitutive behavior of composite materials."

R. J. Farris, discussion leader

S. Wang, "Elevated temperature deformation and fracture of thermoplastic matrix composites."

G. Prilutski, "PBT molecular composites."

D. Yoon, "Polyimide molecular composites for microelectronics."

A. T. DiBenedetto, discussion leader

Contributed papers.

J. Mijovic, discussion leader

L. Nicolais, "Modeling of composite processing."

D. E. Kranbuehl, "Monitoring the curing process of fiber-reinforced composites using frequency dependent electromagnetic sensing techniques."

J. C. Seferis, "Processing PEEK composites."

## Electrochemistry

### Doubletree Hotel

P. N. Ross, Jr., chairman; M. Weaver, vice chairman

### 16-20 January

B. Miller, discussion leader

S. Feldberg, "Laser-induced interfacial temperature jump method for investigating fast heterogeneous phenomena."

R. Fawcett, "Double layer effects on the heats of activation of simple electron and ion transfer reactions."

P. Pershan, "X-ray specular reflection as a tool for the study of liquid surfaces."

G. Neilsen, "Structure of ions in aqueous solution from neutron and x-ray diffraction."

G. Richmond, discussion leader

R. McIntyre, "Inverse photoemission at the solid/liquid interface and the implications for electron transfer theory."

Y. R. Shen, "Optical studies of molecules of interfaces."

A. Hubbard, discussion leader

P. Thiel, "Adsorbate-induced reconstructions at metal surfaces: Mechanisms, reasons, ramifications."

N. Winograd, "Surface spectroscopy by energetic ion-solid interaction."

L. Faulkner, discussion leader

M. Toney, "In situ surface x-ray scattering measurements of monolayers adsorbed at solid-liquid interfaces."

A. Bard, "Scanning tunneling and electrochemical microscopy."

M. Weaver, discussion leader

Open session

J. McIntyre, discussion leader

J. Porter, "Interfacial electron tunneling."

D. Scherson, "Underpotential deposition of alkali metals from nonaqueous electrolyte."

H. White, "Phase detection microscopy of electrode interfaces."

M. Soriaga, "Surface coordination and organometallic chemistry of noble-metal electrocatalysts."

A. Nozik, "Photoelectrochemistry: A status report."

M. Cocivera, "Electrochemical preparation and study of thin-film semiconductors."

R. Murray, discussion leader

A. Heller, "Direct electrical communication between chemically modified redox enzymes and metal electrodes."

R. McCreery, "Relationships between microstructure and electron transfer activity of carbon electrode materials."

## Fibronectin and Related Molecules

### Casa Sirena Marina Hotel

D. Mosher, chairman; M. Pierschbacher, vice chairman

### 6-10 February

Fibronectin: Expression, structure, function: K. Yamada, discussion leader

Speakers: J. Schwartzbauer, J.-L. Guan, C.-S. Lai

Laminin: R. Timpl, discussion leader

Speakers: H. Kleinman, E. Engvall

Tenascin and thrombospondin: R. Chiquet-Ehrismann, discussion leader

Speakers: M. Bourdon, P. Bornstein, J. Lawler

Integrins: structure: R. Hynes, discussion leader

Speakers: M. Hemler, T. Springer

Integrins: Function: E. Ruoslahti, discussion leader

Speakers: M. Ginsberg, J. Masse-gue, S. Wright

Miscellaneous topics: M. Hook and J. McDonald, discussion leaders

Speakers to be chosen from poster sessions.

Developmental models of protein function: J.-P. Thiery, discussion leader

Speakers: E. Hedgecock, J. Fessler, M. Hoffmann, M. Wilcox

Protein evolution:

Speaker: R. Doolittle

Diagnostic and therapeutic strategies: A. Vaheri, discussion leader

Speakers: B. Coller, M. Pierschbacher, F. Grinnell

## Glycoproteins and Glycolipids

### Doubletree Hotel

C. B. Hirschberg, chairman; R. Kornfeld, vice chairman

### 13-17 February

Biosynthesis and processing of glycoproteins: R. Kornfeld, discussion leader

Speakers: G. Hart, J. Baenziger, W. Lennarz, W. Roberts

Cloning and expression of yeast and plant glycoproteins: R. Trimble, discussion leader

Speakers: P. W. Robbins, A. Herscovics, B. Tague

Intracellular organization and targeting of glycoproteins: P. Atkinson, discussion leader

Speakers: W. Balch, M. Krieger, J. Wang, R. Couso

Protein-carbohydrate recognition: K. Drickamer, discussion leader

Speakers: F. Quiocho, J. Carver

Glycolipids and glycoproteins during development and cancer: C. Sweeley, discussion leader

Speakers: Y. Nagai, J. Roth, J. W. Dennis, M. Saito

Bacterial cell wall glycoconjugates and their interaction with mammalian cell surfaces: N. Sharon, discussion leader

Speakers: F. Wieland, C. Raetz

Biological functions of glycosaminoglycans and glycolipids: J. Esko, discussion leader

Speakers: U. Lindahl, M. Schachner, C. Barnstable, V. Kolb-Bachofen

Glycosyltransferases: Their genes and expression in mammalian cells: R. Hill, discussion leader

Speaker: J. Paulson

Targeting and recycling of glycoproteins: M. Snider, discussion leader

Speakers: S. Kornfeld, C. Gabel

## Kallikreins and Kinins

### Casa Sirena Marina Hotel

A. Nasjletti, chairman; L. Greenbaum, vice chairman

### 13-17 February

E. Erdos, discussion leader

R. Richards, "The human renal kallikrein gene."

R. MacDonald, "Organization of the rat kallikrein gene family."

J. Roberts, "Pituitary kallikrein gene expression."

H. Margolius, discussion leader

A. Powers, "Prolactin processing by kallikrein."

T. Inagami, "Biology of atrial natriuretic peptides."

O. A. Carretero, discussion leader

A. Hassid, "Regulation of cytosolic calcium by kinins."

R. M. Burch, "Kinins, prostaglandins and polyphosphoinositides."

M. Peach, "cGMP-mediated mechanisms and kinin vascular actions."

J. Stewart, discussion leader

A. Morrison, "Regulation of phospholipid metabolism by kinins."

M. R. Vasco, "Substance P and pain production."

H. Moriya, discussion leader

L. Greenbaum, "T-kininogen in health and disease."

J. Bouhnik, "Hormonal regulation of kininogens."

H. Okamoto, "T-kininogen as an embryonic growth factor."

R. A. Skidgel, discussion leader

E. Erdos, "Distribution and function of neutral endopeptidase."

J. A. Nadel, "Neutral endopeptidase and tachykinins."

P. Ward, discussion leader

D. Regoli, "B<sub>1</sub> receptors and antagonists."

J. Stewart, "B<sub>2</sub> receptors and antagonists."

H. Gavras, "Cardiovascular effects of kinin antagonists."

A. Nasjletti, discussion leader

O. A. Carretero, "Regulation of renal function by kinins."

A. Cuthbert, "Kinins, neuropeptide Y and membrane transport."

L. Greenbaum, discussion leader

H. Margolius, "Kallikreins in hypertension."

D. Proud, "Kinins in inflammatory diseases of the airways."

R. Colman, "Interactions of plasma kallikrein and blood elements."

## Mammalian DNA Repair

### Casa Sirena Marina Hotel

A. E. Pegg, chairman; R. B. Setlow, vice chairman

### 23-27 January

DNA repair and adduct persistence in chemical carcinogenesis: J. A. Swenberg, discussion leader

Speakers: F. A. Beland, P. H. M. Lohman, R. Montesano

Repair of DNA damage caused by therapeutic agents: B. S. Strauss, discussion leader

Speakers: A. R. Eastman, K. W. Kohn

Heritable diseases involving defects in DNA repair: J. E. Cleaver, discussion leader

Speakers: D. L. Mitchell, C. A. Weber

Purification of repair proteins and isolation and expression of their genes: J. Laval, discussion leader

Speakers: M. E. Smulson, M. Sirover

Studies of DNA repair and mutagenesis using oligodeoxynucleotides with defined lesions: J. M. Essigmann, discussion leader

Speakers: G. Chu, A. P. Grollman, P. F. Swann

Conformational factors in DNA repair: B. Singer, discussion leader

Speakers: D. Grunberger, R. D. Wells

Fine structure analysis of DNA repair: P. C. Hanawalt, discussion leader

Speakers: L. H. F. Mullenders, D. A. Scicchitano, M. J. Smerdon

DNA polymerases and miscoding in mammalian cells: L. Loeb, discussion leader

Speakers: B. W. Glickman, S. H. Wilson

Approaches to understanding the physiological significance of DNA repair: R. J. Preston, discussion leader

Speakers: V. M. Maher, G. P. Margison, W. Morgan

## Organization of Metabolic Sequences

### Doubletree Hotel

G. R. Welch, chairman; C. Mathews, vice chairman

### 30 January-3 February

G. R. Welch, discussion leader

H. Westerhoff, "Free-energy transduction in organized systems."

H. Kacser, "Metabolic control analysis."

T. Keleti, "Protein-protein interactions and channeling."

K. Porter, discussion leader

J. Clegg, "Cell water and metabolic organization."

A. Mastro, "Experimental analysis of cytoplasmic properties."

H. Knull, discussion leader

P. Srere, "Organization of Krebs cycle enzymes."

H. Schulz, "Organization of fatty acid oxidation."

J. Churchich, "Dynamic interaction between mitochondrial enzymes."

D. Kell, discussion leader

M. Berry, "Thermokinetic control of metabolism in whole cells."

D. Kell, "Enzyme organization and energy transduction in bacteria."

S. Sligar, "Protein-protein interactions in electron transport."

R. Davis, discussion leader

R. Davis, "Enzyme organization in polyamine metabolism."

H. Paulus, "Enzyme organization in aspartate synthesis."

P. Hensley, "Enzyme organization in arginine synthesis."

M. E. Jones, discussion leader

D. Evans, "Multienzyme complexes in pyrimidine synthesis."

I. Toth, "Multienzyme complexes in folate metabolism."

P. veer Reddy, discussion leader

C. Mathews, "Organization of deoxyribonucleotide metabolism."

P. Reichard, "Interrelations between deoxyribonucleotide biosynthesis and DNA replication."

P. veer Reddy, "Organization of DNA

precursor synthetic enzymes in mammalian cells."

J. Clegg, discussion leader

L. B. Chen, "Structural rearrangements in the endoplasmic reticulum."

I. Brockhausen, "Glycoprotein synthesis and intracellular protein."

J. Corbin, "Cyclic AMP and cyclic GMP messenger systems."

C. Mathews, discussion leader

R. Berezney, "Structural aspects of DNA replication in the eukaryotic nucleus."

R. Nossal, "Protein-protein interactions in prokaryotic DNA replication."

## Metals in Biology

### Doubletree Hotel

P. Aisen, Chairman: L. Que, Jr., vice chairman

### 23-27 January

W. Orme-Johnson, discussion leader

T. O'Halloran, "Inorganic signal transduction by a DNA-binding heavy metal receptor."

M. Karin, "Regulation of metal binding protein gene expression in yeast and man."

R. Klausner, "Iron-dependent RNA regulatory developments."

K. Falchuk, "Zinc and gene expression."

D. Chasteen, discussion leader

C. Springer, "Sodium and potassium in biology:  $^{23}\text{Na}$  and  $^{39}\text{K}$  NMR studies of transmembrane transport and physical state."

L. Marzilli, "Zinc in nucleic acid nucleotide chemistry and biochemistry."

P. Saltman, discussion leader

J. Rosen, "Intracellular interactions between lead and calcium: An early and discrete expression of lead toxicity."

K. Ruehl, "Biochemical toxicity of inorganic and organic tin compounds."

B. Martin, "Biochemistry and toxicology of aluminum."

J. Gutteridge, "Iron and copper as biological pro-oxidants."

O. Anderson, discussion leader

C. Dismukes, "The role of manganese in photosynthetic water oxidation."

W. Rutherford, "The role of  $\text{Ca}^{2+}$  in the water oxidase of photosystem II."

G. Babcock, discussion leader

A. Messerschmidt, "High-resolution x-ray crystal structure of ascorbate oxidase from zucchini, a blue multi-copper oxidase: Polypeptide chain folding, copper sites, and mechanistic aspects."

J. Villafranca, "The metal ion sites and the mechanism of dopamine  $\beta$ -hydroxylase."

J. Fee, "Terminal oxidases of thermophilus."

K. Lerch, "Tyrosinase."

R. A. Scott, discussion leader

A. Butler, "Kinetic and mechanistic investigations of vanadium and non-heme iron bromoperoxidases."

R. Wever, "Structure and function of vanadium bromoperoxidases."

J. Sanders-Loehr, discussion leader

L. Que, Jr., "Uteroferrin and the pur-

ple acid phosphatases."

J. Lipscomb, "EPR and Mössbauer studies of a high specific activity methane monooxygenase from *Methylosinus trichosporium* OB3b."

K. Raymond, "The redox potential and release kinetics of iron bound to transferrin."

J. Peisach, discussion leader

H. Beinert, "About Science and Non-science."

B. Hoffman, discussion leader

J. Dawson, "Oxygen activation by heme-containing mono-oxygenases: Secondary amine mono-oxygenase and cytochrome P-450."

J. Groves, "Aliphatic hydroxylation: How does cytochrome P-450 control the stereo-selectivity of a free radical reaction?"

B. Averill, "The mechanism of microbial denitrification."

## Oxygen Radicals in Biology

### Doubletree Hotel

S. D. Aust, chairman; L. J. Marnett, vice chairman

### 6-10 February

D. Steinberg, discussion leader

H. Esterbauer, "Mechanisms of LDL oxidation in vitro."

M. Haberland, "Malondialdehyde modified LDL."

G. M. Chisholm, "Toxicity of oxidized LDL."

D. Steinberg, discussion leader

T. E. Carew, "Biological modification of LDL and atherosclerosis."

H. F. Hoff, "Structure and function of aldehyde modified LDL."

J. W. Eaton, discussion leader

C. Winterbourn, "Metal catalyzed Fenton reaction."

J. E. Repine, "Cardiopulmonary damage by oxygen radicals."

C. Babbs, "DMSO as a hydroxyl radical probe."

J. W. Eaton, discussion leader

H. Rosen, "Myeloperoxidase release of iron in bacterial killing."

J. W. Eaton, "Mechanism for hemo-protein catalyzed oxidations."

B. M. Babior, discussion leader

S. Parthasarathy, "Lipoxygenase and endothelial cell modification of LDL."

J. T. Curnutte, "Regulation of oxygen radical production by phagocytes."

B. M. Babior, discussion leader

P. R. Ortiz de Montellano, "Protein radical reactions in hemoproteins."

A. R. Brash, "Lipoxygenase catalyzed oxygenations."

R. L. Willson, discussion leader

J. F. Ward, "Comparing radiation and chemical-induced free radical damage."

I. Stratford, "Mechanisms of radiation sensitization."

K.-D. Asmus, "Reactions of radiolytically derived radicals."

S. D. Aust, discussion leader

E. R. Stadtman, "Protein oxidation and turnover."

L. J. Marnett, discussion leader

G. A. Reed, "Prostaglandin synthe-

tase linked cooxidations."

T. E. Eling, "Thiyl radical formation by peroxidases."

B. N. Ames, "Reactions of hydroperoxides in human plasma."

## Plant-Herbivore Interactions

### Casa Sirena Marina Hotel

M. M. Martin, chairman, P. W. Price, vice chairman

### 30 January-3 February

W. J. Mattson, discussion leader

P. P. Feeny, "Chemical defenses of plants: An historical perspective."

P. Coley, "Interspecific patterns of plant defense: The growth rate hypothesis."

R. G. Cates, "Variation, plant apparency, and carbon-nutrient balance: Implications for integrated studies."

T. C. R. White, "Passive defense—nutritional inadequacy: A usually unassailable barrier for young herbivores."

J. W. McClure, discussion leader

R. Hammerschmidt, "Responses of plants to pathogens."

J. P. Bryant, discussion leader

F. S. Chapin, "Plant responses to nutrient stress and implications for plant defense."

C. A. Ryan, "Role of oligosaccharides as signals to activate defensive genes in plants."

B. C. Campbell, "Matrix polysaccharides in host plant resistance to sucking insects."

D. E. Lincoln, "Carbon stress and allocation of resources to defense."

M. M. Martin, discussion leader

J. P. Fisher, "The continuing search for chemical insecticides."

F. Gould, discussion leader

J. M. Scriber, "Heterogeneity, heterozygosity, and heterosis: Genetics and phytochemical suitability of herbivores."

A. C. Waiss, "Intergeneric transfer of plant resistance to insects."

E. Stadler, "Insect- and plant-derived chemicals influencing oviposition."

J. Pasteels, "Sequestration of plant secondary compounds for defense in insects: When, why, and how?"

P. Barbosa, discussion leader

J. A. Pickett, "Plant-derived semiochemicals as insect feeding deterrents."

M. J. Wolin, discussion leader

C. T. Robbins, "Diet selection in grazing and browsing ruminants as influenced by tannins."

D. S. Seigler, "Chemical factors in diet selection by primates."

W. H. Fenical, "Chemical defenses of marine plants."

M. E. Hay, "The ecology of chemical defenses of marine plants."

P. W. Price, discussion leader

D. H. Janzen, "Anachronisms in caterpillars and plant chemistry."

R. Karban, discussion leader

K. Clay, "Mycotoxins from fungal symbionts of grasses: Acquired resistance to herbivores."

P. Baumann, "Genetic characteriza-

tin and evolutionary relationships of the pea aphid symbionts."

W. T. Starmer, "The specific and non-specific interactions of yeasts associated with *Drosophila* in decaying cactus tissue."

P. G. Waterman, "Do rapid wound-induced changes in secondary metabolites alter the susceptibility of leaves to pathogens?"

## Polymers

### Doubletree Hotel

E. A. DiMarzio, chairman; J. Rabolt, vice chairman

### 2-6 January

Crystallization: D. Bassett, session chairman

J. D. Hoffman, "Curved edges in chain-folded polymer systems."

E. Amis, "The use of dynamic light scattering to follow the initiation and growth of crystals."

Poster session: J. Rabolt, session chairman

D. Tirrell, "Genetically controlled synthesis of highly ordered polymeric materials."

Collapse transition: K. Binder, session chairman

B. Chu, "The use of light scattering to follow the collapse transition."

Muthukumar, "The coil-globule transition near a surface."

J. Douglas, "On the analogy between polymer adsorption and the collapse transition."

Gels: W. H. Stockmayer, session chairman

M. Rubinstein, "Scaling properties of gel forming systems."

J.-M. Guenet, "Thermoreversible gels."

Better expressions for the free energy: S. Edwards, session chairman

K. Freed, "Improving the Flory and Huggins approximations via exact expansion techniques."

D. Y. Yoon, "Lattice models of chain packing and ordering in bulk polymer systems."

The glass transition: R.-J. Roe, session chairman

R. Boyd, "Computer modeling of structural changes accompanying the glass transition."

J. Stevens, "Structural relaxation behavior in polymers via Brillouin scattering."

Membranes/surfaces/thin films: H. Yu, session chairman

T. Kajiyama, "Permselective control of organic thin film based on change of molecular aggregation structure induced by external energy."

H. McConnell, "Shape transitions in finite two-dimensional crystals."

Membranes/surfaces/thin films: J. Lando, session chairman

H. Ringsdorf, "Polymeric monolayers and liposomes as models of biomembrane processes."

Polymer blends: C. Han, session chairman

M. Olvera de la Cruz, "Concentration fluctuations in polymer blends."

R. Briber, "Phase separation in cross-linked polymer blends."

## Polymers for Biomedical and Agricultural Applications

### Doubletree Hotel

D. J. Casey, chairman; R. M. Ottenbrite, vice chairman

### 20-24 February

G. L. Loomis, discussion leader

W. H. Daly, "Peptide grafts on natural and synthetic polymers."

T. H. Barrows, "Bioabsorbable polyesteramides."

S. J. Huang, "Cross-linkable polyesters for composites."

R. M. Ottenbrite, discussion leader

E. Bell, "Fabrication and use of graft organs and test organs from biopolymers and specialized living cells."

I. V. Yannas, "Polymeric models of extracellular matrices: Study of nerve regeneration."

L. Rosati, discussion leader

C. G. Pitt, "Manipulation of the permeability and degradability of polymers."

D. J. Carlsson, "Photodegradation and photostabilization of polyolefins."

S. Shalaby, "Radiostabilization of bioabsorbable polymers."

A. Schindler, discussion leader

R. W. Lenz, "Bioresorbable polyesters produced by bacteria: Structure properties and medical applications."

H. R. Kricheldorf, "Polymerization mechanisms and copolymerization of lactides and lactones."

K. Himmelstein, discussion leader

J. Kopecek, "Soluble synthetic polymers as targetable drug carriers."

Y. Kato, "Targeting methotrexate by antitumor monoclonal antibodies: Problems and their solution."

J. M. Shaw, "Issues in the cell-specific delivery of lipoprotein-drug complexes."

P. Suszko, discussion leader

D. Cohn, "Novel biodegradable polymeric materials."

M. Alper, "Enzymatic synthesis of materials."

F. G. Hutchinson, discussion leader

V. Stoy, "Hydrogels with crystalline networks."

A. S. Hoffman, "Biocatalysts immobilized in reversible hydrogels."

N. B. Graham, "New developments in hydrogels for drug delivery."

S. Tocker, discussion leader

D. Lohmann, "Photoresponsive release systems for agricultural applications: An approach to site-specific pest control agents."

M. Vert, "Macromolecular microencapsulation: A new way to solubilize and deliver water-insoluble hydrophobic compounds."

R. Dunn, discussion leader

J. Heller, "Self regulated drug delivery systems."

M. Saffran, "Use of azoaromatic polymers in controlled release."

M. Sefton, "Microencapsulation of mammalian cells in polyacrylates."

## Quantitative Genetics and Biotechnology

### Casa Sirena Marina Hotel

E. J. Eisen, chairman; J. W. Dudley, vice chairman

### 9-13 January

F. D. Enfield, discussion leader

R. Lande, "Integrating molecular genetics with artificial selection."

M. Lynch, "Polygenic mutation."

K. Lamkey, "Effects of transposable elements on quantitative traits in maize."

B. Weir, discussion leader

B. Weir, "Molecular markers for quantitative traits."

N. Cowen, "Elucidating the genetic basis for heterosis using molecular markers."

J. Nienhuis, "Application of restriction fragment length polymorphism technology in plant breeding."

J. Dudley, discussion leader

C. Stuber, "Genetic basis of heterosis in maize."

O. Smith, "Developing an RFLP map in maize."

T. Helentjaris, "Laboratory analysis of RFLP's."

C. Sing, discussion leader

C. Sing, "The contribution of candidate genes to the explanation of the genetic variance of apolipoprotein, lipoprotein, and lipid phenotypes."

J. Taylor, "Regulatory elements of the apolipoprotein E gene."

S. Humphries, "RFLP's and beyond: Detection of variation at the apolipoprotein gene loci that contributes to determination of serum lipid levels."

E. J. Eisen, discussion leader

A. E. Freeman, "Mitochondrial differences in cattle and their association with quantitative traits."

D. Wallace, "Mitochondrial genes of women: Genetics, evolution and disease."

W. Brown, "Sequence changes and rearrangements in animal mitochondrial DNA."

E. Wernsman, discussion leader

E. Wernsman, "Double haploid methodology in tobacco."

P. S. Baenziger, "Criteria to evaluate doubled haploids for breeding cultivars."

T.-M. Choo, "Haploid quantitative genetics."

E. Earle, discussion leader

E. Earle, "Changes in mitochondrial DNA of maize grown in vitro."

R. Phillips, "Tissue culture induced quantitative genetic variation."

E. T. Bingham, "Somaclonal variation in quantitative traits of alfalfa."

C. Laurie, discussion leader

C. Laurie, "Use of P-element transformation to analyze quantitative traits in *Drosophila*."

C. Aquadro, "A molecular population genetic approach to the study of biological clock genes in *Drosophila*."

R. Petters, discussion leader

R. Petters, "Strategies and methodologies for the transfer of genes using retroviruses."

J. D. Murray, "Expression of transgenes affecting quantitative traits."

K. Ebert, "Phenotypic alterations in transgenics."

C. Smith, "On the use of transgenes in livestock production."

## Superconductivity

### Doubletree Hotel

A. W. Sleight, chairman

### 27 February-3 March

The following will speak:

D. Batlogg, R. J. Birgeneau, R. J. Cava, T. H. Geballe, D. M. Ginsberg, D. C. Johnston, J. D. Jorgensen, M. D. Maple, K. A. Muller, B. Raveau, D. J. Scalapino, A. M. Stacy, M. A. Subramanian, J. M. Tarascon, J. B. Torrance, Y. J. Uemura.

## Temperature Stress in Plants

### Casa Sirena Marina Hotel

C. J. Weiser, chairman; G. A. Thompson, Jr., vice chairman

### 2-6 January

Role of membranes in acclimation to low temperatures: G. A. Thompson, Jr., discussion leader

N. Huner, "Trans  $\Delta 11$  hexadecanoic acid, a biological marker for tolerance in cereals."

D. V. Lynch, M. Uemura, "The involvement of lipids in modulating plasma membrane cryostability."

G. Oquist, "Environmental stress and photosynthesis."

Biology of the cell surface and temperature stress responses: S. Wallner, discussion leader

A. Staehelin, "Biology of responsive cell surfaces in plants."

J. Carter, B. Olien, "Microtubule responses to cold stress and cell surface polysaccharides and freezing inhibition."

Cryobiology: M. J. Burke, discussion leader

J. G. Baust, "Low temperature stress in insects."

C. L. Hue, "Ice and protein interactions in Antarctic fish."

to be announced, "Temperature dependence of protein structure."

Temperature responses of pollen and seeds: J. H. Crowe, discussion leader

W. W. Thomson, "Imbibitional leakage in seeds: Is  $H_{2O}$  phase involved?"

F. A. Hoekstra, "Temperature effects on imbibitional leakage: A new interpretation of an old phenomenon."

High temperature physiological and whole plant responses: J. J. Burke, discussion leader

P. J. Pinter, Jr., "Plant temperature: An expression of dynamic environmental interaction."

J. R. Mahan, "The thermal dependence of enzyme functions as an indicator of the limits of thermal stress."

A. Blum, "The temperature response of leaf gas exchange as possible explanation of genotypic excellence in plant production."

The functions of heat shock proteins: D. T. H. Ho, discussion leader

E. Vierling, "Biological roles of HSPs in higher plants."

L. Nover, "The nature and function of

heat shock granules."  
Biological ice nucleation: S. Lindow,  
discussion leader  
P. K. Wobler, "Properties of bacterial

ice nucleating proteins."  
G. J. Warren, "Properties of bacterial  
ice nucleating genes."  
T. Keift, "Ice nucleation activity in  
lichens."

L. H. Fuchigami, discussion moderator  
Reports by discussion subgroups.  
Biotechnology and molecular genet-  
ics of temperature stresses: T. C.  
Hall, discussion leader

J. Winter, "Biotechnology and trans-  
formation with heat shock genes."  
C. Somerville, "Arabidopsis—genetic  
manipulation to study cold stress re-  
sponse."

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Conference on \_\_\_\_\_ Date: \_\_\_\_\_  
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Name: (Please Print) \_\_\_\_\_ Conference  
Organization: \_\_\_\_\_ Location: \_\_\_\_\_  
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Guest (double occupancy)	\$325.00
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Guest (single occupancy)	\$435.00
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