

Gordon Research Conferences

ALEXANDER M. CRUICKSHANK

The Gordon Research Conferences for the summer of 1987 will be held in New Hampshire and Rhode Island.

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, Kingston, Rhode Island 02881-0801. Telephone: 401-783-4011 or 401-783-3372.

Mail for the office of the Director from 15 June to 28 August 1987 should be addressed to: Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, Colby-Sawyer College, New London, New Hampshire 03257.

Fixed Conference Fees—1987	
<i>New Hampshire</i>	
Conferee (double occupancy)	\$310
Nonresident Conferee (meals, no room)	270
Guest (rooms, meals)	220
<i>Rhode Island</i>	
Conferee (double occupancy)	\$325
Nonresident Conferee (meals, no room)	270
Guest (rooms, meals)	235

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

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

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

3) Nonresident conferees are expected to eat all meals in the Conference Dining Room and, therefore, the fixed fee for nonresidents includes the full meal charge.

4) Offsite accommodations (hotel, motel, and so forth) near the host schools are available; however, early reservations are recommended. The office will send on request a list of outside housing for your information and use.

Science of Adhesion

New Hampton School

James Koutsky, chairman; James Wightman, vice chairman

17 August

L. Peebles, discussion leader
C. Thompson, "Elastomer to metal bonds—chemistry and failure mechanisms."
D. Dillard, "Moisture ingress in elastomer to metal bonds."

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

R. Yates, discussion leader

J. Boerio, "Spectroscopic characterization of polymer interphases."

18 August

S. Johnson, discussion leader
H. Markus, "Interfaces in metal-matrix composites."
B. Schwartz, "The bonding of ceramics and metals to ceramics in multi-layer modules."
G. Davis, discussion leader
T. Tombrello, "Enhancement of adhesion by MEV ion bombardment."

19 August

A. Gent, discussion leader
D. E. Packham, "Substrate pretreatment and adhesive properties: synergism in polymer-metal adhesion."
H. Clearfield, "Development of high temperature stable adherends."
L. Penn, discussion leader
J. Rowe, "EXAFS studies of surface bonding."

20 August

R. Draughn, discussion leader
J. Robinson, "Mechanism and structure activity relationships for muco proteins."
M. Fletcher, "Bacterial adhesion to solid surfaces."
L. Sharpe, discussion leader
L. Jelinski, "Innovation in research: Neural networks and other matters of biophysics."

21 August

K. Liechti, discussion leader
K. Kim, "Analysis of peel tests for thin film adhesion—effects of plasticity, viscoelasticity, viscoplasticity and residual stresses."
Y. Bar-Cohen, "Ultrasonic NDE of bonded structures."

Aerobiology

Colby-Sawyer College (S)

Stephen A. Hall, chairman; Ted B. Martonen, vice chairman

10 August

H. Burge, discussion leader
M. Chatigny, "Optimal use of traditional samplers."
D. White, "GC mass spectroscopy analysis of microbial populations."
K. Donham, "Total microbial counts by filtration and fluorescence staining."
H. Burge, discussion leader
J. Feeley, "Experimental design in building related epidemic studies."
W. R. Solomon, "Optimizing design to enable health assessment."

11 August

C. Upper, discussion leader
C. Upper, "Potential impact on cloud

processes by large-scale removal of ice nucleating bacteria."

R. Schnell, "Potential activity of ice nucleating bacteria on precipitation formation."

S. Hirano, "Population ecology of ice nucleating bacteria."

G. L. Batchelder, discussion leader
J. E. Farnham, "Pollen and mold seasons in New England."

G. L. Batchelder, "Pre-season predictions of pollen production in the United States by ragweed and four spring-blooming tree genera."

12 August

M. J. Utell, discussion leader
R. O. McClellan, "Assessing the risks of airborne pollutants."
C. P. Yu, "Models of particle deposition, retention, and clearance in airways."
P. A. Valberg, "Techniques for assessing deposition and fate of aerosols in the lung."
M. J. Utell, discussion leader
R. B. Schlesinger, "Effects of inhaled particles on pulmonary cellular defense mechanisms."
M. J. Utell, "Assessing the response of airways to inhaled pollutants: Controlled clinical studies."

13 August

V. Knight, discussion leader
T. Martonen, "Behavior of small particulates in the human respiratory tract: Effects of aerosol hygroscopicity and subject age."
M. T. Newhouse, "Role of aerosols in etiology and management of asthma."
V. Knight, "Antiviral therapy with small particle aerosol."
V. Knight, discussion leader
M. B. Dolovich, "Aerosols in the diagnosis of pulmonary disorders."
B. E. Gilbert, "Pharmacokinetics of antiviral drugs administered in small particle aerosols."

14 August

J. O. Falkingham, III, discussion leader
R. H. Pierce, "Toxin aerosols of red tide."
J. O. Falkingham, III, "Aerosolization of mycobacteria from fresh waters."
J. M. Macher, "Microbiological changes in the indoor environment of an apartment building during the first year of occupancy."

Analytical Chemistry

New Hampton School

Bruce Chase, chairman; William Heineman, vice chairman

10 August

B. Chase, discussion leader
F. Lytle, "Two-photon spectroscopy of molecules in fluid solution."
D. Lubman, "Laser-induced ionization of biological compounds in supersonic beam mass spectroscopy."
M. Wirth, discussion leader
L. Carreira, "CARS, an analytical technique?"
T. Gustafson, "Time-resolved optical

characterization of thin film materials."

11 August

W. Heineman, discussion leader
J. Kirkland, "Recent developments in the high-resolution separation of very high molecular weight components."
T. Chester, "Supercritical fluid chromatography: Progress and applications."
E. Yeung, "Combining spectroscopy and chromatography in chemical analysis."
I. Krull, "Recently detected detection approaches in liquid chromatography."

12 August

B. Fateley, discussion leader
G. Richmond, "Probing the solid-liquid interface with non-linear optics."
H. Abruna, "X-rays as in situ probes of electrochemical interfaces."
G. Hieftje, discussion leader
S. Chiang, "Scanning tunneling microscopy of metals on semiconductors."
A. Wieckowski, "Application of nuclear properties in the analysis of electrode surfaces."

13 August

I. Levin, discussion leader
R. Salemme, "Applications of x-ray crystallography in protein engineering and rational drug design."
Speaker and subject to be announced.
L. Faulkner, discussion leader
R. Mathies, "Determination of retinal chromophore structure in rhodopsins with resonance Raman spectroscopy."
S. Carr, "Structural analysis of proteins by tandem mass spectrometry."

14 August

J. Robinson, discussion leader
A. Marshall, "Data reduction in Fourier transform spectrometry: Advantages and artifacts."
J. Bettridge, "Pattern recognition from different perspectives."

Analytical Pyrolysis

Holderness School

R. P. Lattimer, chairman; J. W. de Leeuw, vice chairman

6 July

S. A. Liebman, discussion leader
I. Ericsson, "Pyrolysis-gas chromatography: A powerful technique for identification of synthetic polymers."
D. O. Hummel, "Three decades of analytical spectroscopy of polymer pyrolyzates."
T. Szekely, discussion leader
R. S. Lehrle, "Individual activation energies for concurrent scission and end initiation of polymer depropagation, evaluated by Py-GC."
J. R. MacCallum, "Thermal decomposition of polymers: Theoretical and practical problems."

7 July

S. C. Israel, discussion leader
J. C. W. Chien, "Analytical pyrolysis

of polyolefins, polydienes, polyacetylenes and polyacetals, and their degradation mechanisms."

I. C. McNeill, "Pyrolysis studies of polymer systems based on methyl methacrylate."

M. A. Grayson, discussion leader

S. Tsuge, "Characterization of thermosetting polymers by pyrolysis-gas chromatography."

I. V. Bletsos and D. M. Hercules, "Time-of-flight secondary ion mass spectrometry of polymers."

8 July

G. Montaudo, discussion leader

M. M. O'Mara, "Combustibility of polymers."

T. Kashiwagi, "Polymer gasification process."

K. J. Voorhees, discussion leader

G. Camino, "Thermal degradation and fire retardant mechanisms of polymeric materials."

W. H. Starnes, Jr., "Poly(vinyl chloride) smoke suppression by metals salts: Current status."

9 July

K. Kawaoka, discussion leader

H. L. C. Meuzelaar, "Learning more from pyrolyzing less."

H.-R. Schulten, "Soft ionization mass spectrometry of technical and biological polymers."

R. Saferstein, discussion leader

C. G. Smith, "Industrial applications of analytical pyrolysis techniques."

T. O. Munson, "Applications of analytical pyrolysis to forensic samples."

10 July

J. W. de Leeuw, discussion leader

Selected poster presentations.

Animal Cells and Viruses

Tilton School

Harold Varmus and Kenneth Berns, co-chairmen

15 June

Virus structure: S. Harrison, discussion leader

J. Hogle, D. Wiley, R. Garcia, S. Fuller.

Translation and protein processing: M. Kozak, discussion leader

E. Mocarski, T. Jacks, E. Wimmer, A. Helenius

16 June

Genome replication: T. Kelly, discussion leader

B. Flanagan, M. Botchan, M. Challenge, R. McFadden, E. Winocour.

Reverse transcription and integration: S. Goff, discussion leader

J. Boeke, J. Summers, P. Brown, M. Linial

17 June

Transcription: P. Sharp, discussion leader

R. Tjian, A. Berk, P. Howley, D. Baltimore.

Virus vectors and differentiation: R. Jaenisch, discussion leader

A. Levine, B. Moss, N. Muzyczka, C. Cepko, D. Hanahan.

18 June

Gene regulation: A. Shatkin, discussion leader

J. Sadowski, I. Chen, R. Krug, K. Wilcox, T. Shenk.

Virus entry and pathogenesis: B. Fields, discussion leader

M. Houghton, J. McDougal, R. Colonna, C. Weissman.

19 June

Viral oncogenesis: M. Bishop, discussion leader

H. Hanafusa, E. Kieff, R. Weinberg, P. Vogt

Prospective conferees are encouraged to contribute to two poster sessions scheduled for 15 and 16 June and 17 and 19 June.

Applied and Environmental Microbiology

Colby-Sawyer College (S)

Frederic K. Pfaender, chairman; Ronald L. Crawford, vice chairman

27 July

Physiological and metabolic trends—anaerobic transformations: L. Young, discussion leader

D. Grbic-Galic, "Anaerobic microbial transformations of aromatic hydrocarbons."

J. Suflita, "Initial reactions in the anaerobic biodegradation of substituted aromatic chemicals."

J. G. Ferry, "Methanogenic pathways and their regulation."

Application of physiological processes to industrial problems: F. K. Pfaender, discussion leader

J. Thiele, "Ecoengineered biocatalysts for advanced bioremediation processes."

R. Brown, "Integration of electronics with solid-state sensors."

28 July

Recent progress in protein modification research: G. Pierce, discussion leader

A. Hagler, "Theoretical studies of peptide and protein design."

G. Petsko, "Use of site-directed mutagenesis to modify enzymatic stability and catalysis."

B. Erickson, "Chemical synthesis of designed proteins."

Recent progress in xenobiotic biotransformations: R. Crawford, discussion leader

J. Wilson, "Innovative biotechnologies for underground water reclamation."

H. Knackmuss, "Mineralization of xenobiotics by complementary catabolic activities."

29 July

Recent progress in metabolism of particle associated compounds: C. H. Ward, discussion leader

H. Pritchard, "Fate of organic chemicals in estuarine sediments."

R. Shimp, "Biodegradation of organic chemicals by microbial communities associated with sediments and other natural surfaces."

F. DiGiano, "Removal of organic con-

taminants from drinking water: Microbial degradation on porous adsorbents."

Recent progress in biopolymer research: A. Demain, discussion leader.

H. A. Scheraga, "Conformational energy calculations on polypeptides and proteins."

I. Sutherland, "Microbial polysaccharides—components in adhesion and polymers for industry."

30 July

Organismal and environmental research trends: D. White, discussion leader

J. Hunter-Cevera, "Microbial ecology and biotechnology: A successful partnership."

R. Morita, "The starved physiological state: The normal mode for most bacteria in nature."

H. Jannasch, "New bacterial isolates from deep sea hydrothermal vents."

D. Eveleigh, "Our rotting world."

31 July

Environmental considerations for genetically engineered microorganisms: A. Bourquin, discussion leader

R. Colwell, "Detection of genetically engineered organisms in the environment of presentation. The viable but not recoverable paradigm."

J. Tiedje, "Assessing the fate of genetically engineered microorganisms in soil."

S. Cuskey, "The use of conditional lethal genetic determinants for control of microorganisms released to the environment."

Those interested in submitting posters should contact Dr. Ronald L. Crawford, Department of Bacteriology and Biochemistry, University of Idaho, Moscow, IA 83843.

Atherosclerosis

Kimball Union Academy

Edwin L. Bierman and Stephen Schwartz, co-chairmen

22 June

Immunology of the vascular wall: J. Pober, discussion leader

G. Hansson, "Immunocytochemistry of the atherosclerotic plaque."

P. Lipsky, "Effects of accessory cells and lipoproteins on T-cell activation."

M. Feldmann, "Organ specific autoimmunity."

Role of macrophages in atherogenesis: A. Fogelman, discussion leader

R. Ross, "Macrophage-derived growth factors."

T. Innerarity, "Nature of the macrophage receptor recognizing beta VLDL."

23 June

Arterial wall lipoprotein accumulation: D. Steinberg, discussion leader

S. Stender, "Kinetics of lipoprotein entry into arterial wall."

M. Shasby, "Transendothelial transport across cultured endothelial monolayers."

G. Chisholm, "Accumulation of oxidized lipoproteins in the arterial wall."

Growth control of arterial cells: P. Di Corleto, discussion leader

R. Derynck, "Growth factor interactions."

M. Majesky, "PDGF independent growth."

24 June

Cell surface proteins and cytoadherence: M. Gimbrone, discussion leader

M. Ginsberg, "Platelet adhesive proteins."

T. Springer, "Intercellular adhesive proteins."

R. Heimark, "Endothelial aggregation proteins."

Apolipoprotein gene polymorphisms: R. Mahley, discussion leader

E. Lander, "Strategies for studies of restriction fragment length polymorphisms."

G. Assman, "Role of apolipoprotein gene anomalies in identification of individuals at risk for coronary arteriosclerosis."

25 June

Regulation of Apo-B in cells, humans and animal models: K. Luskey and J. Brunzell, discussion leaders

B. Brewer, "Regulation of Apo-B synthesis."

A. Attie, "Apo-B mutations and accelerated atherosclerosis in swine."

B. Lewis, "Hyperapo-B lipoproteinemia and spontaneous atherosclerosis in rabbits."

J. Goldstein, "Some afterdinner thoughts about cholesterol."

26 June

Proteases and thrombosis: J. Hawiger, discussion leader

D. Collen, "Therapeutic thrombolysis activator."

T. Edgington, "Receptor mediated initiation of thrombogenesis."

D. Stern, "Modulation of thrombogenicity of endothelium."

Atomic Physics

Brewster Academy

Thomas J. McIlrath chairman; David Wineland, vice chairman

6 July

Speaker to be announced, "Atoms in high fields."

P. Lambropoulos, "Multiphoton ionization in intense fields."

T. McIlrath, "Above threshold ionization."

7 July

W. E. Cooke, "Correlated motions of excited atomic electrons."

D. Shirley, "Multiple excitations of atoms."

C. Greene, "Doubly excited states and external field effects."

Y. Kim, discussion leader

J. Reader, "Spectra of highly ionized atoms: comparisons with relativistic calculations."

W. Johnson, "Relativistic calculations of atomic spectra."

8 July

D. Wineland, discussion leader

D. Pritchard, "Light forces on atoms."
A. Aspect, subject to be announced.
J. Bjorkholm, "Trapping and cooling of neutral atoms."
W. Phillips, discussion leader
R. Cook, "Quantum jumps and Zeno's paradox."
J. Bollinger, "Liquid and solid plasmas."

9 July

D. Kleppner, discussion leader
F. Himpel, "Two-photon photoemission from image potential states."
B. Yurke, "Squeezed states of light."
H. J. Kimble, "Squeezed states of light."

10 July

P. Koch, "Chaos."

Mechanisms of Biocompatibility Brewster Academy

James M. Anderson, chairman;
Robert Baier, vice chairman

13 July

R. Baier, discussion leader
J. D. Andrade, "Is protein adsorption relevant to biocompatibility?"
S. A. Brown, "Metals have surfaces too."
T. Horbett, "Mechanisms of protein adsorption to biomaterials."
J. Lemons, discussion leader
D. F. Williams, "Protein/metal interactions."
J. Brash, "Mechanisms of protein interactions at interfaces."

14 July

B. D. Ratner, discussion leader
T. Matsuda, "Coagulation factors and biocompatibility."
D. Chenoweth, "Biocompatibility and the human complement system."
J. Lindon, "Proteins, platelets, receptors, and blood compatibility."
L. Graham, discussion leader
S. L. Cooper, "Blood/material interactions using the canine ex vivo shunt."
R. J. Connolly, "The baboon model: In vivo, ex vivo, and in vitro blood compatibility studies."

15 July

M. Sefton, discussion leader
R. C. Eberhart, "Albumin binding on polymer surfaces."
S. W. Kim, "Bioactive antithrombogenic polymer surfaces."
B. E. Jarrell, "Human adult endothelial cell interactions with natural and synthetic polymers."
S. Barenberg, discussion leader
K. Merritt, "Bacterial adherence and infection."
A. G. Gristina, "Biomaterial infections: Molecular mechanisms."

16 July

J. Black, discussion leader
F. J. Schoen, "Pathologic calcification of tissue-derived and synthetic biomaterials."
A. M. Weinstein, "Implant related bone remodeling and biochemical compatibility."

P. S. Christel, "Bone remodeling with variable stiffness IM devices."

17 July

J. Rosen, discussion leader
L. A. Culp, "Multiple mechanisms of adhesion of cells to fibronectin matrices."
J. M. Anderson, "In vivo cellular biocompatibility."
D. F. Gibbons, "Tissue responses to changes in local environment caused by presence of an implant."

Biological Regulatory Mechanisms

Holderness School
Melvin Simon and John Gerhart, co-chairmen

22 June

Factors regulating transcription: R. Tjian, chairman
K. Yamamoto, T. Maniatis, H. Echols, K. Struhl, R. Tjian
Signal transducing systems regulating cell growth: T. Hunter, chairman
P. Nurse, J. Schlessinger, J. Knopf, T. Hunter

23 June

Translocational control: S. Lindquist, chairman
L. Gold, A. Hinnebusch, M. Matthews, S. Lindquist
Persistent states of chromatin: H. Weintraub, chairman
M. Andrews, A. Klar, P. McDonald, B. Cattanach, H. Weintraub

24 June

Regulation of splicing, J. Abelson, chairman
J. Dahlberg, D. Hirsch, J. Abelson
Regulation of intracellular traffic: D. Botstein, chairman
D. Botstein, J. Goldstein

25 June

Regulation of genome structure: J. Roth, chairman
D. Soll, M. So, J. Roth, M. Schmid.
Developmental regulation of the cell cycle: M. Kirschner, chairman
J. Ruderman, V. Foe, B. Nicklas, M. Kirschner

26 June

Signal transduction and information processing: P. Devreotes, chairman
E. Ross, S. Parkinson, J. Heller-Brown, P. Devreotes

Calcium Phosphates

Plymouth State College (N)
William J. Landis and Raquel Z. LeGeros, co-chairmen

22 June

J. Christoffersen, discussion leader
L. Brecevic, "Amorphous calcium phosphate as a precursor to hydroxyapatite formation."
P. Bennema, "Structural studies of hydroxyapatite, octacalcium phosphate, and brushite."
G. Nancollas, "The growth and inhibition of calcium phosphates."

S. Weiner, discussion leader

W. Traub, "Matrix structure and calcium phosphate crystal organization."
E. Katz, "Cross-linking stereochemistry of collagen and its implications for mineral localization."

23 June

S. Sarig, discussion leader
D. Eanes, "Lipid modifications and calcium phosphate deposition in liposome suspensions."
R. Azoury, "Effects of phosphonates on calcium phosphate."
P. Anderson, J. C. Elliott, "Coupled diffusion explanation of subsurface demineralization in acidic dissolution of porous apatite aggregates."
W. Higuchi, discussion leader
L. C. Chow, "Physico-chemical factors in the de- and remineralization of porous calcium phosphate solids."
J. Fox, "Analysis of dental enamel demineralization/remineralization via simultaneous diffusion and crystal kinetics."

24 June

Colin Robinson, discussion leader
L. Addadi, "Macromolecular surfaces as modulators of crystal nucleation and growth."
J. Kirkham, "Mineral/matrix interactions in developing enamel."
J. M. ten Cate, "Role of salivary proteins in mineral transport and deposition."
J. Levy, discussion leader
R. Levy, "New strategies for prevention of calcium phosphate deposition in cardiovascular implants."
A. E. Clark, "Compositional dependence of bioactive implants."

25 June

M. D. Grynpas, discussion leader
D. Simmons, "Skeletal adaptation to microgravity."
E. Holton, "Bone growth during space flight."
S. Doty, "Bone cell responses to hypogravity and nonweight bearing conditions."
W. J. Landis, discussion leader
J. Kirschvink, "Biomineralization, the geomagnetic field, and animal navigation."

26 June

E. Gabriel, discussion leader
S. Pollack, "Electrical double layers in bone."
C. Rubin, "Skeletal adaptation to mechanical and electrical influences."
A poster session will be held. Abstracts of work to be considered for poster presentation should be sent to: Dr. William J. Landis, Enders Building, Room SB20, Children's Hospital, 300 Longwood Avenue, Boston, MA 02115.

Cancer

Colby-Sawyer College (N)
Gloria Heppner, chairman; Sandra Wolman, vice chairman

Variability in Cell, Tissue and Population Biology of Cancer

17 August

Tumor progression and evolution: H. Rubin, discussion leader
P. Frost, "Tumor progression."
S. O'Brien, "Genomic evolution."
A. Wilson, "Molecular basis of evolution."
Genetic mechanisms of variability: L. Diamond, discussion leader
L. Loeb, "DNA fidelity."
T. O'Brien, "Genetic variability in ornithine decarboxylase."

18 August

High-frequency variation in normal and neoplastic populations: R. Kerbel, discussion leader
O. Smith, "Regulation of human cell lifespan."
J. Shapiro, "Karyotypic changes in cancer cells."
N. Dracopoli, "Reduction to homozygosity in tumor heterogeneity."
Oncogene roles in variability: P. Duesberg, discussion leader
G. Nicholson, "Oncogenes in tumor progression and metastasis."
N. Fausto, "Proto-oncogenes and growth factors in regenerating liver."

19 August

Multifactorial regulation of normal and neoplastic development: S. Ethier, discussion leader
E. Stanbridge, "Suppressor genes."
M. Terzaghi, "Growth stimulatory and inhibitory factors."
Z. Grossman, "Origin and significance of cellular heterogeneity: Dynamic aspects."
Tissue regulation of normal and neoplastic development: I. J. Fidler, discussion leader
G. Cunha, "Stromal-epithelial interactions in development."
J. Price, "Organ selectivity in metastasis."

20 August

Systemic regulation of neoplastic development
Mechanisms of diet in cancer: C. Ip, discussion leader
L. Marnett, "Unsaturated fatty acid modulation of cell proliferation."
E. Castro, "Nutritional regulation of gene regulation."
R. Hoffman, "Methionine transmethylation and cancer."
Neuro-endocrine immune regulation: discussion leader to be announced
J. E. Blalock, "Glucocorticoid-immune network."
A. Greenberg, "Conditioning in immunity."

21 August

Molecular and cellular genetic approaches to epidemiology: S. Wolman, discussion leader
D. Guerry, "Molecular epidemiology of melanoma."

An application blank for attendance at the Gordon Research Conferences may be found on page 1261.

B. Levin, "Population dynamics of somatic cells and their viruses."
T. Dryja, "Molecular genetics of retinoblastoma."

Carbohydrates

Tilton School

Hans H. Baer, chairman; Gerald O. Aspinall, vice chairman

22 June

R. W. Jeanloz, discussion leader
J. F. G. Vliengenthart, "Investigations of the N-linked carbohydrate chains of glycoproteins."
A. Dell, "Solving structural problems by FAB-MS."
W. A. Szarek, discussion leader
D. C. Baker, "Synthesis, biosynthesis, and enzymology of 2'-deoxycytosine."
A. K. Ganguly, "New oligosaccharide antibiotics."

23 June

D. R. Bundle, discussion leader
K. Bock, "Limitations of empirical calculations in conformational analysis of oligosaccharides: A branched trisaccharide with the central D-glucopyranose unit in the ¹C₄ conformation."
L. Kenne, "Some recent progress in structural analysis of polysaccharides."
J. Reuben, "Monomer composition of cellulose ethers: ¹³C-NMR analysis and mathematical modeling."
D. Horton, discussion leader
G. J. McGarvey, "Convergent approaches to the asymmetric synthesis of carbohydrates."
M. Weigle, "The chemistry of three bioactive natural products."

24 June

G. O. Aspinall, discussion leader
P. J. Brennan, "Structures, and physiological and immunological roles, of the specific glycolipids of mycobacteria."
T. Feizi, "Carbohydrate differentiation antigens: Their relevance in cell growth regulation."
S. I. Hakomori, "Glycosphingolipid antigens."
Y. Guindon, discussion leader
O. R. Martin, "Intramolecular C-glycosidation: A new tool in carbohydrate chemistry."
J.-M. Beau, "Anionic anomeric species of carbohydrates: Preparation and use in synthetic chemistry."

25 June

G. Descotes, discussion leader
J. Thiem, "Stereoselective oligosaccharide synthesis by chemical and enzymatic glycosylation."
T. Ogawa, "Some topics in oligosaccharide synthesis."
J. Szejtli, "Properties and industrial potential of cyclodextrins."
C. P. J. Glaudemans, discussion leader
G. Lukacs, "Synthesis of fluorine-containing carbohydrates of biological interest."
N. F. Taylor, "Some biochemical aspects of fluorocarbohydrates."

26 June

H. J. Jennings, discussion leader
O. Hindsgaul, "Recognition of substrates by glycosyltransferases."
G. Magnusson, "Synthesis and conformation of modified oligosaccharides with biological receptor activity."
Participants are invited to present posters.

Catalysis

Colby-Sawyer College (N)

Richard D. Gonzalez, chairman; Michael Kelley, vice chairman

22 June

R. D. Gonzalez, discussion leader
G. Ertl, "Oscillations in the low pressure oxidation of CO on Pt single crystal surfaces."
E. E. Wolf, "FTIR studies of the dynamics of CO oxidation on supported catalysis."
R. D. Gonzalez, discussion leader
D. W. Goodman, "CO oxidation over single crystals and supported catalysts."

23 June

R. D. Gonzalez, discussion leader
J. H. Lunsford, "The role of surface-generated gas phase radicals."
A. M. Gaffney, "Catalytic oxidative coupling of methane over sodium promoted manganese oxide on silica and magnesia."
R. D. Gonzalez, discussion leader
A. Anderson, "Activation of hydrogen on molybdenum disulfide catalysts."

24 June

R. D. Gonzalez, discussion leader
L. D. Schmidt, "Structure and reactivity of metal catalysts."
D. Smith, "Ultrahigh resolution imaging of clusters."
R. D. Gonzalez, discussion leader
T. S. King, "Study of supported bimetallic catalysts applications of solid-state NMR and Monte Carlo simulations."

25 June

R. D. Gonzalez, discussion leader
J. A. Shwarz, "The effect of catalyst preparation on catalytic activity."
H. Kung, "Selective oxidation of propane and butane."
R. D. Gonzalez, discussion leader
V. Ponec, "Metal support interactions."

26 June

R. D. Gonzalez, discussion leader
D. Short, "The mechanism of the synthesis of methanol under commercial reaction conditions."
B. H. Davis, "Mechanistic aspects of zeolite catalyzed methanol to hydrocarbon conversion."

Cell Contact and Adhesion

Tilton School

Caroline Damsky, chairman; David McClay, vice chairman

29 June

Cell-cell adhesion I: M. Takeichi, discussion leader

M. Schachner, "CAMs in the nervous system."
B. Cunningham, "Characterization of CAMs."
C. Goridis, "Molecular biology of N-CAM."
Cell-cell adhesion II: B. Obrink, discussion leader
R. Kemler, "Uvomorulin."
B. Shur, "Galactosyl transferases in cell adhesion."
E. Butcher, "Lymphocyte homing mechanisms."

30 June

Adhesion mediated morphogenesis: D. McClay, discussion leader
G. Edelman, "CAMs in development."
M. A. Bronner-Fraser, "Cell interactions in neural crest."
C. Goodman, "Cell interactions in insect nervous systems."
Cell-matrix adhesion I: R. Hynes, discussion leader
M. Pierschbacher, "RGD receptors."
L. Parise, "GP IIb IIIa multifunctional receptor of platelets."
T. Springer, "Leukocyte receptors."

1 July

Cell-matrix adhesion II: H. Kleinman, discussion leader
C. Buck, "Integrin complex: receptor for Fn and Ln."
L. Liotta, "The 68K laminin receptor."
Gap and tight junctions: A. Warner, discussion leader
N. B. Gilula, "Gap junctions."
D. Paul, "p27 gap junction protein."
B. Stevenson, "ZO-1 a tight junction associated antigen."

2 July

Cytoskeleton associated contacts and their modulation I: B. Geiger, discussion leader
M. Steinberg, "Desmosome structure and assembly."
K. Burridge, "Cytoskeleton-membrane interactions."
W. T. Chen, "Cell contacts and proteases."
Short talks chosen from abstracts submitted by attendees.

3 July

Modulation of cell contacts II: J. Quigley, discussion leader
Z. Werb, "Proteases and development."
P. Patterson, "Proteases and neurite outgrowth."
I. Vlodavsky, "Matrix-sequestered growth factors."
Attendees are encouraged to make poster presentations at the conference and should send abstracts with the application. Some abstracts will be selected for the Thursday evening session of short presentations.

Central Nervous System Development: Cellular and Molecular Mechanisms

Salve Regina College

Ruben Adler, chairman; Jean Lauder, vice chairman

29 June

C. Goodman, discussion leader
A. Artavanis-Tsanokas, "*Drosophila* neurogenesis."
D. Anderson, "Gene expression in sympathoadrenal development."
P. Maness, "pp60^{c-src} in the developing nervous system."
D. Toran-Allerand, discussion leader
R. Evans, "Steroid hormone receptors in the mammalian CNS."
G. Teitelman, "Cellular and molecular analysis of neuroendocrine cell differentiation."

30 June

R. Adler, discussion leader
J. deVellis, "Regulation of neuronal and glial cell proliferation and differentiation by hormones and growth factors."
D. Toran-Allerand, "Gonadal steroid influences on neural development: Direct or indirect?"
H. Thoenen, "Comparison between nerve growth factor and brain-derived neurotrophic factor (BDNF)."
H. Thoenen, discussion leader
J. Lauder, "Serotonin as a morphogenetic agent and differentiation signal."
S. Kater, "Self-assembly of neuronal circuits: A calcium hypothesis of growth cone regulation."

1 July

N. Seeds, discussion leader
U. Rutishauser, "Chemistry and biology of N-CAM."
T. Jessell, "Cell recognition in sensory neuron development."
J. Raper, "Labeled axons and growth cone guidance."
P. G. Nelson, discussion leader
M.-M. Poo, "The first 3 minutes of synaptogenesis: A physico-chemical view."
M. Constatine-Paton, "Effects of activity patterns on the development of the retinotectal projection."

2 July

S. Fedoroff, discussion leader
C. Goodman, "Molecular genetics of fasciclin: Membrane glycoproteins which label specific axon pathways during development."
R. Miller, "Glial cell differentiation in the rat optic nerve."
R. Adler, "Differentiation of retinal neurons and photoreceptors in vitro."
A. Vernadakis, discussion leader
M. Bunge, "Neuron glia interactions: Schwann cell extracellular matrix formation and myelination."
M. Hatten, "Neuron-glial interactions in vitro."

3 July

M. Bunge, discussion leader
S. McLoon, "Transplants of embryonic CNS tissue into the visual system of developing and mature rats."
F. Gage, "Differential role of specific adult brain targets on viability and development of intracerebrally grafted embryonic neurons and glia."

Solid-State Studies in Ceramics Plymouth State College (S)

David W. Johnson, Jr., chairman;
David B. Marshall, vice chairman

Processing and Properties of Electronic Ceramics

27 July

D. A. Payne, discussion leader
R. E. Newnham, "Composite electroceramics."
K. Utsumi, "Processing technology of multicomponent ceramic substrates."
I. A. Aksay, discussion leader
Y. Ozaki, "Sol-gel processing of substrates and capacitors."
R. Raj, "The relationship between green microstructure and sintering of tapes."

28 July

H. Chan, discussion leader
M. Ruhle, "Structure and chemistry of metal ceramic interfaces."
A. Shroff, "Interfacial reactions of ultrathin metal films on ceramics."
R. C. Sundahl, discussion leader
M. Sayer, "Structure and processing of electrooptic and piezoelectric films."
H. M. O'Bryan, "Chemistry and phase equilibria of LiNbO_3 ."

29 July

H. U. Anderson, discussion leader
D. M. Smyth, "Defects and electrical properties in perovskites."
T. O. Mason, "Solid-state chemistry of spinel ferrites."
G. Pike, discussion leader
L. Levinson, "Nonlinear conduction in electronic ceramics."
M. P. Harmer, "Microstructural analysis of interfaces in dielectrics."

30 July

N. G. Error, discussion leader
J. C. Mage, "Loss mechanisms in microwave dielectrics."
Student poster session.
D. W. Johnson, discussion leader
G. Neumann, "Forty-five years of aircraft engine technology: A personal view."

31 July

I. Burn, discussion leader
L. E. Cross, "Polarization and deformation mechanisms in relaxor dielectrics."
M. F. Yan, "Composition-property relationships in dielectric materials."

Chemical Oceanography

Kimball Union Academy

Christopher S. Martens, chairman;
Miriam Kastner, vice chairman

17 August

P. N. Froelich, discussion leader
R. Garrison, M. Kastner, "Cyclicality and geochemistry of phosphorites in the Monterey Formation and Peru continental margin."
Y. Kolodny, "Phosphate and oxygen isotope equilibration."
W. C. Burnett, "Cyclicality and quaternary phosphatization along continental margins."

C. E. Reimers, discussion leader

B. B. Jorgensen, "Chemoautotrophic and photoautotrophic cycling of sulfide in microbial mats."

D. J. DesMarais, "Carbon isotope biogeochemistry of microbial mats and ancient stromatolites."

18 August

J. W. Murray, discussion leader
D. J. DeMaster, "Characterizing transport mechanisms and scavenging rates for particle-reactive species in near shore environments."
N. Fisher, "Biota-metal interactions."
M. P. Bacon, "Seasonality in radionuclide scavenging and delivery to Pacific deep waters."
E. Boyle, discussion leader
N. Shackleton, "Stable isotope evidences for changes in deep water circulation."
S. E. Emerson, "Glacial-interglacial changes in bottom water oxygen, sedimentary organic carbon, and pore water isotopes."

19 August

I. Suess, discussion leader
T. Bowers, "Chemical controls on the composition of vent fluids at 13°N and 21°N, East Pacific Rise."
J. P. Chanton, C. S. Martens, "Chemical and isotopic studies of West Florida escarpment cold seep sediments."
H. Sakai, "Geochemical characterization of *Calpytogenia soyone* colonies in Sagami Bay, Japan."
R. A. Berner, discussion leader
R. C. Aller, J. E. Mackin, "Iron reduction and non steady-state diagenesis in Amazon shelf sediments."
F. Prahl, "Variations in terrestrial organic carbon contributions to Pacific NW slope sediments."

20 August

W. Roether, discussion leader
P. Klein, "Physics of deep water nutrient transport to the euphotic zone."
W. J. Jenkins, "Tracers of primary production and its variability."
J. Goldman, M. Silver, "Temporal variability of food chain processes and new production in pelagic surface waters."
J. I. Hedges, discussion leader
S. Brassel, "Lipid biological markers as indicators of climatic change."
H. Elderfield, "Chemical and isotope tracers of ocean paleochemistry."

21 August

P. G. Brewer, discussion leader
M. Whitfield, "Markers for particle scavenging processes."
Speaker and subject to be announced.
N. R. Andersen, "New Ocean Sciences research initiatives."

Chemical Senses: Taste and Smell

Plymouth State College (S)

Robert J. O'Connell, chairman;
James T. Kuznicki, vice chairman

13 July

Postnatal factors influencing preferences for chemical stimuli: G. Beauchamp, chairman

W. Hall, "New routes to early olfactory preferences in rats."

G. Beauchamp, "Development and modification of human salt taste preference."

L. Birch, "The role of experience in the modification of affective reactions to food."

R. Contreras, discussant

Neurophysiological aspects of developing sensory systems: R. Bradley, chairman

C. Mistretta, "Development of the receptive field properties of peripheral and central taste neurons."

John Brugge, "Synchronized development of sensory circuits in the auditory system."

J. Kaas, discussant

14 July

Neurogenesis and plasticity of olfactory neurons: R. Costanzo, chairman
R. Costanzo, "A quantitative description of neurogenesis in young and old animals."

A. Farbman, "Effects of early sensory deprivation on neurogenesis in the olfactory epithelium."

D. Laing, "Effects of rearing animals in a restricted olfactory environment."

P. Graziadei, "Factors influencing both neurogenesis and target recognition."

E. Morrison, discussant

Structural and functional development of taste buds: B. Oakley, chairman

B. Oakley, "Morphological development of taste buds."

D. Hill, "Development and plasticity of taste receptor mechanisms."

I. Miller, discussant

15 July

Molecular approaches to the study of olfactory development: A. Farbman, chairman

F. Margolis, "Molecular biology of the olfactory system: A developmental model."

V. Carr, "The use of monoclonal antibodies in studies of olfactory development."

R. Anholt, "Primary events in olfactory reception."

A. Farbman, discussant

Developmental changes in taste cell ionic channels: S. Roper, chairman
S. C. Kinnamon, "Ionic channels in isolated taste cells from the mudpuppy."

B. Lindemann, "Patch clamp experiments with frog taste cells."

M. Akabas, discussant

16 July

Genetic mutations as probes of chemosensory system development in *Drosophila*: J. Hildebrand, chairman
O. Siddiqi, "Taste mutants in *Drosophila*."

V. Rodrigues, "Olfactory mutants in *Drosophila*."

L. Tompkins, "Mutations in chemosensory pathways of *Drosophila*."

Where and when in development do they act?"

J. Carlson, discussant

Morphological, physiological and behavioral aspects of vomeronasal system development: M. Halpern, chairman

C. Wysocki, "Comparative developmental studies of the vomeronasal system."

N. J. Bean, "Behavioral effects of removal of the vomeronasal organ in neonatal mice."

P. Pedersen, "The development of the vomeronasal pathway: Form and function."

D. Holtzman, discussant

17 July

Psychophysics of the chemical senses across the human life span: C. Murphy, chairman

B. Cowart, "The development of taste and smell perception."

R. Katzman, "Alzheimer's disease: An overview of functional and anatomical alterations."

C. Murphy, "Psychophysical studies of the chemical senses in the aged."

W. Cain, discussant

Chemotherapy of Experimental and Clinical Cancer

Colby-Sawyer College (S)

Susan B. Horwitz, chairman;
Thomas Tritton, vice chairman

20 July

J. Minna, discussion leader

E. Sausville, "Bombesin action in lung cancer and rat pituitary cells."

M. Lippman, "Autocrine growth control of human breast cancer—a potential target for antitumor therapy."

A. Oliff, "The effects of tyrosine kinase inhibitors and growth factor antagonists on normal and transformed cell proliferation."

R. Parks, discussion leader

D. Goldman, "A biochemical basis for the selectivity of antifolate action and leucovorin rescue."

R. Moran, "New folate antimetabolites inhibitory to de novo purine synthesis."

21 July

Y.-C. Cheng, discussion leader

S. Broder, "Chemotherapeutic strategies for AIDS."

D. Bolognese, "Prospects for development of a vaccine for AIDS."

F. Wong-Stall, "Molecular aspects of the AIDS retrovirus."

T. Tritton, discussion leader

M. Colvin, "Phase I trials with differentiating agents HMBA and NCH₃ formamide."

J. A. Hickman, "Is a stress response involved in tumor cell differentiation?"

22 July

E. Frei, discussion leader

K. Antman, "Preclinical studies of high dose combined alkylating agents—synergism and resistance."

T. McElwain, "The clinical use of intensive therapy with bone marrow support."

M. Moore, "Preclinical in vivo studies of hematopoietic growth factors in bone marrow transplantations."

J. Trent, discussion leader

W. Cavenue, "Molecular approaches to the definition of tumor subtypes."

G. Brodeur, "Oncogene activation in human neuroblastomas."

23 July

K. Tew, discussion leader

J. Bertino, "Altered enzymes in methotrexate resistance."

D. Santi, "On the mechanism and structure of thymidylate synthase."

J. Lazo, "Novel attributes of bleomycin hydrolase."

B. Chabner, discussion leader

B. Chabner, "The rationale for a change in screening for anticancer drugs."

M. Boyd, "Development of screens for new drugs with antineoplastic activity."

24 July

V. Ling, discussion leader

R. Hawley, B. Mintz, "Handicapped retroviral vectors: An experimental model for human gene transfer."

T. Caskey, "Genetic correction of genetic disease in mice and man."

P. Gros, "Use of retroviral vectors to transfer multidrug resistance."

Conferees are invited to contribute to the two poster sessions scheduled for 20 and 21 July and 22 and 23 July.

Chronobiology

Plymouth State College (S)

Michael Menaker, chairman; Terry Page, vice chairman

29 June

W. O. Friesen, discussion leader

G. E. Block, "Cellular analysis of a molluscan retinal pacemaker."

A. Eskin, "Probing for putative pacemaker proteins in *Aplysia*."

F. Strumwasser, "Reciprocal coupling between the membrane and the circadian oscillator: evidence and speculation."

R. Barlow, discussion leader

J. Takahashi, "Circadian clock in cell culture: perturbation of pineal pacemaker."

J. Besharse, "A role for melatonin and dopamine in circadian regulation in the vertebrate retina."

30 June

M. Young, discussion leader

J. Hall, "Manipulation of molecules produced by *Drosophila's period* gene."

C. Johnson, "Hand, photoreceptor, clock: a potpourri of unicells and strategies."

J. Feldman, "Homology between a *Drosophila* clock gene and *Neurospora* DNA."

S. Reppert, discussion leader

F. Davis, "Before there was light: entrainment during early mammalian development."

T. Page, "Environmental effects of the post-embryonic development of

the circadian system of the cockroach."

1 July

R. Y. Moore, discussion leader

M. Lehman, "Neurotransplantation of the suprachiasmatic nuclei."

D. Earnest, "Rhythms in vasopressin from cultured and transplanted suprachiasmatic neurons."

S. Honma, subject to be announced

E. Gwinner, "Circadian organization of feeding and perch hopping in passerines."

B. Goldman, "Physiological substrates for a mammalian calendar: photoperiodism and endogenous timekeeping."

2 July

I. Zucker, discussion leader

P. DeCoursey, subject to be announced.

B. Rusak, subject to be announced.

T. Page, discussion leader

M. Kawato, subject to be announced.

C. S. Pittendrigh, subject to be announced.

3 July

F. Turek, discussion leader

E. Van Cauter, subject to be announced.

K.-I. Honma, subject to be announced.

S. Daan, subject to be announced.

CO₂ Fixation by Green Plants

Plymouth State College (N)

G. Edwards, chairman; R. Jensen, vice chairman

6 July

R. Jensen, discussion leader

H. Roy, "Assembly of Rubisco from native subunits."

S. Guthridge, "In vivo inhibitor of Rubisco."

R. A. Cattolico, "Chloroplast phylogeny and gene location."

G. Bowes, discussion leader

T. Sharkey, "Photosynthesis and triose-phosphate utilization."

K. Hanson, "Stereochemical and CO₂ exchange probes of photorespiratory metabolism."

7 July

M. Gibbs, discussion leader

S. Robinson, "Osmotic adjustment and chloroplast volume."

H.-J. Bohnert, "Protein import by chloroplasts."

B. Hiltz, V. Franceschi, "Identification and cellular localization of a putative sucrose transporting protein(s) in soybean."

M. O'Leary, discussion leader

S. A. von Caemmerer, "Modeling and carbon isotope fractionation."

J. Berry, "Oxygen isotope utilization."

8 July

J. Preiss, discussion leader

M. Stitt, "Cytosolic regulation of photosynthate partitioning by Fru 2, 6P₂ and sucrose-P synthase."

C. Black, "Regulation of gluconeogenesis/glycolysis."

T. Sugiyama, "Regulation by nitrogen of carbon assimilating enzymes in C₄ plants."

L. Schrader, discussion leader

D. Egli, "Partitioning of assimilates between vegetative and reproductive growth in soybean."

R. Gifford, "Carbon fixation and whole plant partitioning: The potential for crop yield increase."

9 July

D. Walker, discussion leader

H. Krause, "Freezing stress, carbon metabolism and chlorophyll fluorescence."

R. Douce, "Biochemical changes during sucrose deprivation."

W. Kaiser, "Response of CO₂ fixation to dehydration."

G. Edwards, discussion leader

H. Heldt, "Energy transfer between organelles."

10 July

C. B. Osmond, discussion leader

J. Boynton, "The chloroplast genome."

S. Huber, "Properties of PEP carboxylase in C₄ plants."

C. Martin, "The ecophysiological significance of Crassulacean acid metabolism."

Coatings and Films

Plymouth State College (S)

Jerome A. Seiner, chairman; Louis Floyd, vice chairman

3 August

J. Brinker, discussion leader

B. Yoldas, "Noncompositional modifications of sol-gel deposited films."

I. Thomas, subject to be announced.

L. R. Reif, discussion leader

H. K. Yasuda, "Formation of ultrathin films by plasma polymerization."

R. R. Birge, "Perspectives on the application of Langmuir-Blodgett techniques to molecular electronics."

4 August

G. Bierwagon, discussion leader

R. E. Smith, "Monitoring electric discharges during electrodeposition of organic coatings."

A. Toman, subject to be announced.

K. Tsutsui, "Plasma treatment of polymers containing polypropylene."

M. Godsay, discussion leader

T. Van De Ven, "Coating of pulp fibers during the papermaking process."

P. Lepoutre, subject to be announced.

5 August

T. J. Miranda, discussion leader

J. M. Vergnaud, "Drying of coatings and films without chemical reaction."

D. J. Coyle, "The physics of roll coating."

J. K. Haken, subject to be announced.

K. A. Mauritz, discussion leader

G. Westermann-Clark, subject to be announced.

C. E. Rogers, subject to be announced.

6 August

J. A. Asenjo, discussion leader

C. G. Horvath, "Supports and surfaces for chromatographic separation of biological molecules."

M. M. Domach, "Materials used with biomolecules."

L. Floyd, discussion leader

B. Dimitriadis, "Coatings solvents and the atmosphere."

J. Berry, "The environmental impact of coatings solvents."

7 August

T. A. Ward, discussion leader

S. Ikeda, "Plasma treatment of organic pigment."

J. W. Van Dyk, "Four component solubility parameters—a new dimension."

Condensed Matter Physics

Brewster Academy

Richard Webb and David Thouless, co-chairmen

Long Range Phase Coherence in Condensed Matter Systems

29 June

R. Rammal, "Effect of boundary conditions on quantum fluctuations."

B. Pannetier, "New experimental results on wire arrays."

P. Chaikin, "Flux quantization in aperiodic networks."

A. Schmidt, "Quantum fluctuations in superconducting weak links."

30 June

S. Chakravarty, "New results on fluctuations in disordered superconductors."

A. Goldman, "Quantum fluctuations in ultrathin superconducting films."

J. Garland, "Flux pinning and 2-D transitions in disordered superconductors."

M. Fisher, "Dissipation and quantum fluctuations in granular superconductivity."

R. Dynes, "Superconductivity in disordered metals."

1 July

H. Fukuyama, "Conductance fluctuations and proximity effects in small samples."

W. Skocpol, "Universal conductance fluctuations in silicon nanostructures."

S. Washburn, "Experiments on conductance fluctuations."

N. Giordano, "Conductance fluctuations in metal films and wires."

D. Prober, "Quantum interference and phase breaking times."

2 July

M. Buettiker, "The Aharonov Bohm effect in metal rings."

M. Stephens, "Localization and fluctuations of classical waves."

B. Souillard, "Strong localization of classical waves."

S. Das Sarma, "Fluctuations in the

hopping conductivity of microstructures."

J. Maynard, "Acoustic Anderson localization in random and quasi-periodic systems."

3 July

Y. Gefen, "Physics of tunnel junctions: new results and new questions."

M. Tinkham, "New results in ultra-small Josephson junctions."

Corrosion

Colby-Sawyer College (N)

Gerald H. Meier, chairman; David J. Duquette, vice chairman

20 July

Transport in oxides: D. J. Duquette, discussion leader

A. Atkinson, "Transports in oxide films."

W. E. King, J. H. Park, "Cation grain boundary transport in Cr_2O_3 and Y-doped Cr_2O_3 ."

Micro-chemical analysis of oxide films: W. W. Smeltzer, discussion leader

G. J. Yurek, K. Przybylski, "Effects of the segregation of impurities at oxide grain boundaries on oxidation mechanisms."

M. J. Graham, D. F. Mitchell, "Chemical analysis of oxide scales using electron energy loss microscopy."

21 July

Stress generation in oxides films: G. C. Wood, discussion leader

B. Pieraggi, "Growth stress generation in oxide scales growing by cation diffusion."

D. Shores, "Stresses in oxide films." Adherence of oxide films: J. G. Smeggil, discussion leader

J. L. Smialek, "Chemical bonding aspects of Al_2O_3 scale adhesion."

K. Luthra, C. L. Briant, "Effects of segregation and stress on scale adhesion."

22 July

External mechanical effects on oxidation: J. F. Stringer, discussion leader

M. Schutze, "Behavior of oxide scales under isothermal LCF and under thermal cycling conditions."

N. Birks, "Interaction between the erosion and corrosion of metals at high temperatures."

Hot corrosion: F. S. Pettit, discussion leader

R. A. Rapp, "Chemistry and electrochemistry of hot corrosion."

M. Seiersten, P. Kofstad, "Mechanisms of vanadate induced hot corrosion."

23 July

Oxidation of titanium and the refractory metals: D. L. Douglass, discussion leader

C. Coddet, "High-temperature oxidation of titanium alloys."

J. Morral, R. A. Perkins, R. Svedberg, Panel discussion: What is the potential for improved oxidation resistance of refractory metal alloys?

Oxidation phenomena associated

with microelectronic devices: R. P. Frankenthal, discussion leader

E. A. Irene, "Oxidation of Si."

S. P. Murarka, "Oxidation of silicides."

24 July

High temperature oxidation of Si-containing alloys: J. B. Wagner, discussion leader

F. H. Stott, "The effects of Si on the oxidation of Fe-Cr alloys."

M. J. Bennett, "Silica—how effective is the third of the triumvirate?"

Developmental Biology

Proctor Academy

Ira Herskowitz and Matthew Scott, co-chairmen

20 July

Gametogenesis: D. Melton, discussion leader

D. Melton, G. Struhl, C. Nusslein-Volhard, S. Strome

Cell biology of early development: P. Wasserman, discussion leader

P. Wasserman, J. Ruderman, R. Gimlich, G. Schubiger, J. McGhee

21 July

Morphogenesis: I. Sussex, discussion leader

I. Sussex, P. Green, B. Sheridan, M. Freeling, M. Fuller

Intercellular communication: J. Weston, discussion leader

J. Weston, G. Sprague, L. Reichardt, R. Hynes, J. Priest

22 July

Neurobiology: C. Goodman, discussion leader

C. Goodman, Y.-N. Jan, R. Horvitz, G. Rubin, T. Jessell

Genetic control of development I: J. Kimble, discussion leader

J. Kimble, V. Ambros, T. Cline, S. Artavanis-Tsakonas

23 July

Genetic control of development II: M. Scott, discussion leader

M. Scott, D. Hogness, P. Ingham, H. Jackle, C. Cepko

Gene regulation I: S. Tilghman, discussion leader

S. Tilghman, C. Emerson, R. Firtel

24 July

Gene regulation II: S. McKnight, discussion leader

S. McKnight, U. Schibler, M. Carlson, A. Hochschild, I. Herskowitz

Drug Metabolism

Holderness School

Anthony Y. H. Lu, chairman; F. Peter Guengerich, vice chairman

20 July

Stereoselectivity in drug metabolism and disposition: W. Trager, discussion leader

W. Trager, "Stereoselective considerations in drug metabolism."

H. W. Ruelius, "Stereoselectivity in glucuronidation."

N. Castagnoli, "Stereoselective process in the metabolism of nicotine."

Separation of stereoisomers: S. K. Yang, discussion leader

S. K. Yang, "Chiral stationary phase HPLC and stereoselective metabolism of aromatic carcinogens."

D. H. Sieh, "Direct HPLC resolution of drug enantiomers."

21 July

Molecular genetics: C. B. Pickett, discussion leader

M. R. Waterman, "Expression of adrenocortical steroid hydroxylases."

R. H. Tukey, "Regulation of rabbit and human constitutive cytochrome P-450s."

C. B. Pickett, "Regulation of glutathione S-transferase genes by *Xenobiotica*."

Mechanisms of cytochrome P-450-catalyzed reactions: R. P. Hanzlik, discussion leader

R. P. Hanzlik, "Mechanistic versatility of cytochrome P-450."

R. E. White, "Active site dynamics of cytochrome P-450."

22 July

The role of drug metabolism in drug discovery process: B. H. Migdalof, discussion leader

D. Kaiser, "The role of drug disposition in the drug discovery process."

B. N. Swanson, "The role of the bioanalytical laboratory in drug discovery."

M. J. Humphrey, "Pharmacokinetic study in the selection of new drugs."

Mechanism of metabolism-mediated toxicity: S. D. Nelson, discussion leader

S. D. Nelson, "Effects of some structural modifications to compounds that form toxic metabolites."

J. Uetrecht, "Studies on mechanisms of procainamid mediated formation of antinuclear antibodies."

23 July

Extrahepatic metabolism involving eicosanoid substrates: B. S. S. Masters, discussion leader

R. T. Okita, "Metabolism of PGs and other eicosanoids."

R. J. Soberman, "Mechanisms of ω -oxidation of LTB₄."

M. L. Schwartzman, "Arachidonic acid metabolism in renal and corneal tissues: Formation of biologically active metabolites."

Keynote speech: A. Y. H. Lu, discussion leader

S. Orrenius, "Biochemical mechanism of hepatotoxicity."

24 July

New NMR methods in drug metabolism: F. P. Guengerich, discussion leader

T. Harris, "NMR techniques in the characterization of drugs and their interactions with macromolecules."

S. M. Cohen, "MRI, ¹³C, ³¹P NMR spectroscopic studies of drug action in experimental animal models."

Dynamics of Gas-Surface Interactions

Proctor Academy

Steven J. Sibener, chairman; Daniel J. Auerbach, vice chairman

10 August

C. T. Rettner, discussion leader

B. Kay, "Rotationally and vibrationally inelastic $\text{NH}_3/\text{Au}(111)$ scattering: experiment and theory."

A. C. Kummel, "Orientation and alignment of N_2 scattered from $\text{Ag}(111)$."

E. Stechel, "Dynamics of electron stimulated desorption."

A. Nitzan, discussion leader

R. E. Smalley, "Photoelectron spectroscopy of metal and semiconductor clusters."

Poster Session I.

11 August

G. Comsa, discussion leader

S. M. George, "Measurements of surface diffusion using laser induced thermal desorption."

R. Gomer, "Anisotropy in surface diffusion."

H. Ibach, "Anomalous surface phonon dispersion, surface stress, and surface reconstruction."

J. Lapujoulade, discussion leader

J. P. Toennies, "High resolution He scattering studies of surface structure and dynamics."

E. J. Heller, "Semiclassical method for atom and molecule-surface interactions."

Poster session II.

12 August

S. T. Cyer, discussion leader, Part I

J. Harris, "Sticking of H_2 and D_2 on copper."

C. Cerjan, "Atom and diatom scattering at surfaces: A time-dependent approach."

U. Valbusa, discussion leader, Part II

J. C. Tully, "Precursor dynamics."

J. T. Yates, Jr., discussion leader

R. J. Madix, "Reactive scattering of gases from metal surfaces."

A. E. DePristo, "Dissociative chemisorption dynamics."

Poster session III.

13 August

R. R. Cavanagh, discussion leader

C. B. Harris, "Energy transfer and photochemistry on metal and semiconductor surfaces."

R. M. Osgood, Jr., "Single photon laser assisted surface chemistry."

Speaker and subject to be announced.

G. Scoles, discussion leader

M. J. Cardillo, "Excitations at crystal surfaces by hyperthermal collisions."

Poster session IV.

14 August

R. F. Willis, discussion leader

K. Kern, "Rotational epitaxy of noble gas films physisorbed on metal surfaces."

M. S. Daw, "Dynamics of hydrogen at high coverages on transition metal surfaces."

Y. J. Chabal, "The role of substrate electrons and phonons on the H-H and H-surface interactions: hydro-

gen on W(100), Mo(100), and Pt(111)."

Dynamics of Simple Systems in Chemistry and Physics

Brewster Academy

E. F. Redish, chairman; W. P. Reinhardt, vice chairman

10 August

C. Shakin, "The impact of QCD on nuclear physics."

G. Karl, "Quark models for nucleons and light nuclei."

11 August

P. Koch, "Microwave ionization of high Rydberg states."

J. N. Bardsley, "Is there chaos in quantum mechanics?"

R. Jensen, "Regular and chaotic behavior in the ionization of Rydberg atoms."

12 August

M. Stayer, "Quasi-periodic motion in TDHF descriptions of heavy ion collisions."

H. Kroger, "Scattering on a momentum space lattice."

W. Polyzou, "Relativistic quantum models of few-particle systems."

S. Wallace, "Relativistic few-particle equations."

13 August

M. Kellman, "New group theoretic classifications of atomic energy levels."

Y. Alhassid, "Algebraic approach to scattering and reactions."

A. R. P. Rau, "Interaction of Rydberg electrons with external fields and with each other."

14 August

S. Coon, "Three-body forces in nuclear and molecular systems."

J. Morgan, "Highly accurate Eigenvalues for He-like atoms and the convergence of the 1/Z perturbation expansion."

Y. Koike, "Three-nucleon scattering calculations."

Elastin

Kimball Union Academy

Robert Mecham, chairman; Jeffrey Davidson, vice chairman

10 August

Vascular remodeling in pulmonary and systemic hypertension: F. Keeley, discussion leader

M. Rabinovitch, "Elastin metabolism in the pulmonary vasculature in response to monocrotaline-induced pulmonary hypertension."

K. Stenmark, "The role of the smooth muscle cell in vascular remodeling."

D. Riley, "Mechanisms of vascular connective tissue synthesis in pulmonary hypertension."

Angiogenesis: Judah Folkman, keynote speaker and discussion leader

11 August

Elastin fibers in heritable and acquired diseases affecting skin: J. Uitto, discussion leader

K. Holbrook, "Morphology of elastic fibers in the skin."

J. Uitto, "Biochemical alterations in elastic fibers in heritable skin diseases."

Minisymposium on cutaneous aging: The role of elastic fibers: L. Matsuo-ka, D. Bissett, M. G. Giro, participants.

Panel discussion: Pharmacologic prevention and reversal of cutaneous aging.

Elastin in fibrotic diseases and tumorigenesis: E. G. Cleary, discussion leader

E. Crouch, "Fibrotic lung disease."

B. Zetter, "Role of elastin in pulmonary metastasis."

12 August

Alpha-1-protease inhibitor: M. Banda, discussion leader

D. Perlmutter, "Regulation of alpha-1-PI synthesis."

R. Senior, "Chemotactic activity of alpha-1-PI."

T. Nukiwa, "Molecular biology of alpha-1-PI variants."

R. Crystal, "Therapy for alpha-1-PI deficiency with native and recombinant molecules."

Molecular biology of elastin and elastase: J. Rosenbloom, discussion leader

J. Rosenbloom, "New insights into elastin structure."

G. Salvesen, "Neutrophil elastase: Structure and biological control."

13 August

Elastin binding proteins and receptors: A. Serafini-Fracassini, discussion leader

M. Gibson, "Microfibrillar-associated glycoprotein."

L. Sakai, "Fibrillin and extracellular microfibrils."

Minisymposium on elastin receptors: participants to be invited.

Poster session: Elastase, lysyl oxidase, and elastin ultrastructure.

14 August

Regulation of elastin synthesis: J. Davidson, discussion leader

R. Mecham, "The role of the plasma membrane in regulation of elastin gene expression."

J. Davidson, "Signals for elastin synthesis."

General poster session, Tuesday afternoon. Conference participants are encouraged to present posters on their studies related to the major topics of this conference. Posters dealing with elastase and elastin turnover, lysyl oxidase, and elastin ultrastructure will be presented on Thursday evening.

Elastomers

Colby-Sawyer College (N)

E. N. Kresge, chairman; B. E. Eichinger, vice chairman

13 July

Conference opening, E. N. Kresge

A. F. Halasa, discussion leader

J. Roovers, "Synthesis and proper-

ties of model branched polybutadienes."

G. Sylvester, "Synthesis and properties of *cis* 1,4-polydienes made with rare-earth catalysts."

R. E. Cais, "Chemical modification of polybutadiene by dihalocarbene addition hydrogenation."

R. Livigni, discussion leader

J. E. McGrath, "Synthesis of functionalized elastomeric polyethers."

S. L. Cooper, "New generation polyurethanes."

14 July

H. Hsieh, discussion leader

R. P. Quirk, "Anionic polymerization of dienes and trienes: Microstructure architecture and functionalization."

T. J. McCarthy, "Introduction of specific organic functional groups to polymer surfaces."

W. Gronski, "Monte Carlo and D-NMR studies of orientational order in strained elastomeric networks."

R. Ullman, discussion leader

J. Curro, "Network release processes."

M. T. Shaw, "Relaxation processes in swollen networks."

15 July

R. A. Weiss, discussion leader

L. Kleintjens, "Some recent developments in the thermodynamics of polymer blends."

I. C. Sanchez, "Microphase separation in block copolymers and related systems."

P. F. Green, "An elastic recoil detection study of diffusion in polymer melts."

G. G. A. Bohm, discussion leader

W. J. MacKnight, "Phase behavior in random copolymer blends."

D. P. Gregory, "Mechanical and flow-through properties of porous elastomeric films."

16 July

E. T. McDonel, discussion leader

M. Gerspacher, "Mechanistic studies on carbon black-elastomer interactions."

R. J. Eldred, "Anisotropic filler effects on elastomeric fracture."

A. Gent, "Internal fractures in elastomeric composites."

G. Ver Strate, "Polymer modification of fluids."

17 July

B. E. Eichinger, discussion leader

J. L. Sullivan, "A new nonlinear viscoelasticity model for unfilled rubber."

D. Pearson, "The effects of molecular weight distribution on viscoelastic properties of polymers."

J. E. Martin, "Fractal concepts in polymeric systems."

Energy Coupling Mechanisms

Holderness School

Alan E. Senior, chairman; Bernard L. Trumpower, vice chairman

29 June

Y. Hatefi, discussion leader

P. V. Vignais, "Chemical approach to the topography of the nucleotide binding sites in F₁-ATPase."

A. S. Mildvan, "Nucleotide binding and catalysis in adenylate kinase and F₁-ATPase."

K. Tagawa, "A concept on regulatory mechanism of mitochondrial F₁F₀-ATPase."

R. H. Fillingame, discussion leader

R. D. Simoni, "Molecular genetics of *Escherichia coli* F₁F₀-ATPase."

J. E. Walker, "Genes for mammalian mitochondrial ATP synthase."

30 June

C. W. Slayman, discussion leader

E. J. Bowman, "Structure of the vacuolar H⁺-ATPase of *N. crassa* and comparison to other eukaryotic H⁺-ATPase."

R. Serrano, "Mutational analyses of yeast plasma-membrane H⁺-ATPase."

D. K. Stone, "Molecular characteristics of the clathrin-coated vesicle proton pump."

R. L. Cross, discussion leader

R. M. Macnab, "Biochemical and genetic analysis of the bacterial flagellar motor."

P. D. Boyer, "Some perspectives regarding rotational catalysis."

1 July

A. Tzagoloff, discussion leader

M. Saraste, "Isolation and analysis of the cytochrome oxidase genes in bacteria."

L. Grivell, "Mutational studies on the yeast UQ-cytochrome c reductase."

J. H. Weiner, "Molecular genetics of fumarate and DMSO-reductases."

D. S. Beattie, discussion leader

R. A. Capaldi, "Structure and mechanism of cytochrome oxidase."

G. von Jagow, "Variation of the bc principle in the course of evolution."

2 July

R. A. Capaldi, discussion leader

D. C. Wallace, "Mitochondrial genes: Maternal diseases."

C. P. Lee, "Metabolic disorders involving mitochondrial dysfunction."

S. DiMauro, "Diseases involving mitochondrial electron transfer."

M. G. Douglas, discussion leader

G. Schatz, "How mitochondria import proteins from the cytoplasm."

3 July

H. R. Kaback, discussion leader

F. Palmieri, "Mitochondrial anion carriers."

T. H. Wilson, "Transport of sugars into bacterial cells."

Environmental Sciences: Air

Tilton School

F. Sherwood Rowland, chairman

17 August

Atmospheric chemistry during the Antarctic spring: J. Calvert, session chairman

R. S. Stolarki, "Satellite measurements."

M. J. Molina, "Laboratory data."
Trends in atmospheric hydrocarbons: W. Chameides, session chairman
J. Levine, "Historical record."
D. Blake, "Recent trends in methane and other hydrocarbons."

18 August

Nuclear winter/autumn:
R. Turco, S. Schneider
Methane and other gases from termites: D. Ehhalt, session chairman
R. Rasmussen, P. Zimmerman

19 August

Radiochemical studies of atmospheric processes: E. Mroz, session chairman
K. Rahn, "Neutron activation analysis for identification of trace element sources."
L. Currie, "Modern carbon-14 measurements."
Multi-dimensional atmospheric modeling:
J. Pyle, D. J. Wuebbles.

20 August

Particulates in the atmosphere:
D. Hofmann, "Observations during the Antarctic Spring."
F. Arnold, "Mass spectrometric observation of atmospheric ions."
Sulfur gases in the atmosphere: A. Bandy, session chairman
R. Prinn, "Field measurements."
C. Howard, "Laboratory measurements."

21 August

Atmospheric carbon monoxide: W. DeMore, session chairman
M. A. Khalil, subject to be announced.

Enzymes, Coenzymes and Metabolic Pathways

Kimball Union Academy

Paul A. Bartlett and Gregory Petsko, co-chairmen; Jack F. Kirsch and William J. Ray, Jr., co-vice chairmen

6 July

J. Kirsch, discussion leader
N. Cozzarelli, "Determination of mechanisms of DNA metabolizing enzymes by topological approaches."
J. Kyte, "Structure and mechanism of enzymes catalyzing active transport."
H. Schachman, "Effect of amino acid substitutions on the catalytic and regulatory properties of aspartate transcarbamylase."
G. Petsko, discussion leader
J. Collier, "Active site studies on diphtheria toxin and pseudomonas exotoxin A."
P. Coleman, "Influenza virus neuraminidase: Structure, function, and antibody binding."

7 July

G. Kenyon, discussion leader
L. Addadi, "Biomineralization."
J. Kirsch, "Site-directed mutagenesis

studies on aspartate aminotransferase."

J. Stubbe, "Evidence for radical intermediates in the reaction catalyzed by ribonucleotide reductase."
P. Bartlett, discussion leader
P. Majerus, "A pathway for inositol phosphate metabolism."
R. Vale, subject to be announced.

8 July

B. Rubin, discussion leader
C. Hyde, "The three-dimensional structure of tryptophan synthase."
L. Johnson, "Phosphorylase catalysis: Three dimensional movie by x-ray diffraction."
K. Wuthrich, "Recent advances in the use of NMR for studies of protein structure and function."
A. McCammon, discussion leader
M. Karplus, subject to be announced.
P. Kollman, "Studies of enzyme catalysis using a combination of quantum mechanics and free energy perturbation methods."

9 July

T. Fink, discussion leader
B. Matthews, "Structural basis of thermolysin activity."
N. Porter, "Photochemical activation of acylated serine proteases."
C. Townsend, "Biosynthetic and biomimetic studies of β -lactams."
J. Knowles, discussion leader
C. Walsh, "Studies on enzymes in polyhydroxybutyrate biosynthesis."
S. Oroszlan, "The enzymology of AIDS."

10 July

W. Ray, discussion leader
T. Meek, "Mechanistic studies on the carbamoyl-phosphate synthetase II of the trifunctional CAD protein."
A. Rendina, "Studies on the mechanism of mung bean dehydroquinase."

Epithelial Differentiation and Keratinization

Tilton School

Lowell A. Goldsmith, chairman; Stuart Yuspa, vice chairman

3 August

Genetic regulation and introduction of genes into keratinocytes: D. Lowy, discussion leader
D. Lowy, "Effect of papilloma-transforming genes in epidermal cells."
S. Yuspa, "Introduction of oncogenes into keratinocytes."
A. Nienhuis, "Gene transfer with retroviral vectors."
Cell kinetics and proliferation: R. Lavker, discussion leader
D. Stacey, "Control of epidermal proliferation."
K. Elgjo, "Molecular identity and mechanisms of chalones."

4 August

Cytoskeletal and other structural proteins in epithelial cells: Expression and regulation: L. A. Goldsmith, discussion leader
R. Goldman, "What does the cytoskeleton integrate? Role of actin?"

B. Dale, "Control of filaggrin expression."

W. Gallin, "The role of CAMs on feather formation and differentiation."
Poster session on keratins and other structural mono molecular: E. Fuchs and P. Steinert, discussion leaders

5 August

Protein kinase regulated events: P. Blumberg, discussion leader
P. Blumberg, "Protein kinase C and its regulation."
J. Knopf, "Protein kinase C gene family."
J. Fairley, "Control of free Ca^{++} in keratinocytes."
Poster session on cell periphery and its organization during differentiation: P. Wertz and R. Rice, discussion leaders

6 August

Hormones, vitamins, growth factors, and their control: L. King, Jr., discussion leader
H. Moses, "Transforming growth factor beta in epithelial cells."
P. Davies, "Vitamin A induction of transglutaminase."
R. Gates, "Epidermal vitamin A binding proteins in disease."
Development of keratinizing systems: N. Fusenig, discussion leader
I. Dawid, "Embryonic keratin genes in *Xenopus*."
S. Compere, "Transgenic mice with *ras* gene."

7 August

Formation of complex tissues in keratinizing systems: I. Mackenzie, discussion leader
B. Munger, "Afferent nerves and skin differentiation."
G. Rogers, "Macromolecules in cultured hair follicles."
E. Bell, "Living skin equivalent."
At least two poster sessions followed by discussion will be held on 4 and 5 August. There will be a general poster session. Those interested in contributing to a poster session should indicate this on their application. A poster title and one-page abstract should be sent by 1 July 1987 to: Lowell A. Goldsmith, Department of Dermatology, University of Rochester School of Medicine, P.O. Box 697, 601 Elmwood Avenue, Rochester, NY 14642.

Fertilization and Activation of Development

Holderness School

Jerry L. Hedrick, chairman; Victor D. Vacquier, vice chairman

17 August

Sperm and egg receptors: M. G. O'Rand, discussion leader
J. D. Bleil, "Interaction of zona pellucida glycoproteins with the sperm head at the cellular and molecular levels."
E. Toepfer-Petersen, "Fucose-binding protein involved in mammalian gamete interaction."

L. J. Dangott, "Egg-peptide receptors from spermatozoa."

Biophysics of sperm-egg interactions: David F. Katz, discussion leader
D. P. L. Green, "Sperm thrust and the penetration of egg investments."
J. Baltz, "Mechanical requirements of zona binding."

18 August

Control of fertilization by alteration of egg envelopes: E. J. Carroll, Jr., discussion leader
B. M. Shapiro, "Regulation of fertilization envelope assembly and cross linking."
C. Katagiri, "The molecular basis for the oviduct-induced alteration of the vitelline coat and its implication in acquisition of fertilizability in toad eggs."
C. R. Brown, "Oviduct-zona pellucida-sperm interactions."
Regulation of gamete function by membrane changes: D. L. Garbers, discussion leader
V. D. Vacquier, "A regulatory protein of the sea urchin sperm membrane."
D. E. Wolf, "Diffusion and the control of membrane regionalization in mammalian sperm."

19 August

Mechanism of the acrosome reaction: B. T. Storey, discussion leader
N. First, "Site and mechanisms regulating capacitation of bovine sperm."
M. Hoshi, "Acrosome reaction inducing substances in the starfish egg jelly."
G. S. Kopf, "The role of guanine nucleotide binding regulatory protein in the zona pellucida induced mouse sperm acrosome reaction."
Cytoplasmic control of nuclear transformation: Y. Masui, discussion leader
F. J. Longo, "Pronuclear expansion mechanisms."

20 August

Structure-function relations of gamete proteases: J. L. Hedrick, discussion leader
A. Henschen, "Mammalian acrosin: the structure and its functional implications."
R. A. P. Harrison, "Aminopeptidases in mammalian spermatozoa."
Research frontiers in animal and human fertilization: F. Haseltine, speaker.

21 August

Alternative modes in fertilization: R. P. Elinson, discussion leader
C. Campanella, "The *Discoglossus pictus* egg: A model for highly polarized fertilization."
C. C. Lambert, "Fertilization and the block to polyspermy in ascidian eggs."
Y. Inoue, "The cortical reaction in fish eggs: Molecules, mechanisms, and meaning involved."
All participants are encouraged to bring posters to the meeting. Posters will be organized by topics and displayed throughout the meeting.

Fiber Science

Colby-Sawyer College (N)

R. E. Fornes, chairman; Bhuvnesh C. Goswami, vice chairman

6 July

Fiber structure/property development and characterization: J. R. Schaefgen, discussion leader

A. J. Pennings, "Structure development in high strength fibers of flexible polymers."

D. C. Prevorsek, Y. D. Kwon, S. Kavesh, "Transverse properties of gell-spun fibers."

Fiber structure/property development and characterization: S. Kavesh, discussion leader

I. M. Ward, "Structure, properties and applications of ultrahigh modulus polyethylene fibers."

7 July

Fiber formation and characterization: Herglotz, discussion leader

R. S. Stein, "Neutron scattering studies of highly oriented fibers."

J. E. Spruiell, "Structure development in the fiber threadline."

Carbon fiber formation: L. Peebles, discussion leader

A. S. Abhiraman, "Fundamental aspects of conversion of pan-based precursors to carbon fibers."

8 July

Yarn and fabric analysis: S. Backer, discussion leader

P. Schwartz, "Strength and stress-strain analysis of high-performance fibers."

P. Grosberg, "The use of expert systems in the design of fabrics to meet mechanical specifications."

Structure of protein fiber: H. Noether, discussion leader

C. E. Schutt, "Crystallography of the actin: Profilin complex, a high-resolution view of an actin filament precursor."

9 July

Diffusion, mobility of penetrants: M. Schoppee, discussion leader

R. McGregor, R. D. Gilbert, K. Hamada, T. Iijima, "ESR spin-probe studies of penetrant molecule motions in fibers and films."

B. Miller, "Penetration and distribution of liquids in fibrous networks."

Historical perspective: H. Zollinger, discussion leader

H. Mark, "Fiber science in the 20th century and a forecast for the 21st century."

10 July

Characterization of nonconventional fabrics: S. Warner, discussion leader

A. N. Roe, H. A. Davis, A. J. Ultee, "Recent developments in understanding physical properties of elastomeric fibers."

S. K. Batra, W. Udomkitchdecha, M. H. Mohamed, "On the characterization of lateral compression on bulky fiber webs (non-wovens)."

Poster sessions scheduled for Monday and Wednesday afternoons.

Fluids in Permeable Media

Proctor Academy

Stanley C. Jones, chairman; Henry J. Ramey, Jr., vice chairman

27 July

H. J. Ramey, Jr., discussion leader

H. T. Davis, "Pore-space statistics from volume-programmed fluid displacement."

S. J. Salter, "Mechanisms of three-phase flow (relative permeability) in porous media."

C. J. Radke, "Bouncing bubbles: the dynamics of Haines jumps in constricted capillaries."

F. M. Orr, Jr., discussion leader

J. C. Trygstad, "Delimiting flow facies for simulation and secondary recovery."

A. J. Katz, "Mercury injection in porous media: kinetics, geometry, and transport."

28 July

H. T. Davis, discussion leader

W. G. Laidlaw, "Modeling flow in porous media at the pore level."

T. J. T. Spanos, "Multiphase flow in heterogeneous porous media."

C. K. Harris, "A realistic pore-network model for fluid flow calculations."

H. Adam, discussion leader

D. L. Rickman, "Quantification of microgeometry by image analysis."

R. Ehrlich, "Determination of pore/throat correlations and their effect on flow properties."

29 July

J. J. Novosad, discussion leader

J. S. Buckley, "Wettability of crude oil/brine displacements."

K. Trabelsi, "Study of rock-fluid interactions in oil reservoir rocks."

F. A. L. Dullien, "Early water breakthrough, mixed wettability characteristics and nonuniform pore structure observed in 'homogeneous' Pembina Cardium plugs."

R. J. Blackwell, discussion leader

G. Daccord, "Flow of reactive fluids through porous media."

J. J. Novosad, "Surface excess concept in modeling adsorption in porous media."

30 July

R. A. Greenkorn, discussion leader

E. M. Withjack, "Computed tomography (CT) studies of flow visualization and rock characteristics."

T. Okazawa, "A new approach to the centrifugal method for measuring drainage and imbibition capillary pressure."

J. C. Melrose, "Characterization of microporosity by capillary pressure measurements."

J. J. Taber, discussion leader

B. Bourbiaux, "Local description of spontaneous imbibition in a natural porous medium."

G. Hamon, "Scaling-up displacement tests for oil-wet fractured water drive reservoirs."

31 July

L. W. Holm, discussion leader

R. L. Christiansen, "Gas flooding ex-

periments for the eastside of the Yates field unit."

T. G. Monger, "CO₂-induced organic deposition."

F. M. Orr, Jr., "Composition paths in four-component systems: The effect of dissolved methane on CO₂ flood performance in one dimension."

Free Radical Reactions

Salve Regina College

D. Griller, chairman; J. W. Wilt, vice chairman

24 August

M. J. Perkins, discussion leader

M. Newcomb, "Organic electron transfer reactions."

F. Minisci, "Polar effects in free radical syntheses."

M. J. Perkins, discussion leader

P. Tordo, "Redox chemistry of mono-, di-, and polyphosphines."

25 August

K. U. Ingold, discussion leader

D. Carlsson, "Polymer degradation: Free radical reactions in the 'solid' state."

J. Gerlock, "Is this car paint any good?"

K. U. Ingold, discussion leader

J. Walton, "Radical conformation and stabilization."

26 August

B. C. Gilbert, discussion leader

T. Scott, "Picosecond cage reactions of free radicals."

J. Luszyk, "Carboxyl, cyclopropyl and oxiranyl radicals."

B. C. Gilbert, discussion leader

R. Louw, "Thermal hydrogenolysis: A radical way of reducing waste."

27 August

J. W. Wilt, discussion leader

D. P. Curran, "Free radical reactions in organic synthesis."

D. Clive, "Recent developments in radical-based methodology."

J. W. Wilt, discussion leader

D. Druliner, "Oscillating reactions in Co catalyzed cyclohexane oxidation."

T. Clarke, "Radical interactions with closed shell molecules."

28 August

A. Alberti, discussion leader

C. Chatgililoglu, "Spectra of free radicals and silanes as free radical reducing agents."

H. Fischer, "Quantitative aspects of time-resolved CIDNP and CIDEP."

Genetic Toxicology Bioassay

Salve Regina College

William G. Thilly, chairman; Daniel A. Casciano, vice chairman

22 June

Protein and DNA adducts as human dosimeters.

Session I chairman, L. Ehrenberg

S. R. Tannenbaum, H.-G. Neumann.

Session II chairman, K. Helmink

K. Randerath, R. A. Hites.

23 June

Amounts and kinds of genetic changes in human somatic cells.

Session I chairman, R. J. Albertini

A. Morley, R. Jensen.

Session II chairman, J. Preston

H. J. Evans, B. Lambert.

24 June

Relationships among DNA adducts and the kind and position of point mutations.

Session I chairman, F. Hutchinson

R. Fuchs, T. Kunkel.

Session II chairman, W. G. Thilly

M. Calos, N. Cariello.

25 June

Variables in human genetic studies: specificity of metabolism and DNA repair among tissues and among individuals.

Session I chairman, B. Strauss

P. Hanawalt, P. Lohman.

Relationship of human dosimetry to risk of disease.

Session II chairman, L. Ehrenberg

26 June

Technological advances in the study of human genetics: Mapping, sequencing and recognizing aneuploidy.

S. Cram, chairman

R. M. Myers, J. W. Gray, L. E. Hood.

Gravitational Effects in Materials, Processes, and Living Systems

Colby-Sawyer College (S)

M. E. Glucksman, chairman; E. K. Ray, S. R. Coriell, co-vice chairmen

17 August

M. R. Moldover, R. J. Naumann, discussion leaders

J. Lipa, "Testing the renormalization group theory of cooperative transitions."

D. Beysens, "Suppression of gravity induced convection during phase separation of binary fluids in the critical region."

P. Voorhees, "Late stage phase transformation: A comparison between theory and experiment."

G. B. McFadden, S. Ostrach, discussion leaders

C. F. Chen, "Finger convection in a mushy zone."

S. H. Davis, "Coupled convective transport in directional solidification."

18 August

R. Snyder, G. Seaman, discussion leaders

P. Todd, "Gravity dependent phenomena at cellular dimensions."

U. Zimmerman, "Electrofusional cells and protoplasts under microgravity conditions."

D. J. Cosgrove, "Biophysical basis for asymmetrical stem growth in plant geotropism."

G. J. Abbaschian, H. Gray, discussion leaders

R. J. Bayuzick, "Containerless pro-

cessing of refractory metals and alloys."

D. Camel, "Directional dendritic solidification of metallic alloys under microgravity."

19 August

S. Doty, discussion leader

J. J. Reynolds, "Model in vitro systems for the study of mechanical stress on connective tissue."

B. R. McLeod, "Gravitational and magnetic effects on living cells."

G. Rodan, "Mechanical effects on bone remodeling, the role of prostaglandins."

B. Picard, "Testing a new model for gravity reception by plants."

R. H. Doremus, T. Wang, discussion leaders

M. Weinberg, "Glasses and ceramics: Gas phase processes."

D. Day, "Containerless processing of glass forming melts in microgravity."

20 August

N. B. Singh, R. S. Subramanian, discussion leaders

F. Rosenberger, "Gravitational effects on transport in vapor crystal growth."

H. Wiedemeier, "Vapor transport and crystal growth in metal chalcogenide-halide systems."

E. Kaldis, "New microgravity results on the growth of α -H₂O₂."

G. Malacinsky, B. I. Briegleb, discussion leaders

A. Neff, "Response of large vertebrate eggs and early embryos to altered gravity forces."

A. Grigoriev, subject to be announced.

21 August

J. J. Favier, H. U. Walter, discussion leaders

R. A. Brown, "Microscopic and macroscopic models of crystal growth."

D. Larson, "Response of eutectic systems to gravity."

K. W. Benz, "Solution growth of III-V semiconductors under microgravity."

Hemostasis

Proctor Academy

Jack J. Hawiger, chairman; James G. White, vice chairman

15 June

Cell biology of megakaryocytes and their regulation: R. D. Rosenberg, discussion leader

R. Hoffman, "Megakaryocyte development: Control by growth factors and cellular interactions."

A. Gewirtz, "Autoregulation of human megakaryocytes."

D. Kuter, "Plasma factors which regulate megakaryocyte maturation."

R. Berthier, G. Marguerie, "Biosynthesis and processing of GPIIb/IIIa in cultured human megakaryocytes."

Protein kinase C regulatory mechanisms in platelets and vascular cells: S. E. Rittenhouse, discussion leader

M. Feinstein, "IP₃ receptor/calcium channel in platelets."

T. Connolly, "Protein kinase C regu-

lation of 5-phosphomonoesterase."

R. Haslam, "The 47-kilodalton platelet substrate of protein kinase C."

Y. Hannum, "Lipid regulation of protein kinase C."

16 June

Molecular biology of receptors in platelets and endothelial cells: D. Phillips, discussion leader

L. Fitzgerald, "Platelet membrane glycoproteins IIb/IIIa: relationship to adhesion receptors."

M. Poncz, "Molecular cloning of the full length cDNA for GPIIb."

A. Ash, "Molecular and cellular biology of glycoprotein Ib."

J. Lopez, "Molecular cloning of GPIb."

R. Jackman, "Structure of the human cDNA and gene for thrombomodulin."

Synthetic peptides and site-specific antibodies in thrombosis and thrombolysis: E. Haber, discussion leader

J. Hawiger, "Design and testing of platelet anti-aggregatory peptides."

B. Collier, "Monoclonal antibodies as antithrombotic agents."

D. Stern, "Interaction of factor IX-derived peptides with endothelium."

G. Matsueda, "Antibody-guided thrombolytic agents."

17 June

Contractile apparatus in platelets and other non-muscle cells: J. G. White, discussion leader

V. Marchesi, "Contractile apparatus in non-muscle cells."

J. Fox, "Platelet membrane skeleton organization and function."

P. A. Janmey, "Regulation of gelsolin-actin interaction by inositol phosphatides."

M. C. Beckerle, "Talin function in platelets and other cells."

*New horizons in hemostasis: M. Zucker, discussion leader

18 June

Pathfinders' forum: Where does the first thrombin molecule come from in hemostasis? E. Davie, discussion leader

S. Rapaport, "Crisscrossed pathways."

Y. Nemerson, "Initiation of blood coagulation by tissue factor and factor VII."

P. Tracy, "Prothrombinase function on cell membranes."

S. Iwanaga, "Molecular mechanism of hemolymph coagulation system in *Limulidae*."

Keynote address:

H. Lodish, "Structure and biogenesis of plasma membrane proteins."

19 June

Control of vascular and non-vascular wounds: C. Esmon, discussion leader

Z. Ruggeri, "The functional domains of von Willebrand factor."

J. Morrissey, "The structure-function relationship of tissue factor."

E. Sadler, "Tissue factor cDNA structure and chromosomal localization."

M. Bevilacqua, "Activation of vascu-

lar endothelium by inflammatory mediators."

T. Deuel, "The role of growth factors in wound healing."

*Abstracts of unpublished work to be submitted for selection by 30 April 1987 to Dr. Jack Hawiger, New England Deaconess Hospital, 185 Pilgrim Road, Boston, MA 02215.

Heterocyclic Compounds

New Hampton School

Victor Snieckus, chairman; Heinz W. Gschwend, vice chairman

6 July

P. Mariano, "Mechanistic and synthetic aspects of iminium salt photochemistry."

S. Weinreb, "Hetero cycloaddition methodology in synthesis."

T. Bell, "Heterocyclic building blocks and binding sites in rigid hosts."

G. Markl, "The phosphorus carbon double as a powerful building block in the synthesis of heterocyclic systems."

7 July

D. Dowan, "Design, synthesis, and study of new heterocyclic metals and superconductors."

J. Campbell, "Synthesis of [b,e]-fused aminopyridines via transition-metal promoted cyclization of *N*-cycloenamido- α -aminonitriles."

R. Kelly, "Heterocyclic receptors to recognize neutral organic guests."

J. Rebek, Jr., "Heterocycles in molecular recognition."

8 July

M. Cava, "Studies in pyrrole and indole chemistry."

J. Muchowski, "Recent studies in pyrrole chemistry."

R. Conn, "Fischer indole synthesis: some unexpected products and their routes of formation."

M. Isobe, "Methodology and natural product synthesis with heterocycles."

9 July

D. Keith, "The penam nucleus: Correlation of chemical reactivity and biological activity with structure."

P. Jacobi, "Oxazoles in natural product synthesis."

T. Fukuyama, "Synthetic studies of isomitomycins and mitomycins."

B. Giese, "Conformation and reactions of carbohydrate radicals."

10 July

G. McGarvey, "4-substituted 2-oxazolines in stereoselective acyclic synthesis."

A. Waldner, "[4+2] cycloadditions with 1-aza-1,3-butadienes."

Hormonal Carcinogenesis

New Hampton School

Jonathan J. Li, chairman; John A. McLachlan, vice chairman

2 August

R. Hoover, "Hormonal etiology of cancer: Epidemiologic insights and controversies."

3 August

Hormone associated human cancers: R. Hoover, discussion leader

A. Herbst, "Carcinogenic aspects of intrauterine exposure to DES."

D. Kaufman, "Hormones, carcinogens and endometrial cells."

Differentiation and transplacental carcinogenesis: J. A. McLachlan, discussion leader

E. Boylan, "Transplacental exposure to DES and mammary development and carcinogenesis."

S. Sukumar, "Specificity of oncogenes activation and carcinogen-induced tumors is related to host development."

4 August

Culture models for cell proliferation: S. Nandi, discussion leader

R. J. Coffey, "Role of transforming growth factors in epithelial cell systems."

R. B. Dickson, "Estrogen and antiestrogen regulated secretion of growth factors in human breast cancers."

I. Mitra, "Prolactin production by human breast cancer cells in culture."

Growth factors and oncogenes: G. Mueller, discussion leader

C. Barrett, "Cellular and molecular mechanisms of estrogen induced cell transformation."

P. Chambon, "Steroid hormone receptors and control of gene expression in breast cancer."

5 August

Stages in hormonal carcinogenesis: S. A. Li, discussion leader

S. Goldfarb, "Histogenesis of estrogen-induced renal carcinomas in the hamster."

G. Lucier, "Estrogen promotion of hepatocarcinogenesis in rats."

Bioactivation and irreversible binding: J. Fishman, discussion leader

R. Brueggemeier, "Regulation of estrogen bioactivation and metabolism."

J. Liehr, "Bioactivation of estrogens and DNA damage in Syrian hamster kidney."

6 August

Role of P-450 in steroid hydroxylation: D. Kupfer, discussion leader

J. Weisz, "Catechol estrogen formation: a plethora of phenomena."

D. Waxman, "Hepatic cytochromes P-450: Regulation of endogenous steroid metabolism."

J. J. Li, "Covalent estrogen binding to specific hamster cytochrome P-450's: Possible consequences."

C. B. Huggins, "The mammary cancer machine."

7 August

Androgen carcinogenesis: J.-A. Gustafsson, discussion leader

P. Ofner, "Combined androgen-estrogen-induced hyperplasia and dysplasia in the rat dorsal lateral prostate."

J. S. Norris, "Steroid induced tumors arising in the male Syrian hamster reproductive tract: regulation of tumor growth by autocrine mechanism."

Abstract forms for posters may be requested from Dr. Jonathan J. Li, Medical Research Laboratories, VA Medical Center, Building 49, University of Minnesota, 54th Street and 48th Avenue South, Minneapolis, MN 55417. Please return abstracts before 20 May 1987.

Hormone Action

Kimball Union Academy

James H. Clark and Michael G. Rosenfeld, co-chairmen

3 August

M. Lippman, discussion leader

J. Schlessinger, "EGF and EGF receptors: Biochemical and genetic analysis."

R. Williams, "PDGF receptor and mitogenic pathways."

H. Moses, "Stimulatory and inhibitory effects of TGF- β ."

R. Hochberg, discussion leader

C. Mendelson, "Regulation and expression of aromatase in estrogen-producing cells."

M. Waterman, "Regulation of steroid hydroxylase gene expression."

4 August

K. Korach, discussion leader

D. Toft, "Steroid receptors in a primitive water mold, *Achlya*."

R. Smith, "Estrogen receptor forms and action."

B. Markaverich, "Bioflavonoids and antiestrogen action."

I. Kourides, discussion leader

H. Towle, "Regulation of rat liver gene expression by thyroid hormones."

B. Nadal, "Thyroid hormone control of muscle myosin isozymes."

5 August

S. Bourgeois, discussion leader

J. Drouin, "POMC: A tissue-specific promoter under negative regulation by glucocorticoids."

J. Cidlowski, "Glucocorticoid induced cell lysis."

R. Evans, "Steroid receptors and erb-A-proto-oncogenes."

T. Means, discussion leader

B. Kream, "Hormonal control of collagen synthesis in bone."

B. Catterall, "Calcium channel regulation."

6 August

K. Horwitz, discussion leader

L. Chan, "Structure and evolution of the apolipoprotein gene family."

R. Maurer, "Regulation of prolactin gene expression."

D. Shapiro, "Regulation of vitellogenin synthesis."

J. Clark, discussion leader

B. O'Malley, "Gene transcription: Steroid receptors and *trans*-acting factors."

7 August

T. Gelehrter, discussion leader

M. Walker, "Insulin gene structure."

A. Saltiel, "Mediators of insulin action."

B. Crenshaw, "Tissue specific expression of gene regulation."

Immunochemistry and Immunobiology

Plymouth State College (N)

Ursula Storb, chairman; Ethan Shevach, vice chairman

27 July

Lymphocyte surface molecules: E. Shevach, discussion leader

H. Waldmann, "Modulation of the immune response by monoclonal antibodies to cell surface antigens."

R. Robb, "Structure of the IL-2 receptor."

F. Fitch, "Cell surface structures and T cell function."

Structure and function of MHC: L. Glimcher, discussion leader

J. Strominger, "Regulation and expression of class II MHC molecules."

H. Grey, "The interaction between immunogenic peptides and Ia."

28 July

B cell triggering: A. DeFranco, discussion leader

A. DeFranco, "Receptor signaling in B cells."

W. Paul, "B cell stimulatory factor—1/IL-4."

M. Gurney, "Role of neuroleukin in immune function."

T cell development and tolerance: J. Sprent, discussion leader

J. J. T. Owen, "Intrathymic dendritic cells and tolerance."

H. Von Boehmer, "Mechanism of T cell tolerance."

29 July

T cell receptor genes and function: P. Marrack, discussion leader

P. Marrack, "T cell tolerance and the TCR repertoire."

R. Germain, "Relationship between structure and function of the T cell receptor."

Speaker and subject to be announced.

B cell development: F. Alt, discussion leader

N. Rosenberg, "Abelson virus-transformed lymphoid cell lines as models for B cell differentiation."

F. Melchers, "B cell development and triggering."

30 July

Immunoglobulin genes: D. Baltimore, discussion leader

D. Baltimore, "Control of immunoglobulin synthesis."

C.-A. Reynaud, "Chicken lambda genes."

M. Weigert, "Diversity of autoantibodies."

DNA-protein interactions: U. Storb, discussion leader

A. Hochschild, "Interactions of lambda repressor with DNA."

S. McKnight, "Animal viruses as models for the study of mammalian gene expression."

31 July

Complement and other mediators and their receptors: G. Fey, discussion leader

G. H. Fey, "Acute phase proteins."

D. T. Fearon, "Structure and function of complement receptors."

J. V. Ravetch, "Structure and function of IgG Fc-receptors."

Implantable Auditory Prostheses

Colby-Sawyer College (S)

Robert C. Bilger, chairman; Francis Spelman, vice chairman

29 June

D. Eddington, discussion leader

B. Delgutte, "Stimulus coding in the auditory nerve."

D. Geisler, "Coding speech in the auditory nerve."

E. Javel, "Response of the auditory nerve to electrical stimulation."

R. White, discussion leader

F. Spelman, "Models for current spread."

C. Findlay, "Status of current spread in auditory prostheses."

30 June

H. Levitt, discussion leader

S. Blumstein, "Codable aspects of the speech signal."

B. Wilson, "Factors in coding speech in auditory prostheses."

L. R. Morris, "A specific strategy for encoding speech."

F. Spelman, discussion leader

C. Findlay, "Electrodes and stimulus shaping."

T. Rose, "Electrochemistry of implanted electrodes."

1 July

J. Jerger, discussion leader

R. Shannon, "Psychophysical determinants of implant performance."

N. Viemeister, "Interpretation of psychophysical results of electrical stimulation."

R. Tyler, "Clinical psychophysics."

M. E. Demorest, discussion leader

Speaker to be announced, "Neuropsychological variables and implantable auditory prostheses."

J. Knutsen, "Psychological variables and implantable prostheses."

2 July

S. Blumstein, discussion leader

L. Dent, "Interaction of visual and electrical cues."

S. Soli, "General considerations in speech perception."

J. Jerger, "Assessing speech perception in implanted patients."

E. Elkins, discussion leader

W. Rabinowitz, "Tactile aids for the deaf."

K. Kecox, "Digital signal processing for hearing aids."

3 July

J. Miller, discussion leader

J. Miller, "Auditory prostheses in the CNS."

F. O. Black, "Clinical future of auditory prostheses."

C. E. Sherrick, "The future of sensory substitution."

Inorganic Chemistry

Brewster Academy

F. A. Cotton, chairman; J. N. Armor, vice chairman

3 August

F. Basolo, discussion leader

F. Calderazzo, "Early transition elements: Low oxidation state complexes."

K. Wieghardt, "Coordination chemistry of 1,4,7-triazacyclononane and its trithia analog—two useful macrocycles."

R. A. Walton, "Structural isomerism in M_2L_{10} complexes with metal-metal bonds."

F. Basolo, discussion leader

M. F. Lappert, "Novel organic phosphorus compounds and their coordination chemistry."

A. H. Cowley, "Multiple bonding between main-group and transition elements."

4 August

J. N. Armor, discussion leader

R. Weiss, "High-valent iron and manganese porphyrin complexes."

A. Chakravorty, "Metal-azo and metal-oxime binding as tool for molecular design."

M. H. Chisholm, "Alkylidyne bridged tungsten complexes."

J. N. Armor, discussion leader

J. Lewis, "Higher nuclearity clusters and beyond."

R. D. Adams, "Ligand transformations and catalysis by metal carbonyl clusters."

5 August

R. W. Parry, discussion leader

P. Lahuerta, "Orthometallation reactions at metal-metal bonds."

B. E. Bursten, "Recent electronic structural studies of metal-metal bonded systems."

T. J. Marks, "Nonclassical organometallic chemistry at actinide centers."

R. W. Parry, discussion leader

L. A. Oro, "Rhodium complexes with binucleating nitrogen donor ligands."

J. P. Fackler, Jr., "Oxidative addition and reductive elimination in multinuclear metal complexes."

6 August

C. A. Murillo, discussion leader

W. G. Klemperer, "Molecular growth pathways in silica sol-gel polymerization."

E. M. Flanigen, "Aluminophosphate-based molecular sieves."

P. Day, "Organic-inorganic layer compounds: Novel conductors and magnets."

F. A. Cotton, discussion leader

B. F. G. Johnson, "The shape of things to come."

7 August

A. Matuszko, discussion leader

D. C. Bradley, "Organo-imido complexes of the transition metals."
 A. Muller, "New developments in transition metal sulfur chemistry."
 C. D. Garner, "Molybdenum-sulfur chemistry and its biological significance."

Atomistic Processes in Inorganic Geochemistry

Proctor Academy
 David R. Veblen and George R. Rossman, co-chairmen

17 August

C. W. Burnham, discussion leader
 E. Stolper, "Solubility mechanisms of volatiles in magmas."
 H. D. Schreiber, "Oxidation/reduction equilibria and kinetics in melts."
 D. H. Eggler, "Experimental properties of fluids."
 M. Kutz, discussion leader
 J. F. Stebbins, "Disorder and dynamics in silicate melts: NMR results."
 Poster session.

18 August

B. Hobbs, discussion leader
 A. K. Kronenberg, "Mechanisms of slip dislocations in micas."
 R. A. Yund, "Defects, deformation, and mineral kinetics."
 F. Seiffert, "Spectroscopic studies of phase transitions in melilites."
 H. P. Taylor, discussion leader
 W. A. Dollase, "Crystal chemistry of noble gases in minerals."
 T. M. Harrison, "The timing and time scales of geological processes obtained at the micro scale."

19 August

D. R. Veblen, discussion leader
 G. R. Rossman, "Incorporation of H in minerals."
 M. A. Carpenter, "Al/Si ordering contributions to thermodynamic properties in anorthite."
 B. J. Wood, "Experimental ferrous/ferric redox potentials."
 R. G. Burns, discussion leader
 M. L. Rivers, "XRF microprobe analysis of trace elements."
 Poster session.

20 August

B. J. Wuensch, discussion leader
 D. L. Kohlstedt, "Interface structures in olivine-silicate melt systems."
 G. M. Bancroft, "Surface studies of adsorption of heavy metal complexes on sulfide minerals."
 B. Hobbs, "New approaches to the study of water in quartz."
 D. M. Sherman, discussion leader
 G. A. Waychunas, "Structure and bonding via x-ray spectroscopy."
 R. A. Eggleton, "Structural aspects of weathering reactions in igneous rocks."

21 August

A. C. Lasaga, discussion leader
 A. F. White, "Redox equilibria at the rock-water interface."
 J. M. Ferry, "Infiltration-driven meta-

morphism in north-central New England."

Inorganic Thin Films and Interfaces

Plymouth State College (N)
 Bernard S. Meyerson, chairman;
 Glen Cullen, vice chairman

10 August

F. Himpsel, "Physical phenomena in thin films and interfaces."

Surface structure:

R. Hamers, "Real space imaging of surface electronic structure with the STM."
 J. A. Golovchenko, "New structures on semiconductor surfaces by STM."

11 August

Nucleation and growth:
 J. Clark, "STM studies of metal clusters at interfaces."
 M. Gibson, "In situ TEM of MBE hetero-epitaxy."

Adsorbate kinetics:

Y. Chabal, "Kinetics of adsorbates at metal vacuum interfaces by surface infrared spectroscopy."
 D. Zax, "NMR studies of simple molecules on metal surfaces."

12 August

Optical methods:
 J. Butler, "Infrared absorption spectroscopy of interfaces."
 R. Shen, "Studies of thin films and interfaces by non-linear optical techniques."
 N. Amer, "Optical and transport properties of surfaces and interfaces: a photothermal approach."

Defects:

N. Johnson, "Microscopic origin of gap states at the Si/SiO₂ interface."
 E. Poindexter, "Inherent and process induced defects in thin SiO₂ films."

13 August

Chemistry and structure of thin films:
 C. Grovenor, "Pulsed laser atom probe."
 E. Bauer, "Dynamic LEED microscopy."
 M. Henzler, "High resolution electron diffraction."

Interface modification:

T. Itoh, "Effects of U.V. light irradiation during Si film growth by MBE."

14 August

F. R. McFeely, "Synchrotron studies of selective tungsten deposition."
 Speakers and subjects to be announced.

Chemistry at Interfaces

Kimball Union Academy
 Lloyd Abrams, chairman; Curt Connor, vice chairman

Dynamic Processes Involved with Interfaces

20 July

G. Allen, discussion leader

W. Goddard, "Surface chemistry and reactions."

D. Swartzfager, "SIMS and scattered neutral examination of interfaces."

J. Vander Sande, "Electron microscopy of the solid state interface."

C. Franck, discussion leader

C. Miller, "Videomicroscopy of oil, water, and surfactant systems."

S. Ross, "Dynamic phenomena of monolayers on water."

21 July

R. Johnson, discussion leader
 J. Israelachvili, "Viscosity of liquids in thin films."

R. Johnson, "Wettability and surface conformation of polymers and monolayers."

D. Wasan, "Formation of regular periodic structures in liquid thin films."

C. Connor, discussion leader

L. White, "Electrophoretic phenomena in oscillating fields."

Poster session.

22 July

P. Kilpatrick, discussion leader
 L. Turkevich, "Theoretical and experimental description of microemulsions."

E. Kaler, "Scattering studies of microemulsion structure."

D. Langevin, "Light scattering investigation of multiphase microemulsions."

G. McIntire, discussion leader

M.-P. Pileni, "Reverse micelles: structure and reactivity."

L. Kevan, "Charge separation across surfactant interfaces."

23 July

U. Klabunde, discussion leader
 R. Ottewill, "Polymer colloids as models for colloidal dispersions."

E. Cussler, "Polymer gels as selective adsorbents."

Paul Becher, discussion leader

P. Sherman, "Protein-glyceride association at the oil/water interface."

24 July

M. Green, discussion leader
 R. Kapral, "Interfacial structure and dynamics in bistable chemical systems."

E. Rojas, "Beta cells in the pancreas: The secretion of insulin."

Ion-Containing Polymers

Colby-Sawyer College (S)
 J. S. Tan, chairman; G. Wiles, vice chairman

3 August

R. W. Lundberg, discussion leader
 W. J. Macknight, "New advances in ionomers."

R. Jerome, "Telechelic polymer blends."

M. Dominguez, "Ionenenes."

K. A. Mauritz, discussion leader

C. L. McCormick, "Ionic copolymers."

A. C. Watterson, "Ampholytic ionomers."

4 August

J. Smid, discussion leader

M. Mandel, "Polyelectrolyte solution studies."

K. Petrak, "Water-soluble interpolymer complexes."

F. Rondeley, "Polyion conformation at air/water interface."

A. Jamieson, discussion leader

T. Tanaka, "Phase transition in ionizable polymer gels."

R. K. Prud'homme, "Gelation of water-soluble polymers induced by metal ions."

5 August

B. Dreyfus, discussion leader
 A. J. Hopfinger, "Molecular modeling of the cluster structure of ionomers."

S. L. Copper, "Ionic aggregation and morphology of ionomers."

Poster presentations.

V. MacBrierty, discussion leader
 A. Eisenberg, "Compatibility in ionomer blends."

A. Natansohn, "Structural investigation of ionomers by NMR."

6 August

M. Coey, discussion leader
 R. A. Weiss, "Structure and properties of sulfonated polystyrene ionomers."

G. Boiteux, "Dielectric studies of ion-containing polymers."

Poster presentations.

G. Wilkes, discussion leader
 R. Zallen, "Percolation theory."

7 August

C. Martin, discussion leader
 M. Pineri, "Structure of reconstructed perfluorinated ionomer membranes."

W. M. Risen, "Chemistry in transition and rare earth metal-containing ionomers."

Physics and Chemistry of Laser Diagnostics in Combustion

Plymouth State College (N)
 Ronald K. Hanson, chairman;
 Richard K. Chang, vice chairman

13 July

D. R. Crosley, discussion leader
 D. R. Crosley, "Fluorescence spectroscopy—quenching."

J. McDonald, "Fluorescence spectroscopy—overview."

K. Kohse-Hoinghaus, "Fluorescence spectroscopy—multiphoton excitation."

R. Teets, discussion leader
 A. Eckbreth, "CARS—equilibrium."

J. Valentini, "CARS—nonequilibrium."

14 July

M. Lapp, discussion leader
 R. P. van Duyne, "Surface/particulate diagnostics."

D. Ottesen, "Surface/particulate diagnostics."

R. Chang, "Surface/particulate diagnostics."

R. J. Cattolica, discussion leader

M. B. Long, "Multidimensional imaging."

R. K. Hanson, "Multidimensional imaging."

15 July

N. Laurendeau, discussion leader
J. Goldsmith, "Photochemical effects and strategies."

R. Oldenborg, "Photochemical effects and strategies."

A. Miziolek, "Photochemical effects and strategies."

J. W. Daily, discussion leader

A. Garscadden, "Plasma measurements."

S. Chu, "Atom trapping."

16 July

D. Greenhalgh, discussion leader
S. O'Leary, "Nonlinear spectroscopy."

L. Rahn, "Nonlinear spectroscopy."

M. Pealat, "Nonlinear spectroscopy."

R. Miles, discussion leader

L. Goss, "Flowfield imaging."

R. Dibble, "Flowfield imaging."

17 July

T. Cool, discussion leader

G. King, "ASOPS."

J. Sell, "Photothermal deflection velocimetry."

R. Exton, "Raman velocimetry."

Lipid Metabolism

Kimball Union Academy

Dennis E. Vance, chairman;
George H. Rothblat, vice chairman

29 June

S. Tove, discussion leader

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

A. Goodridge, "Structure and regulation of genes coding for enzymes involved in fatty acid synthesis."

S. Wakil, "Fatty acid synthase."

G. Carman, discussion leader

S. Yamashita, "Genes involved in the phosphatidylethanolamine methylation pathway in yeast."

K. Bloch, "Sterol effects on phospholipid biosynthesis."

30 June

F. Snyder, discussion leader

C. Rock, "Regulation of phosphatidylinositol-4, 5-P₂ phospholipase C."

B. Smith, "Prostaglandin receptors and guanine nucleotide regulatory proteins."

B. Walner, "Lipocortins, a family of phospholipase A₂ inhibitory proteins involved in signal transduction."

C. Raetz, discussion leader

B. Dowhan, "The regulation of the phospholipid composition of the *Escherichia coli* membrane."

P. Weinhold, "The molecular and regulatory properties of CTP: Phosphocholine cytidyltransferase."

1 July

K. Bloch, discussion leader

G. Gil, "Transcriptional regulation of cholesterol regulated genes."

M. Sinensky, "Endogenously synthesized regulators of cellular cholesterol synthesis."

P. Edwards, "Coordinate regulation of enzymes involved in cholesterol biosynthesis."

D. Weinstein, discussion leader

D. Brindley, "Regulation of the synthesis and secretion of triacylglycerols and phosphatidylcholine by the liver."

R. Davis, "Regulation of VLDL assembly and secretion."

2 July

K. Wirtz, discussion leader

M. Dempsey, "Regulation of lipid metabolism by a major lipid transport protein."

D. Voelker, "Biochemical and genetic approaches to study lipid assembly into mammalian cell membranes."

B. Glick, "A novel role for fatty acid chains in intracellular protein transport."

C. Sweeley, discussion leader

A. Merrill, "Control of sphingosine metabolism and implications for regulation of protein kinase C."

M. Spence, "Phospholipid catabolism in mammalian tissues."

3 July

M. Waite, discussion leader

D. de Kruijff, "Lipid-protein interactions and its implications for protein translocation across membranes."

E. Olson, "Biosynthesis of fatty acid acylated proteins."

E. Dennis, "Phospholipase A₂ mechanism and control at the membrane interface."

Liposomes and Other Organized Lipid Assemblies Colby-Sawyer College (S)

R. L. Juliano, chairman; Steve Regen, vice chairman

13 July

Monolayers and Langmuir-Blodgett films: S. Regen, chairman

H. McConnell, J. Lando, N. Arnett.

Polymerized lipid assemblies: J. Fendler, chairman

H. Ringsdorf, D. Tirrell, F. Evans.

14 July

Membrane fusion: D. Papahadjopoulos, chairman

J. Wilschut, J. Lear.

Mechanisms of lipid transfer: L. Dawidowicz, chairman

R. Pagano, Y. Lange, G. Helmkamp.

15 July

Immunological aspects of liposomes: C. Alving, chairman

A. Janoff, D. Stollar, H. Muller Eberhard.

Applications of lipid membranes to biotechnology: J. Schnur, chairman
M. Farmer, P. Shoen, L. Huang.

16 July

Pharmacological actions of lipids: D. Hanahan, chairman

C. Loomis, M. Billah, S. Prescott.

Liposomes as drug delivery systems: G. Mayhew, chairman

F. Szoka, G. Gregoriadis.

17 July

Liposomes as drug delivery systems:

R. Juliano, chairman

A limited number of posters will be welcomed.

Liquid Crystals

Brewster Academy

R. Pindak, chairman; A. Griffin, vice chairman

22 June

Interfaces: P. Pershan, discussion leader

J. Als-Nielsen, "Synchrotron x-ray studies of liquid crystals."

B. Ocko, "Layering at liquid surfaces."

M. Seul, "Staging and molecular ordering in thin lyotropic films."

Ferroelectrics: N. Clark, discussion leader

D. Walba, "Design of high-performance ferroelectric liquid crystals."

H. Takezoe, "Switching processes in surface stabilized ferroelectric liquid crystal cells."

23 June

Lyotropic polymers: discussion leader to be announced

R. Meyer, "Elastic and viscous properties of lyotropic nematic polymers."

H. Lekkerkerker, "Evidence for order in one, two, and three dimensions in a fluid of hard parallel spherocylinders."

M. Kuzma, "Transient periodic structures in lyotropic nematics."

Non-linear optics: M. Lee, discussion leader

S. Hsiung, "Surface polar ordering in a liquid crystal probed by optical second harmonic generation."

E. Santamato, "Polarization-induced nonlinear optical effects in liquid crystals."

24 June

Liquid crystal polymers: E. Samulski, discussion leader

M. Warner, "Defects in the molecular configurations of nematic and smectic polymer liquid crystals."

T. Odijk, "The influence of chain semi-flexibility on the properties of polymer liquid crystals."

R. Zentel, "Interrelation between polymer chains and mesogenic groups in crosslinked liquid crystalline polymers."

Instabilities: discussion leader to be announced

L. Kramer, "Convective instabilities in nematic liquid crystals."

S. Kai, "Pattern formation processes in electrohydrodynamics in nematic liquid crystals."

25 June

Lyotropics: D. Litster, discussion leader

S. Gruner, "Stability in curved lyotropic mesophases."

J. Seddon, "Structural studies of phospholipid related lyotropic mesophases."

D. Roux, "Interactions in dilute lamellar phases."

Fluctuations and defects: discussion leader to be announced

S. Leibler, "Recent results on phase transitions in lyotropic liquid crystal systems."

J. Sethna, "Ripples, boojums and the blue phases."

26 June

Phase transitions: discussion leader to be announced

J. Thoen, "Adiabatic scanning calorimetry studies of liquid crystalline phase transitions."

J. Brock, "Hexatic order and harmonic scaling in liquid crystal films."

C. C. Huang, "Heat-capacity, tilt-angle and polarization measurements at the smectic-A-chiral-smectic-C transition."

Physics and Chemistry of Liquids

Holderness School

David Chandler, chairman; Sandra Greer, vice chairman

10 August

Liquids in transition to crystalline and noncrystalline solids: H. C. Andersen, discussion leader

A. Haymet, T. Kirkpatrick, S. Nagel, C. A. Angell.

Interfaces and surfaces: J. Gollub, discussion leader

H. Cummins, S. Leibler.

11 August

Fluids far from equilibrium: G. Ahlers, discussion leader

L. Kadanoff, J. A. Libchaber, J. Weeks.

Surfaces and monolayers: S. Safran, discussion leader

D. Nelson, C. Knobler.

12 August

Chemical dynamics in liquids: R. Harris, discussion leader

P. Wolynes, B. Berne, A. Zewail.

Short talks and discussion of posters.

13 August

Electrons in liquids: M. Parrinello, discussion leader

M. Klein, D. Logan, P. Edwards.

Interfaces: E. Evans, discussion leader

G. Richmond, J. Israelachvili.

14 August

Polymeric fluids: M. Fixman, discussion leader

K. Schweizer, G. Fredrickson, C. Han.

Magnetic Resonance

Brewster Academy

Constantino S. Yannoni, chairman;
W. Gilbert Clark, vice chairman

15 June

M. Mehring, "Sublevel coherence spectroscopy."

H. M. Vieth, "Dynamics of photoprocesses in molecular crystals by nanosecond time-resolved optical nuclear polarization."

K. Zilm, "Solid-state NMR methods for studying matrix isolation photochemistry."

R. M. Shelby, "Generation of squeezed light and quantum non-demolition detection in optical fibers."

E. L. Hahn, "Nuclear electric quadrupole induction of atomic polarization."

16 June

A. Schweiger, "New techniques in pulsed ESR spectroscopy."

K. P. Dinse, "Ultimate time resolution in ESR with stochastic excitation."

J. H. Freed, J. Gorcoster, "Two-dimensional ESR and molecular dynamics."

E. Lippmaa, "High resolution MAS-NMR of quadrupolar nuclei."

A. Pines, "Berry's phase in magnetic resonance."

17 June

D. L. VanderHart, "Natural abundance ^{13}C - ^{13}C spin exchange in solids."

H. W. Spiess, "2D-NMR methods for studying structure and dynamics of solid polymers."

T. Terao, "One- and two-dimensional powder patterns in rotating solids."

R. F. Haglund, Jr., "Probing surface structure and dynamics with nuclear-spin-polarized atomic beams."

W. S. Warren, "Effects of crafted pulse shapes in laser and NMR spectroscopies."

18 June

F. Noack, "Relaxation dispersion and zero field spectroscopy in liquid crystals by electronic field cycling."

C. P. Slichter, "The structure and motion of charge density waves in NbSe₃."

H. Thomann, "Transport models in polyacetylene: insights from new magnetic resonance experiments."

M. Bloom, "The complete proton NMR spectrum of whole cells."

D. Weitekamp, "Nuclear spin statistics: a new handle on NMR sensitivity."

19 June

J. S. Waugh, "A chemist's view of NMR spectra and relaxation below 1 K."

G. Bodenhausen, "Some implications of relaxation on coherence transfer."

A. Bax, "Homonuclear Hartman-Hahn effects among protons in isotropic liquids."

Mammary Gland Biology

Colby-Sawyer College (S)

Barbara K. Vonderhaar, chairman; Ian H. Mather, vice chairman

15 June

Cell matrices and differentiation in mammary gland: B. B. Asch, chairman

W. R. Allen, "Cell types and development in the rodent mammary gland."

J. Emerman, "Glycosaminoglycan synthesis by human mammary epithelial cells in primary culture."

A. C. Rapraeger, "Plasma membrane

proteoglycans of the mammary epithelial cell: Anchorage to the cytoskeleton at the basal cell surface."

M. S. Wicha, "Modulation of mammary gene expression by extracellular matrix components and the cytoskeleton."

Cell-cell interactions: S. Z. Haslam, chairman

F. Stockdale, "Epithelial-adipose interactions in mammary gland morphogenesis and differentiation."

T. Sakakura, "Molecular mechanisms of reciprocal interactions between epithelium and mesenchyme."

16 June

Gene expression: L. Hennighausen, chairman

J. M. Rosen, "Cis-acting DNA sequences required for the regulation of milk protein gene expression analyzed by gene transfer into cells and transgenic mice."

R. K. Craig, "Organization, sequence and regulation of the human and guinea pig alpha-lactalbumin genes."

B. Groner, "Interference of oncogenes with hormonally regulated gene expression."

J. Bishop, "Gene expression in transgenic mice."

Glycoconjugates on the cell surface: I. K. Vijay, chairman

H. Schachter, "Control of glycoprotein synthesis."

M. Abe, "Purification and characterization of the DF-3 and related antigens on human breast cells."

17 June

MMTV and oncogenes: R. Callahan, chairman

A. Sonnenberg, "Oncogene expression during progression of mouse mammary tumor cell in vitro."

G. Martin, "Expression of the int-2 gene in teratocarcinoma cells and developing mouse embryos."

I. Tepler, "Breast tumors in transgenic mice."

Immunology of the mammary gland and its secretions: M. E. Lamm, chairman

E. Butcher, "Molecular mechanisms of leucocyte homing to exocrine sites."

S. Kohl, "Immunological agents in milk—cells and humoral factors."

18 June

Nutritional aspects of mammary development and function: C. Ip, chairman

D. Bauman, "Regulation of nutrient partitioning: role of somatotropin."

C. Knight, "Metabolic adaptation in mammary tissue during pregnancy and lactation."

A. Prentice, "Mammary function in undernourished Gambian women."

M. Farquhar, "Membrane trafficking in secretory systems."

19 June

Cellular "factors" in mammary development and tumorigenesis: D. Solomon, chairman

M. Lippman, "Growth regulation of human breast cancer."

V. Rocha, "Novel calcium binding

proteins and mammary epithelial cell motility."

Informal workshops and poster sessions will be scheduled.

Mechanisms of Toxicity

Kimball Union Academy

Seven D. Aust, chairman; John A. Thomas, vice chairman

27 July

R. Snyder, discussion leader

R. D. Irons, "Bone marrow toxicities with emphasis on mechanism of action of butadiene."

G. F. Kalf, "Studies on benzene toxicity."

G. Witz, "Muconaldehyde, an open ring hematotoxin metabolite of benzene."

R. Snyder, discussion leader

A. A. Yunis, "Mechanism of chloramphenicol hematotoxicity."

B. D. Goldstein, "Future directions for research on bone marrow toxicity."

28 July

W. O. Berndt, discussion leader

W. O. Berndt, "Problems in nephrotoxicity."

M. L. Taub, "Tissue culture and nephrotoxicity."

P. Kostyniak, "Role of glutathione in metal renal toxicity and excretion of metals."

W. O. Berndt, discussion leader

P. B. Williams, "Membrane interactions of aminoglycosides as related to nephrotoxicity."

T. V. Zenser, "Prostaglandins synthetase and nephrotoxic mechanisms."

29 July

J. K. Reddy, discussion leader

J. K. Reddy, "Peroxisomal proliferations."

P. B. Lazarow, "Function and biogenesis of peroxisomes."

J. A. Popp, "Initiation-promotion of carcinogenesis by peroxisome proliferators."

J. K. Reddy, discussion leader

C. R. Elcombe, "In vitro induction of peroxisomes."

B. D. Hammock, "Hydrolytic enzyme induction by peroxisome proliferators."

30 July

C. C. Reddy, discussion leader

C.-P. D. Tu, "The glutathione S-transferase supergene family."

I. Listowsky, "Structure and transport properties of glutathione S-transferases."

C. C. Reddy, "Leukotrienes: A new class of glutathione conjugates implicated in the toxicity of atmospheric oxidant gases."

S. D. Aust, discussion leader

H. Remmer, "The risks associated with side stream smoke."

31 July

J. A. Thomas, discussion leader

P. B. McCay, "Glutathione and lipid peroxidation."

T. F. Slater, "Glutathione, free radicals and cancer."

P. J. O'Brien, "Interactions of peroxides and xenobiotic free radicals with glutathione."

Medicinal Chemistry

Colby-Sawyer College (N)

Barrie Hesp, chairman; William F. Johns, vice chairman

3 August

Ion channels as targets for drug design: D. Triggie, discussion leader

M. Welsh, "Chloride channels and secretory events."

T. Hamilton, "Potassium channels and smooth muscle."

M. Lazdunski, "Ion channels, endogenous ligands and disease states."

Neurodegenerative diseases: J. Yevitch, discussion leader

P. Davies, "Degenerative neurological diseases producing dementia."

C. Dreyfus, "Nerve growth factor and neuron function in basal forebrain cultures."

E. Meyer, "Presynaptic and postsynaptic approaches to Alzheimer's disease."

4 August

Leukotriene antagonists and lipoxygenase inhibitors: A. W. Ford-Hutchinson, discussion leader

Y. Guindon, "Development of 5-lipoxygenase inhibitors and leukotriene D₄ receptor antagonists."

S. Crooke, "Studies on leukotriene transduction processes and 5-lipoxygenase."

D. Aharony, "Mechanistic studies on 5-lipoxygenase: Characterization of leukotriene D₄ receptor sites."

Platelet activating factor and its antagonists: L. M. McManus, discussion leader

B. Vargaftig, "Biology of PAF."

T.-C. Lee, "Metabolism of PAF."

R. N. Saunders, "PAF antagonists."

5 August

Plasminogen activators and inhibitors: D. Loskutoff, discussion leader

D. Rifkin, "Fibrinolysis in angiogenesis."

F. Blasi, "Cellular receptors for urokinase."

H. Pannekoek, "Tissue plasminogen activator mutants."

Advances in the treatment of pain: S. Ward, discussion leader

L. Steranka, "Bradykinin and pain transmission in the periphery."

A. Dray, "Excitatory amino acids and pain transmission in the CNS."

S. Ward, "Win 48098, a new analgesic."

6 August

Advances in antiviral therapy: P. Furman, discussion leader

T. Spector, "Antiviral therapy."

T. Smith, "The structure of the protein coat of rhinoviruses."

E. Yarchoans, "Treatment of AIDS."

B. Hesp, discussion leader

Speaker and subject to be announced.

7 August

Special topics in medicinal chemistry: W. F. Michne, discussion leader

Speakers and subjects to be announced.

Two poster sessions will be held during the Conference. Persons wishing to present posters should contact Dr. W. Michne, Sterling-Winthrop Research Institute, 81 Columbia Turnpike, Rensselaer, NY 12144.

Membrane Transport Phenomena

Holderness School

Qais Al-Awqati, chairman; Christopher Miller, vice chairman

27 July

Structure of membrane proteins: W. Hendrickson, chairman

W. Hendrickson, "Crystal structure of gramicidin."

A. Karlin, "Structure-function relations of the nicotinic acetyl choline receptor."

D. McKay, "Crystal structure of bacterial toxins."

J. Deisenhofer, "Structure of light harvesting center of *Rhodospseudomonas*."

Ion pumps: P. Lauger, chairman

H.-P. Appell, "Fast charge translocations associated with partial reactions of the Na,K, ATPase."

D. MacLennan, "Cloning and genetics of the Ca ATPase."

S. Gluck, "Cell biology and biochemistry of proton ATPase of the kidney."

28 July

Signal transduction: L. Cantley, chairman

P. Rosoff, "Regulation of ion transport in T lymphocytes."

A. Saltiel, "Second messengers induced by insulin."

R. Huganir, "Regulation of the nicotinic acetyl choline receptor by protein phosphorylation."

Ion channels: C. F. Stevens, chairman

C. F. Stevens, "Kinetics of the voltage-gated Na channel."

B. Hille, "Role of G proteins in regulation of channel kinetics."

O. S. Andersen, "Site-specific amino acid substitution in a membrane channel."

29 July

Organelle movement and exocytosis: W. Almers, chairman

W. Almers, "Final events in exocytosis observed cells with giant secretory vesicles."

M. Sheetz, "Motors for organelle transport."

Sensory reception:

K.-W. Yau, "Role of cyclic GMP in visual transduction."

V. Dionne, "Electrophysiology of olfactory cells."

M. Akabas, "Electrophysiology of taste cells."

30 July

Molecular biology of transport proteins: H. Lodish, chairman

H. Lodish, "Glucose carrier."

R. Kapito, "Cell and molecular biology of band 3."

W. Stuhmer, "Genetic engineering of Na channels."

Genesis of epithelial polarity: E. Rodriguez-Boulton, chairman

E. Rodriguez-Boulton, "Genesis of epithelial polarity."

K. Mostov, "Sorting of the polymeric IgA receptor in epithelia."

31 July

Mechanisms of memory:

W. G. Quinn, "Memory and amnesia in *Drosophila*."

P. Goelet, "Proteins that code for memory in *Aplysia*."

S. Siegelbaum, "Regulation of channel conductance by protein kinases during learning."

Metal Hydrides

Tilton School

R. G. Barnes, chairman; F. D. Manchester, vice chairman

13 July

R. W. Stulen, discussion leader

J. L. Erskine, "Experimental studies of the interaction of hydrogen with niobium surfaces."

F. P. Netzer, "Initial stages of hydride formation."

R. Griessen, "Local semi-empirical band structure model for the heat of solution, molar volume and site occupancy of hydrogen in metals."

R. Schoellhorn, "Hydrogen bronzes and electron/proton transfer reactions in inorganic solids."

14 July

D. T. Peterson, discussion leader

R. Feenstra, "Thermodynamical properties of hydrogen in Nb-V and Nb-Mo solid solutions."

O. Buck, "Internal friction due to hydrogen in solid solution in refractory alloys."

I. Svare, "Simple theory for hydrogen tunneling in metals."

J. Rush, "Recent neutron spectroscopic studies of low levels of hydrogen dissolved and trapped in metals."

15 July

R. G. Leisure, "Ultrasonic absorption in PdH_x."

D. K. Ross, "Growth kinetics of ordered domains of PdD_{0.65} at 50 K."

R. M. Cottis, discussion leader

E. F. W. Seymour, "Dynamical evidence for a change in hydrogen diffusion behavior at high temperatures."

P. M. Richards, "Anomalous proton hopping at high temperatures."

16 July

G. G. Libowitz, discussion leader

L. Schlapbach, "Rare-earth hydrides at low temperatures: What a chaos!"

J. Shinar, "Resistivity measurements

and electronic structure of light rare-earth hydrides."

R. R. Arons, "Magnetic order and crystalline electric field excitations in rare-earth deuterides."

17 July

J. J. Reilly, discussion leader

M. Gupta, "Present status of electronic structure of intermetallic hydrides."

M. Post, "Reaction calorimetry of Mg₂, Ni, and LaNi₅ hydrides and the observation of small energy and composition effects."

P. Dantzer, "Thermodynamic models for analyzing the performance of hydride chemical engines."

Metals and Semiconductor Clusters

Holderness School

R. E. Smalley, chairman; P. Montano, vice chairman

3 August

A. Kaldor, discussion leader

B. S. Freiser, "FT-ICR studies of metal cluster chemistry and photophysics."

M. S. Mandich, "FT-ICR studies of semiconductor clusters."

K. Ragavachari, "Structure and reactions of silicon and carbon clusters."

D. R. Salahub, discussion leader

R. Car, "Equilibrium and dynamical properties of small metal clusters."

R. L. Whetten, "Electronic and magnetic properties of metal clusters."

4 August

Discussion leader to be announced

S. J. Reilly, "Chemical reactions of transition metal clusters."

D. M. Cox, "Chemical and spectral probes of clusters."

D. R. Salahub, "Transition metal clusters and their interactions with atoms and molecules."

W. L. Brown, discussion leader

J. G. Pruett, "Clusters for thin film deposition."

W. Schultze, "Study of metal clusters using the gas aggregation technique."

5 August

Discussion leader to be announced

S. L. Anderson, "Cluster studies with an RF-ion guide."

T. H. Upton, "Calculations of small aluminum clusters."

L. Woste, "Metal cluster ion beams."

G. K. Shenoi, discussion leader

M. Moskovits, "Metal clusters in matrices."

K. Sattler, "STM of metal clusters."

6 August

F. Y. Freidin, discussion leader

W. L. Brown, "Clusters: Solid state physics and material science."

P. R. Okamoto, "Preparation of cluster materials."

J. C. Phillips, "Structure and reactivity of clusters."

R. E. Smalley, discussion leader

W. A. Goddard, "Cluster theory."

C. W. Bauschlicher, "Structure and chemistry of small metal clusters."

7 August

W. A. Goddard, discussion leader

O. Cheshnovsky, "UPS with pulsed negative cluster beams."

P. H. Citrin, "Photoemission from supported clusters: The problem of the support."

W. C. Lineberger, "PES of metal clusters."

Molecular Aspects of Methanogenesis

New Hampton School

James G. Ferry, chairman; Jordan Konisky, vice chairman

29 June

G. Vogels, discussion leader

R. S. Wolfe, "Reduction of carbon dioxide to methane."

R. K. Thauer, "Cofactors of methanogenesis."

R. White, "Biosynthesis of coenzymes and cofactors."

T. Stadtman, discussion leader

G. Vogels, "Energy consumption and production."

J. Ferry, "Formate and acetate utilization."

30 June

L. Daniels, discussion leader

G. Fuchs, "Biochemistry of acetyl CoA synthesis."

M. F. Roberts, "C and N assimilation monitored by NMR."

D. E. Fahrney, "The cyclic-2, 3-di-phosphoglycerate cycle."

K. Jarrell, discussion leader

G. Gottschalk, "Significance of transmembrane H⁺ and Na⁺ gradients."

J. Lancaster, "Schemes of free energy transduction."

P. Schönheit, "Energy metabolism."

D. Sprott, "Nickel uptake and incorporation."

1 July

J. Harris, discussion leader

J. Konisky, "Regulation of methanogen genes."

T. Leisinger, "Approaches to genetic exchanges."

A. Klein, "Structural genes."

R. Gunsalus, discussion leader

J. Reeve, "Methanogen genes."

A. Bock, "Transcription of stable genes."

M. Thomm, "RNA polymerase."

2 July

R. Thauer, discussion leader

C. T. Walsh, "Mechanistic studies on nickel-containing enzymes."

S. Albracht, "Transition metals in key enzymes."

L. Mortenson, "Hydrogenase mechanisms."

J. Ferry, discussion leader

F. Mayer, "Structure-function revealed by electron microscopy."

R. S. Wolfe, Special lecture.

3 July

- C. Woese, discussion leader
W. Orme-Johnson, "Properties of metal centers."
G. Diekert, "Energy metabolism of acetogens."
K. Stetter, "New archaeobacteria."
P. Palm, "Gene expression in archaeobacterial virus-host systems."

Micellar and Macromolecular Catalysis

Plymouth State College (S)

- F. M. Menger, chairman; D. F. O'Brien, vice chairman

6 July

- D. F. O'Brien, discussion leader
L. J. Mathias, "Supernucleophilic polymer catalysts and inverse phase transfer catalysis."
J. Smid, "Binding properties of immobilized linear and macrocyclic polyethers."
T. W. Smith, "Complexation reactions of macromolecular ionophores."
T. Kunitake, discussion leader
Y. Hui, "Open chain inclusion complexes based on amylose."
Y. Okahata, "Lipid bilayer-corked capsule membranes. Reversible signal-receptive permeation control."
D. A. Tomalia, "Starburst dendrimers: Covalently fixed unimolecular assemblies reminiscent of spherical micelles."

7 July

- A. Lattes, discussion leader
H.-J. Schneider, "Macrocyclic catalysis: Some problems, prerequisites, and promises."
P. Luisi, "Enzyme activity in reverse micelles."
M. Roberts, "Short-chain lecithin micelles: Useful models for understanding biomembranes."
B. Robinson, discussion leader
J. Hayter, "The rough micelle and other structures."
F. D. Evans, "Structure of microemulsions."
Y. Talmon, "Low temperature transmission electron microscopy of surfactant and macromolecular aggregates."

8 July

- Z. A. Schelly, discussion leader
J. N. Demas, "Interactions of transition metal photosensitizers with organized media."
N. J. Turro, "Photochemical and photophysical probes of micellar structure and dynamics."
L. Kevan, "Photochemical charge separation in micelles and vesicles studied by electromagnetic resonance methods."
F. M. Menger, discussion leader
R. M. Kellogg, "Synthetic decapeptides: design, synthesis, and properties."
R. Weiss, "Photochemistry in the smectic-like gel phase."
J. Rebek, "Molecular recognition."

9 July

- D. Whitten, discussion leader
J. Sagiv, "Surface engineering using self-assembling monolayers."
H. Mohwald, "New developments in monolayer chemistry."
R. A. Mackay, "Reactions in amphiphile solutions of high O/W interfacial area."
Mini-symposium on reactions: L. Romsted, discussion leader
R. A. McClelland, "Electrophilic addition reactions as a probe of micelle and bilayer structure."
H. Chaimovich, "Reaction mechanisms and reaction sites in micelles and vesicles."
B. Clark, "Micellar induced selectivity in the acid-catalyzed cyclization and rearrangement of monoterpenes."
G. Savelli, "Reactivity in microaggregates."
J.-H. Fuhrhop, "Chiral bilayer effect."

10 July

- Minisymposium on reactions: G. Gokel, discussion leader
F. P. Schmidtchen, "Molecular catalysis by quaternary artificial receptors."
L. Echegoyen, "Vesicles of steroidal lariat ethers."
G. Cerichelli, "Bromination reactions in micelles."
E. Lissi, "Photoprocesses in inverted micelles: Dependence on solute localization."
M.-P. Pileni, "Photoelectron transfer from chlorophyll to viologens in reverse micelles."

Molecular and Genetic Basis of Cell Proliferation

Kimball Union Academy

- Claudio Basilico, chairman; W. J. Pledger, vice chairman

13 July

- Control of cell cycle progression: C. Basilico, discussion leader
S. Reed, "Control of cell proliferation in yeast."
A. Pardee, "Events leading to S-phase."
C. Stiles, "The role of inducible genes in control of cell proliferation."
Regulation of gene expression in the cell cycle: R. Baserga, discussion leader
D. T. Denhardt, "Changes in expression of cell cycle-regulated genes during immortalization of mouse embryo cells."
L. Lau, "Coordinate regulation of *c-fos* and a set of growth-related genes."
N. Heintz, "Factors regulating histone gene transcription during the cell cycle."

14 July

- Hormonal regulation of growth: W. J. Pledger, discussion leader
D. Clemmons, "Regulation of insulin-like growth factor-I actions by its binding protein."
H. Moses, "Type beta transforming growth factors."
R. Derynk, "The biology of transform-

ing growth factor alpha."

- Regulation of angiogenesis: D. Rifkin, discussion leader
A. Sommer, "Properties of human basic fibroblast growth factor."
J. Fiddes, "Structure and expression of the genes encoding the angiogenic growth factors, basic and acidic FGF."

15 July

- Hematopoietic growth factors: R. Stanley, discussion leader
K. Smith, "The interleukin-2 receptor interaction: Structure-function relationships."
J. N. Ihle, "Interleukin-3 and proto-oncogenes in the growth and differentiation of hematopoietic cells."
J. Gasson, "Human granulocyte-macrophage colony-stimulating factor."
Receptors: A. Ullrich, discussion leader
R. Evans, "Steroid and thyroid hormone receptors."
W. Greene, "The molecular biology of the human IL-2 receptor."
J. Schlessinger, "Structure-function analysis of the EGF receptor proto-oncogene product."

16 July

- Oncogenes regulating cell proliferation: I. M. Verma, discussion leader
R. Weinberg, "The retinoblastoma oncogene."
J. Feramisco, "The role of the ras protein in proliferation and differentiation."
R. Eisenman, "Proteins encoded by the *c-myc* oncogene."
Control of neoplastic cell proliferation: R. Dalla-Favera, discussion leader
C. Sherr, "Transforming potential of the CSF-1 receptor (*fms* oncogene)."
J. Minna, "Genes regulating lung cancer growth."

17 July

- Regulation of mitosis and meiosis: P. N. Rao, discussion leader
J. L. Maller, "Regulation of mitotic events in cell-free extracts."
L. Gerace, subject to be announced.

Molecular Genetics

Salve Regina College

- Stuart H. Orkin, chairman; Shirley Tilghman, vice chairman

10 August

- Linkage analysis, chromosomal mapping and cloning:
D. Botstein, R. White, C. Smith, F. Collins, R. Davis.
Sex chromosomes:
D. Page, L. Shapiro.

11 August

- Applications to genetic disease:
L. Kunkel, "DMD."
S. Orkin, "CGD."
S. Friend, "Rb."
R. Williamson, H. Donis-Keller, CF Workshop.

- J. Goldstein, "Hypercholesterolemia."
J. Gusella, "Huntington disease."
Regulation of gene expression:
R. Evans, R. Roeder, J. Kadonaga.

12 August

- Germline transfer:
F. Constantini, H. Westphal, P. Leder, M. Evans.
Development:
F. Ruddle, W. Gehring, I. Greenwald, D. Solter.

13 August

- Oncogenes:
M. Wigler, F. Alt, O. Witte.
Recombination:
O. Smithies, M. Capecchi, R. Kucherlapati, S. Goff.

14 August

- Somatic gene therapy workshop.

Molecular Mechanisms of Microbial Adhesion

Salve Regina College

- R. J. Doyle and I. Ofek, co-chairmen

27 July

- Lectin-glycoconjugate interactions in bacterial adhesion to mucosal tissue:
D. Savage, discussion leader
I. Ofek, "Role of mannose-specific type 1 fimbriae in infection."
C. Svanborg-Eden, "P-fimbriae and attachment of *Escherichia coli*."
R. Isaacson, "Structure and function of the *E. coli* 987P pilus adhesin."
I. Kahane, "Mycoplasma adhesion to host cells and tissues."
Role of fibronectin in adhesion to mucosal tissue: E. Beachey, discussion leader
J. Baseman, "Adhesins of the syphilis spirochete recognize the fibronectin cell binding domain."
A. Simpson, "Role of fibronectin in the adhesion of streptococci."

28 July

- Adhesive events preceding phagocytosis and invasion into animal cells:
N. Sharon, discussion leader
F. Silverblatt, "Metabolic response of PMN leukocytes to stimulation by type 1 pili."
D. Speert, "Nonopsonic recognition of *Pseudomonas aeruginosa* by human phagocytic cells."
M. Koomey, "Role of pili in the penetration of mucosal cells by *Neisseria gonorrhoeae*."
T. Hale, "Genetic, biochemical, and immunological studies of the enteroinvasive phenotype in *Shigella spp.*"
Adhesins of parasites and other eucaryotes: M. Pereira, discussion leader
D. Mirelman, "Amoeba-bacteria relationships in amebiasis."
L. Douglas, "Adhesion of *Candida albicans* to mucosal surfaces."

29 July

- Molecular biology of fimbrial and fi-

brillar adhesins: J. Swanson, discussion leader

B. Eisenstein, "Biology of type 1 fimbriae expression in *Escherichia coli*."
H. Seifert, "Regulation of gonococcal pilin expression and the role of pilus in bacterial adhesion."

R. Curtiss, III, "Role of surface protein antigen A and dextranase in *Streptococcus mutans* colonization."

B. Uhlin, "Regulation of pilus-adhesin expression in *E. coli*."

Adhesins of oral bacteria: R. Gibbons, discussion leader

P. Fives-Taylor, "Fimbriae-mediated adhesion of *Streptococcus sanguis*."

P. Kolenbrander, "Adhesins of oral *Bacteroides* and *Capnocytophaga*."

30 July

Bacterial surface architecture and adhesion in aquatic environments: M. Fletcher, discussion leader

S. Kjelleberg, "Bacterial adhesion and alterations in surface components during the transient phase between growth and nongrowth."

M. Shilo, "Cell surface modulation in benthic cyanobacteria."

K. Marshall, "Reversible and irreversible adhesion to inert surfaces—are these meaningless concepts?"

R. Irvin, "Contribution of pili and capsule to the adhesion of *Pseudomonas aeruginosa* to submerged steel surfaces."

Adhesion and the hydrophobic effect: E. Rosenberg, discussion leader

T. Wadstrom, "Role of hydrophobicity of pathogens colonizing open wounds and other tissue trauma."

M. Rosenberg, "Hydrophobins and hydrophilins of Gram-negative bacteria."

31 July

Molecular aspects of bacterial adhesion to plants, soils, clays and metals: R. Mitchell, discussion leader

F. Dazzo, "Attachment of *Rhizobium trifolii* to white clover root hairs."

E. Bayer, "The cellulosome of *Clostridium thermocellum*."

G. Stotzky, "Microbial adhesion to clay and minerals."

A. Matthyse, "Attachment of *Agrobacterium* to plant host cells."

Molecular Membrane Biology

Proctor Academy

Randy Schekman and William Wickner, co-chairmen; Harvey Lodish, vice chairman

6 July

Membrane protein structure: D. Eisenberg, chairman

H. Michel, D. Rees, L. Gierasch, J. Hogle.

Cell-cell interaction:

I. Weissman, P. Wasserman, E. Hafen.

7 July

Receptors: J. Goldstein, chairman
M. Brown, R. Hynes, K. Mostov, T. Stevens, P. Lobel.

Permeases and channels: R. Kaback, chairman

H. Lodish, D. Forbes.

8 July

Protein translocation—mechanism: W. Wickner, chairman

W. Neupert, P. Walter, D. Meyer, L. Randall, R. Gilmore.

Protein Translocation—signals: G. Blobel, chairman

C. Kaiser, S. Emr, M. Eilers, R. Zimmerman.

9 July

Organelle fusion and fission: G. Palade, chairman

J. Rothman, G. Warren, L. Gerace, W. Braell, W. Balch.

D. Koshland, Jr., "Receptors and signal transduction."

10 July

Intracellular transport and sorting: A. Helenius, chairman

A. Tartakoff, G. van Meer, J. Thorner, H. Pelham.

Molecular Pharmacology

Plymouth State College (N)

Henry R. Bourne, chairman; Palmer Taylor, vice chairman

15 June

G proteins: H. R. Bourne, discussion leader

H. R. Bourne, "Expression of normal and mutated G protein α chains."

A. G. Gilman, "G protein structure and function."

R. Reed, "Molecular basis of olfaction."

Receptors that talk to G proteins: E. Ross, discussion leader

E. Ross, "Structure of the β -adrenergic receptor."

R. Dixon, "Genetic analysis of the β -adrenergic receptor."

D. Capon, "Structure and expression of the muscarinic cholinergic receptor."

16 June

Receptors and tyrosine kinases: R. Roth, discussion leader

R. Roth, "Antibodies and mutagenesis as probes of insulin receptor structure and function."

J. Glenney, "Calpactins: Calcium-regulated cytoskeletal substrates for the tyrosine kinases."

L. T. Williams, "Mitogenic pathways involved in the action of PDGF."

Phosphoinositides: J. Putney, discussion leader

J. Putney, "Polyphosphoinositides."

R. Bell, "Protein kinase C."

R. Irvine, "Inositol lipids and inositol phosphates."

D. Gill, "Inositol trisphosphate effects on Ca^{2+} fluxes."

17 June

Ligand-gated channels: P. Taylor, discussion leader

P. Taylor, "Introduction."

J. Merlie, "Post translational events in acetylcholine receptor synthesis."

R. J. Miller, "Properties of calcium channels."

S. Heinemann, "Molecular characterization and subtyping of nicotinic receptors."

Voltage-gated channels: W. Catterall, discussion leader

W. Catterall, "Molecular properties of voltage-sensitive sodium channels."

F. Hofmann, "Regulation of voltage-sensitive calcium channels."

M. Seager, "Structure of Apamin-sensitive calcium-activated K^+ channels."

L. Salkoff, "Molecular biology of *Drosophila* sodium channel."

18 June

Synaptic modulation and signaling: R. A. Nicoll, discussion leader

R. A. Nicoll, "Coupling of neurotransmitter receptors to potassium channels in hippocampal pyramidal cells."

H. C. Hartzell, "Regulation of calcium current in heart cells by cyclic nucleotides and neurotransmitters."

L. Kaczmarek, "Regulation of calcium channels by protein phosphorylation."

S. Siegelbaum, "Presynaptic facilitation and inhibition: Role of distinct second messenger systems."

E. Kandel, "The short and long of long-term memory."

19 June

Retinal phototransduction: P. Liebman, discussion leader

P. Liebman, "Enzyme coupling and cyclic nucleotide control in visual transduction."

G. G. Matthews, "Visual transduction: gating of ion channels by light and cyclic GMP."

J. Hurley, "Photoreceptor G proteins."

Molten Salts and Liquid Metals

Brewster Academy

Gleb Mamantov, chairman; M.-L. Saboungi, vice chairman

17 August

W. Freyland, discussion leader

W. W. Warren, "Picosecond dynamics of electrons in molten salts."

A. Selloni, "Computer simulation of electrons in metal-metal halide solutions."

G. N. Papatheodorou, "Raman spectra of metal-molten salt mixtures."

C. A. Angell, discussion leader

C. T. Moynihan, "Heavy metal fluoride glasses and melts."

D. Quitman, "Raman spectroscopy of some glass forming liquids."

18 August

J. Franz, discussion leader

N. W. Ashcroft, "The nature of the metallic state near the liquid-vapor and metal-insulator transitions."

F. Hensel, "Metallic fluids in the critical region."

P. Oelhafen, "Electronic structure of liquid metals and alloys studied by electron spectroscopy."

J. S. Wilkes, discussion leader

N. J. Bjerrum, "Complex formation,

acid/base equilibria and catalysis in molten salts."

C. L. Hussey, "Metal halide complexes in room temperature haloaluminates molten salts."

19 August

B. Gilbert, discussion leader

G. P. Smith, "Bronsted superacidity in ionic liquids."

B. L. Tremillon, "Influence of oxoacidity on the chemical stability and corrosiveness of molten alkali nitrates."

M. H. Brooker, "Raman intensity studies of molten salts."

D. Inman, discussion leader

R. A. Osteryoung, "Recent chemical and electrochemical studies in ambient temperature chloroaluminate molten salts."

J. R. Selman, "Oxygen reduction in molten carbonates: Chemistry and electrochemistry."

20 August

M. Blander, discussion leader

E. U. Franck, "The transition from metallic to ionic behavior: The fluid cesium-cesium hydride system to 800 bars and 800°C."

R. Jeanloz, "Melting experiments at ultrahigh pressures and temperatures."

K. Todheide, "Recent high-pressure results on molten salts."

M.-L. Saboungi, discussion leader

L. Burris, "The application of molten salts and liquid metals in the IFR pyrochemical fuel recovery process."

H. Ruppertsberg, subject to be announced.

21 August

D. R. Sadoway, discussion leader

T. Ostvold, "Interfacial tension between aluminum and cryolite melts."

R. A. Howe, "Structural properties of molten nickel halides."

Muscle Contraction

Tilton School

Yale E. Goldman, chairman; Carolyn Cohen, vice chairman

27 July

Cross-bridge theory of muscle contraction: D. R. Trentham, discussion leader

R. G. Yount, "Enzymology and protein chemistry."

E. Eisenberg, "ATPase kinetics."

Y. E. Goldman, "Physiology and mechanics."

J. A. Spudis, "Model motile systems."

H. E. Huxley, "X-ray structural studies."

Actomyosin interactions in vitro: E. W. Taylor, discussion leader

D. D. Thomas, "EPR and optical spectroscopy."

I. P. Trayer, "NMR spectroscopy."

K. Sutoh, "Visualization of the ATPase site."

M. A. Geeves, "Pressure-jump perturbations."

28 July

Structural dynamics by x-ray diffraction

tion and spectroscopy: R. S. Goody, discussion leader

H. E. Huxley, "Dynamic x-ray diffraction."

Y. Maeda, "Dynamic x-ray diffraction."

T. Burghardt, "Fluorescence spectroscopy."

P. G. Fajer, "EPR and phosphorescence spectroscopy."

Mechanics and actomyosin kinetics in fibers: D. C. S. White, discussion leader

D. R. Trentham, "Caged nucleotides and oxygen-exchange."

M. Schoenberg, "Weakly and strongly binding cross-bridges."

R. L. Moss, "Regulatory subunits and cross-bridge cycling."

A. M. Gordon, "Cross-bridge effects on Ca-activation."

29 July

Actin, thin filament structure and regulation: C. Cohen, discussion leader

C. Schutt, "Crystallography of actin/profilin."

K. Holmes, "Structure of actin filaments."

T. Wakabayashi, "Thin filament structure."

G. N. Phillips, "Crystallography of tropomyosin-tropomyosin complexes."

Myosin, thick filament structure and regulation: C. R. Bagshaw, discussion leader

I. Rayment, "Progress on the structure of S-1 crystals."

D. Mornet, "Proteolytic fragments of S-1."

R. Craig, "Electron microscopy of myosin filaments."

J. Sellers, "Smooth muscle regulation."

30 July

Molecular biological approaches to structure/function of muscle proteins: J. A. Spudis, discussion leader

L. A. Leinwand, "Diversity of myosin heavy chains."

R. H. Waterston, "Genetics of *C. elegans* thick filaments."

E. Fyberg, "Genetics of *Drosophila* actin and tropomyosin."

C. Ordahl, "Troponin-T switching in development."

Cytoskeletal proteins of muscle cells: T. D. Pollard, discussion leader

J. Sanger, "Myofibrillogenesis."

S. Craig, "Peripheral sarcomeres (Costameres)."

K. Wang, "Structural role of titin and nebulin."

R. Horowitz, "Physiological role of titin and nebulin."

31 July

Summary: A. F. Huxley, discussion leader

Mycotoxins and Phycotoxins Plymouth State College (N)

Bruce B. Jarvis, chairman; Gordon Neish, vice chairman

29 June

C. J. Mirocha, discussion leader

J. H. Burnett, "Fungal genetics."

M. O. Moss, "Mycotoxin production by *Fusarium*."

D. T. Wicklow, "Mycotoxins: The fungal perspective."

P. Hart, "The role of deoxynivalenol as a virulence factor in plant diseases caused by *Fusarium graminearum*."

G. A. Bean, "Role of mycotoxins in plant pathogenicity."

30 June

J. D. Miller, "Plant-fungus interactions."

O. C. Yoder, "Molecular analysis of toxin production by fungal pathogens."

A. E. Desjardins, "Genetics and biochemistry of trichothecene production in *Fusarium*."

W. Carmichael, discussion leader

S. Hall, "Phycotoxin production from blue-green algae."

Y. Shimizu, "Chemistry and biochemistry of dinoflagellate toxins."

1 July

P. Scott, discussion leader

V. Betina, "Structure-activity relationships among mycotoxins."

N. T. Keen, "The effects of two host-selective fungal peptide toxins in plant cells."

R. E. Moore, "New toxins from blue-green algae."

B. Yagen, discussion leader

T. Yoshizawa, "Bioconversion of trichothecenes by toxigenic *Fusaria*."

L.-M. Cote, "Intestinal metabolism of xenobiotics, an alternative metabolic pathway for mycotoxins."

2 July

R. Greenhalg, discussion leader

J. D. Bu'Lock, "Regulation of mycotoxins biosynthesis."

C. A. Townsend, "Biosynthesis of aflatoxins."

Ch. Tamm, "Synthetic studies on trichothecenes."

W. G. Sorenson, "Health impact of mycotoxins in the home and workplace."

M. Matossian, "Role of mycotoxins and phycotoxins in the history of man."

3 July

H. L. Trenholm, discussion leader

M. Bialer, "Pharmacokinetics and metabolism of T-2 toxin and HT-2 toxin after various routes of administration."

M. V. Howell, "Mycotoxins: The industrial perspective."

G. Pavanassavan, "Commercial development of toxins as chemotherapeutic agents."

Natural Products

New Hampton School

M. Ross Johnson, chairman; Robert K. Boeckman, vice chairman

20 July

Introduction and welcome: M. R. Johnson, chairman

W. R. Baker, "Chemical modification

and biological evaluation of macro-lide antibiotics in the erythromycin A series."

J. Munroe, "Synthesis of new β -lactam antibiotics."

S. Schreiber, "Chemistry relevant to several compounds of biological interest."

S. Akutagawa, "Technical synthesis of optically active compounds based on asymmetric isomerization and hydrogenation."

21 July

M. T. Reetz, "New asymmetric syntheses."

G. E. Keck, "Chelation controlled diastereoselectivity: Chemistry, spectroscopy and theory."

F. Schneider, "Lipstatin and analogs: Synthesis and structure activity relationships."

M. D. Lee, "The chemistry and structures of the calicheimins—a new class of potent antitumor antibiotics."

22 July

Y. Ito, "Asymmetric synthesis of amino acid derivatives with α -isocyanocarboxylates."

M. Jung, subject to be announced.

C. H. Heathcock, "*Daphniphyllum* alkaloid synthesis."

23 July

D. Lynn, subject to be announced

J. P. Vacca, "The total synthesis of D- and L-myo-inositol-1,4,5-triphosphate and derivatives."

P. Schultz, "New approaches toward the synthesis of biological catalysts."

Y. Kishi, "Natural products synthesis: palytoxin."

24 July

W. Oppolzer, "Natural products as a source of chiral information or as targets in organic synthesis."

M. C. Pirrung, "Photochemistry in the service of organic chemistry."

One or more poster sessions will be held. Participants are encouraged to participate and those interested in contributing to the poster session should indicate this on their application. A poster title and a one- to three-page abstract should be sent by 8 July to Dr. Robert Boeckman, Department of Chemistry, University of Rochester, Rochester, NY 14627. Several short talks will be selected from these abstracts.

Neural Plasticity

Brewster Academy

David L. Wilson, chairman; Carla Shatz, vice chairman

20 July

M. Westerfield, discussion leader

G. Cole, "Characterization of the heparin-binding domain of NCAM."

L. Landmesser, "Possible functional roles of cell-surface molecules in axonal outgrowth."

J. Covault, "Expression of cell-surface molecules during reinnervation of skeletal muscle."

D. L. Wilson, discussion leader

E. Kandel, "Cell and molecular ap-

proaches to short- and long-term memory."

21 July

C. Schatz, discussion leader

E. I. Knudsen, "The role of experience in the development and maintenance of the map of auditory space."

M. Merzenich, "Reorganization of somatosensory maps in adult mammalian cerebral cortex following peripheral nerve injury."

J. Schmidt, "The role of activity in refinement of topographic maps in goldfish retinotectal system."

R. Zigmund, discussion leader

A. Rittenhouse, "Long-term and short-term regulation of ganglionic tyrosine hydroxylase activity produced by nerve stimulation."

J. Waymire, "Phosphorylation and activation of tyrosine hydroxylase in chromaffin cell cultures."

L. Swanson, "Neural and hormonal regulation of neuropeptide levels in the hypothalamus."

22 July

W. Gispen, discussion leader

R. Isaacson, "Methodological issues in evaluating hippocampal contributions to learning and memory."

S. H. Lopes da Silva, "Is long-term potentiation a model for learning and memory?"

O. Stewart, "Protein synthesis at the postsynaptic site: Its role in synapse growth and modification."

P. Gold, "Humoral factors and learning and memory."

P. Getting, discussion leader

E. Marder, "Peptidergic modulation of a neuronal circuit."

G. Hatton, "Plasticity in chemical and non-chemical synapses in mammalian peptidergic neurons."

P. Adams, "Neurotransmitter modulation of cellular properties."

23 July

T. Carew, discussion leader

R. Nicoll, "Neurotransmitter modulation of ionic currents in hippocampal pyramidal cells."

T. Brown, "A cellular analysis of long-term potentiation."

S. Siegelbaum, "Role of channel modulation in synaptic plasticity."

S. Lisberger, discussion leader

F. Miles, "The vestibulo-ocular reflex as a model system for investigating brain mechanisms of plasticity in the adult primate."

S. Highstein, "Brainstem and cerebellar circuits underlying the vestibulo-ocular reflex in monkeys."

S. Lisberger, "Changes in brainstem circuits underlying plasticity of the vestibulo-ocular reflex in monkeys."

24 July

M. Kennedy, discussion leader

I. Levitan, "Modulation of ion channels by cAMP-dependent protein kinase."

L. Kaczmarek, "Modulation of ion channels by the C-kinase."

M. Kennedy, "Potential roles of calmodulin-dependent protein kinases in the nervous system."

Nonlinear Optics and Lasers

Brewster Academy

Hyatt M. Gibbs, chairman; Jeffrey Bokor, Adelbert Owyong, Arnold Schmidt, and Fujio Shimizu, vice chairmen

27 July

Optical stark effect: N. Peyghambarian, discussion leader

D. Hulin, A. Mysyrowicz, "Femtosecond study of optical stark effect."

D. Chemla, "Theory and experiment of optical stark effect."

Quantum confinement effects:

S. Koch, "Absorption blue shift in laser-excited semiconductor micro-spheres."

S. Schmidt-Rink, "Linear and nonlinear optical properties of semiconductor microcrystallites."

Quantum dots: A. Schmidt, discussion leader

L. Brus, "The electronic structure and the excited-state dynamics of semiconductor-microcrystallites."

28 July

Fundamental gee whiz: D. Owyong, discussion leader

R. Freeman, "The scattering of electrons by laser light."

J. Javanainen, "Quantum jumps."

Trapping of atoms:

S. Chu, "Laser cooling and trapping of atoms and applications."

Squeezing: R. Slusher, discussion leader

Speakers and subjects to be announced.

29 July

Optoelectronic devices: D. Auston, discussion leader

Speaker and subject to be announced.

Ultrafast nonlinear optics:

E. Ippen, "Femtosecond studies of optoelectronic materials and devices."

X-ray lasers: J. Bokor, discussion leader

R. Falcone, "Soft x-ray laser."

30 July

Photorefractive: J. Feinberg, discussion leader

Speaker and subject to be announced.

Associative memory: F. Shimizu, discussion leader

D. Anderson, "Brain-like processing with optics."

P. Franken, After-lobster speaker.

Poster session: G. Khitrova, H. Gibbs, discussion leaders.

31 July

Superstar session:

N. Bloembergen, subject to be announced.

S. Harris, "Laser spectroscopy of core-excited levels of neutral ruddium."

Nuclear Chemistry

Colby-Sawyer College (N)

D. B. Fossan, chairman; J. Randrup, vice chairman

15 June

R. Broglia, discussion leader

F. S. Stephens, "γ-Ray energy correlations in the continuum."

I. Y. Lee, "γ-Ray energy-correlation studies using spin spectrometer."

T. Dossing, "Damping of rotational motion in nuclei."

F. E. Bertrand, Jr., discussion leader

B. Herskind, "Collective excitation in hot nuclei."

K. A. Snover, "Giant dipole resonance in hot nuclei."

16 June

P. J. Nolan, discussion leader

P. J. Twin, "Status of superdeformation."

F. A. Beck, "High spin studies with 'Chateau de Crystal'."

J. Dudek, "Theoretical aspects of superdeformation in nuclei."

N. R. Johnson, discussion leader

H. Emiling, "Lifetimes and *g*-factors of high-spin states."

G. A. Leander, "Electromagnetic properties in rotating nuclei."

17 June

M. D. Stephens-Deleplanque, discussion leader

R. M. Lieder, "Nuclear spectroscopy with OSIRIS."

E. S. Paul, "Collective oblate bands driven by rotational alignment (*A* = 130)."

R. Bengtsson, "Triaxial shapes and prolate-oblate shape coexistence."

G. B. Hagemann, discussion leader

J. Simpson, "Spectroscopy of nuclei far from stability using recoil separator."

A. Richter, "New elementary excitation modes in nuclei."

18 June

D. Ward, discussion leader

W. R. Phillips, "Octupole deformations in neutron-rich medium-light nuclei."

T. L. Khoo, "Structural changes along the Yrast line."

D. Schwalm, "Spectroscopy of actinides."

J. Randrup, discussion leader

W. Ochels, "Research on the D-1 NASA-Shuttle Mission."

19 June

D. H. Feng, discussion leader

R. Casten, "The neutron proton interaction and nuclear collectivity."

R. A. Meyer, "Do 1-g orbital neutron-proton correlations influence the structure of mass 100 nuclei?"

J. N. Ginocchio, "Fermion dynamical symmetry model of collective motion in nuclei."

Nuclear Structure

Tilton School

Gerard M. Crawley, chairman; M. Banerjee, vice chairman

10 August

D. Walecka, discussion leader

P. de Witt-Huberts, "Results from

(e,e'p) measurements on heavy nuclei."

W. J. van Orden, "Quasi-elastic electron scattering in the Dirac optical model."

A. Nathan, "Photon decays of giant resonances."

G. Bertsch, discussion leader

H. Niefeneker, "High energy gamma rays from heavy ion reactions."

C. Gosset, "Statistical decay of the giant dipole resonance."

11 August

L. Kisslinger, discussion leader

G. T. Garvey, "Anti-quark distributions in nuclei."

N. Isgur, "Chromodynamics in nuclear physics."

M. Rho, "Strangeness and the little bag as a 'vacuum cleaner'."

J. P. Schiffer, discussion leader

M. Johnson, "Relativistic effects in intermediate energy reactions."

R. Redwine, "Pion-absorption."

12 August

P. J. Siemens, discussion leader

S. Nagamiya, "Recent results from high-energy heavy ion reactions at BNL."

J. Harris, "Recent results from high-energy heavy ion reactions at CERN."

L. McLaren, "Observables in high-energy heavy ion reactions."

W. C. Haxton, discussion leader

B. Holstein, "Weak decays of hypernuclei."

W. Hampel, "Solar neutrinos."

13 August

P. Nolan, "Collectivity at high spin in deformed and superdeformed nuclei."

Speaker to be announced, "Chaos."

G. Brown, "Supernovae."

14 August

V. Brown, discussion leader

C. Glashauser, "Spin-flip measurements at high excitation energy."

A. P. Alford, "Recent charge-exchange results at intermediate energies."

C. J. Horowitz, "Effective masses."

Nucleic Acids

New Hampton School

Nicholas R. Cozzarelli and Robert T. Sauer, co-chairman

15 June

DNA conformation and dynamics: D. M. Crothers, discussion leader

D. Patel, "NMR studies of helical errors in DNA."

M. Levitt, "DNA energetics and dynamics."

Protein nucleic acid interactions and assemblies: C. O. Pabo, discussion leader

D. Rhodes, "Transcription factor IIIA."

P. B. Dervan, "Designing site-specific DNA cleavage agents."

P. B. Sigler, "Trp repressor: Structure and DNA recognition."

16 June

Mechanisms of RNA processing and splicing: C. Guthrie, discussion leader

J. A. Steitz, "snRNP's and processing."

O. C. Uhlenbeck, "A very small ribozyme."

DNA replication: C. C. Richardson, discussion leader

J. L. Campbell, "Yeast DNA replication."

R. McMacken, "Biochemical mechanisms in the initiation of bacteriophage replication."

A. Kornberg, "An enzyme system initiating replication at the origin of the *Escherichia coli* chromosome."

17 June

Recombination and transcription: A. Landy, discussion leader

H. Nash, "Juxtaposition of DNA's in λ site-specific recombination."

K. Mizuuchi, "Mechanism of transposition of bacteriophage Mu."

B. Bowerman, "Retrovirus integration in vitro."

DNA repair and DNA tertiary structure: J. C. Wang, discussion leader

H. Echols, "SOS mutagenesis."

K. Au, "Enzymology of mismatch correction."

18 June

Methodological advances: W. Gilbert, discussion leader

C. R. Cantor, "Techniques for mapping the structure of entire genomes."

G. Church, "Rapid genome sequencing."

H. Lehrach, "Cosmid ordering."

Control of transcription initiation: R. Schlieff, discussion leader

C. Wu, "Purification and properties of *Drosophila* heat-shock and segmentation gene-binding proteins."

M. Ptashne, "Protein-DNA interaction and gene regulation in bacteria and yeast."

19 June

Transcription termination and translational control: J. W. Roberts, discussion leader

A. K. Das, "In vitro studies of antitermination: Modification of RNA polymerase by γ N protein."

C. M. Kane, "Transcription termination by RNA polymerase II."

J. W. Roberts, "Regulation of transcription termination."

Organic Photochemistry

Proctor Academy

Heinz D. Roth, chairman; Gary B. Schuster, vice chairman

13 July

H. D. Roth, discussion leader

P. Wender, "Synthetic organic photochemistry."

K. Schaffner, discussion leader

M. Crimmins, "Synthetic applications of intramolecular photocycloadditions."

K. Maruyama, "Photochemical cou-

pling of porphyrin-hydroquinone systems."

R. G. Weiss, discussion leader

D. F. Eaton, "Guest-host inclusion compounds: media for photochemistry and photophysics."

W. J. Leigh, "Photochemical probes of molecular mobility in liquid crystals."

14 July

A. M. Trozzolo, discussion leader

V. Balzani, "Transition metal complexes as mediators of electron transfer reactions."

M. A. Fox, discussion leader

J. W. Verhoeven, "Photoinduced charge separation and recombination mediated by through bond interaction."

Z. R. Grabowski, "Electron localized excited states—molecular structure and photochemical implications."

E. A. Chandross, discussion leader

A. Roloff, "Photochemical research in industry—achievements and trends."

H. G. Heller, "The design and development of heliochromic compounds."

15 July

G. B. Schuster, discussion leader

J. R. Norris, "The photochemistry of reaction centers."

S. G. Boxer, "Holeburning and stark spectroscopy of photochemical reaction centers and model systems."

L. E. Brus, discussion leader

R. Mathies, "Determination of retinal chromophore structure in rhodopsins with resonance Raman spectroscopy."

A. R. Holzwarth, "Picosecond studies of energy transfer and charge separation."

16 July

E. Reichmanis, discussion leader

C. W. Willson, "Silicon containing photoresist materials."

D. C. Neckers, discussion leader

P. Gooden, "Photochemistry of uniaxially elongated poly(ethylene-carbon monoxide)."

B. Monroe, "Holographic photopolymer composition."

K. A. Zachariasse, discussion leader
A. Weller, "Magnetic field effects on photochemically induced electron transfer."

17 July

P. J. Wagner, discussion leader

R. S. Sheridan, "Thermal and photochemistry at 10 K."

S. Farid, "Intermediates in electron transfer photochemistry."

F. D. Lewis, "Complex photochemistry made simple."

Organic Reactions and Processes

New Hampton School

Philip Lau, chairman; Manning Cooke, vice chairman

13 July

G. H. Posner, "Multicomponent one-pot annulations forming three to four bonds."

E. Grabowski, "Recent mechanistic study on the Mitsunobu esterification reaction and DDQ mediated double bond introduction."

E. C. Taylor, "Recent advances in the synthesis of new heterocycles."

R. Clemens, "Mechanistic implications and synthetic applications of acetylketene."

14 July

A. J. Pearson, "Selective organic synthesis using organometallic complexes."

A. Suzuki, "New selective synthesis using organoborane reagents."

J. C. Martin, "Ligand structure of hypervalent species as a tuner for reagent selectivity."

G. A. Molander, "Metal-based reagents in the service of selective organic synthesis."

15 July

R. Breslow, "The catalysis of selective synthetic reactions by artificial enzymes."

C.-H. Wong, "Selective synthesis catalyzed by natural and altered enzymes."

M. E. Jung, "New dienophiles in cycloaddition chemistry."

B. Ernst, "Intramolecular [2 + 2] cycloadditions of ketenes and olefins—a useful synthetic tool."

16 July

P. A. Bartlett, "Controlling cyclization reactions for stereoselective synthesis of cyclic ethers."

B. Giese, "Selective synthesis with alkyl radicals."

Contributed short papers.*

17 July

F. A. Davis, "Recent advances in the asymmetric oxidations using chiral sulfonyloxaziridines."

R. B. Gamill, "Synthetic, mechanistic and stereochemical aspects of 1,2,3,4-hydride reduction."

Organometallic Chemistry

Salve Regina College

David Singleton, chairman; Richard Eisenberg, vice chairman

20 July

R. Whyman, discussion leader

H. Vahrenkamp, "Redox and ligand sphere reactions of tri- and tetranuclear clusters."

M. Hidai, "Reactions of molybdenum and tungsten dinitrogen complexes."

P. Braunstein, "Studies on mixed-metal complexes."

P. Pregosin, discussion leader

S. Davies, "Chirality control and molecular recognition via organometallic chemistry."

*Conferees wishing to submit papers for short talks and poster sessions should forward title and abstract to the chairman prior to 1 June 1987: Philip Lau, Eastman Kodak Company, Research Laboratories, Building 82, Rochester, NY 14650.

K.-H. Dotz, "Carbene complexes and natural product synthesis."

21 July

H. Bryndza, discussion leader

R. Perutz, "Preparative photochemistry, matrix isolation and flash photolysis: A three-way link."

J. Leary, "Mass-spectroscopic studies of organometallic complexes."

M. McGlinchey, "Studies on rhodium-olefin complexes using two-dimensional techniques in 500-MHz NMR."

R. Eisenberg, discussion leader

M. Rosenblum, "Organoiridium complexes in synthesis."

R. Larock, "New applications of palladium organometallics in organic synthesis."

22 July

P. Wolczanski, discussion leader

T. D. Tilley, "Transition-metal silicon chemistry."

K. Whitmire, "Zintl-metal carbonylates: The chemistry of main-group/transition-metal complexes."

R. T. Baker, "Unusual reactions of phosphido-bridged Re-M heterobimetallics (M = Rh, Ir, Pd)."

A. Wayda, discussion leader

M. Baird, "Structures and chemistry of 17-electron, metal-centered radicals."

W. Tam, "Structure modification of organometallics: materials for second harmonic generation."

23 July

J. Labinger, discussion leader

M. Rakowski DuBois, "Hydrogen activation and substrate reduction by sulfido-bridged molybdenum complexes."

W. Troglor, "Mechanism of hydration of alkenes and nitriles with $\text{trans-Pt}_2\text{HCl}(\text{PMe}_3)_2$."

H. Lehmkuhl, "Eta-olefin complexes of organylmetals and their olefin insertion reactions into metal-carbon bond."

H. Kaesz, discussion leader

D. Davenport, "Gradus Scopulosus ad Parnassum: The road to Cotton and Wilkinson."

24 July

J. Knifton, discussion leader

R. Bergman, "Reactions of later-transition metal complexes with metal-oxygen bonds."

W. Keim, "Catalytic and stoichiometric reactions with CO_2 ."

T. Albright, "Theoretical studies of organometallic reaction mechanisms."

Origins of Life

Salve Regina College

James P. Ferris, chairman; James F. Kasting, vice chairman

17 August

A. H. Delsemme, "Organic compounds in Comet Halley."

J. R. Cronin, "Interstellar processes and organic compounds in carbonaceous meteorites."

J. Oro, "Prebiotic formation of amphi-

philic lipids and the role of membranes in chemical evolution."

C. Ponnamperna, "Recent experiments in the synthesis of prebiotic molecules."

A. L. Weber, "Carbohydrates as a source of matter and energy for the origins of life."

18 August

G. E. Trantor, "Parity-violation and biomolecular handedness."

J. Lacey, Jr., "Differential distribution of D- and L-amino acids between the 2'- and 3'-positions of aminoacyl-nucleotides."

D. A. Usher, "Chirality and oligonucleotide directed peptide synthesis."

J. R. Knowles, "The evolution of enzyme function."

A. Brack, "Polypeptide emergence and catalysis."

19 August

L. E. Orgel, "Template-directed synthesis."

A. Rich, subject to be announced.

R. Rigler, "Structure and dynamics of codon-anticodon interactions."

M. Eigen, "Concepts of space and quasiespecies."

G. E. Fox, "RNA structure spaces and evolution."

20 August

W. F. Gilbert, "Exon shuffling."

B. F. Lang, "Introns are transposable in mitochondria."

M. Belfort, "Bacteriophage T4 introns."

E. Stackebrandt, "Prokaryotic phylogeny."

M. Sogin, "Eukaryotic phylogeny."

21 August

J. Boothroyd, "Trypanosome introns."

J. Szostok, "Mutational analysis of the self-splicing of introns from *Tetrahymena*."

H. D. Robertson, "Evolution and action of viroids and viroid-like agents."

Poster sessions will be held if there is sufficient interest.

Immunologic and Molecular

Aspects of Parasitism

Plymouth State College (N)

C. C. Wang, chairman; Elmer Pfefferkorn, vice chairman

3 August

Stage-specific antigens and their genes in helminths: M. Strand, discussion leader

D. Despommier, "*Trichinella spiralis*."

P. LoVerde, "*Schistosoma mansoni*."

P. Arasu, "*Brugia malayi* genomic clones encoding recombinant antigens detected by antiserum against the infected larval stage."

Surface antigens of kinetoplastidae: M. Turner, discussion leader

D. Wiley, "X-ray crystallographic studies of *T. brucei* VSG."

P. England, "Studies of *T. brucei* VSG biosynthesis and characteriza-

tion of the phospholipase."
C. Bordier, "Surface antigen P-63 of *Leishmania*."

4 August

Malaria vaccines: J. Young, discussion leader
W. Hockmeyer, "Sporozoites."
J. Ravetch, "Blood stage."
J. Meuwissin, "Gametocytes."
Somatic and germ line genetics of parasites: B. Ullman, discussion leader
S. Beverly, "Gene amplification and drug resistance in *Leishmania*."
S. Ward, "Analysis of germ line genes in nematodes."
S. Turco, "Phosphoglycan of *Leishmania donovani*."

5 August

DNA probes for diagnosis of parasitic infections: D. Wirth, discussion leader
S. Panyim, "DNA probes for identifying different mosquito spp."
W. Rogers, "DNA probes for diagnosis of Leishmaniasis."
J. Crampton, "DNA probes of insects which transmit parasitic diseases."
Lymphokines and parasites: C. Nacy, discussion leader
M. S. Meltzer, "Biology of lymphokines."
B. B. Agarwal, "Biochemistry and molecular biology of lymphokines."
I. J. Fidler, "Pharmacology of lymphokines."

6 August

Molecular biology of trypanosomes: J. Boothroyd, discussion leader
F. Opperdoes, "The glycosome of *T. brucei*."
S. Hajduk, "Kinetoplast DNA of Trypanosomatidae."
J. Donelson, "Metacyclic VSG genes of Trypanosomes."
Parasite protease: J. McKerrow, discussion leader
M. Rojkind, "The collagenase of *E. histolytica* as a virulence factor."
P. Hotez, "Function and molecular cloning of the hookworm elastase."
G. Newport, "Strategies for molecular cloning and sequence analysis of nematode and trematode proteases."

7 August

Functional proteins of *Plasmodium*: M. Perkins, discussion leader
T. Holder, "The protein structure and glycosylation of the major merozoite surface 195-kD antigen."
R. Coppel, "Surface antigens of the blood stage."
J. Barnwell, "Molecular determinants for cytoadherence of infected erythrocytes."

Phagocytes

Proctor Academy

Peter Elsbach, chairman; Ralph Synderman, vice chairman

28 June

M. Karnovsky, "Waking up the

phagocyte and putting the animal to sleep."

29 June

Protein mediators of inflammatory responses and phagocyte function: C. Nathan, S. Silverstein, discussion leaders
C. Nathan, "Interferon."
B. Beutler, "TNF."
J. Browning, "Lipocortin."
V. Nussenzweig, "DAF."
A. Aderem, "Myristoylation of macrophage proteins."
S. Weiss, "Regulation of proteases by O₂-derivatives."

30 June

Migration and adhesion: M. Baggiolini, J. Gallin, discussion leaders
I. Goldstein, "Synexin."
L. Liotta, "Laminin."
T. Springer, "Surface glycoproteins."
S. Wright, "Fibronectin/receptor."
V. Marchesi, "Cytoskeleton and surface glycoproteins."
T. Stossel, "Molecular properties of gelsolin."

1 July

Differentiation: I. Olsson, discussion leader
D. Fearon, "Structural analysis and phosphorylation of complement receptor type 1."
M. Haberland, "Maleoyl albumin receptor."
W. Nauseef, "Biosynthesis of myeloperoxidase."
G. Hart, "Biosynthesis and release of the variant glycoprotein of African trypanosomes."
Stimulus-response coupling: R. Snyderman, discussion leader
R. Snyderman, "N-proteins."
Y. Hannun, "Protein kinase C."
L. Limbird, "Phospholipase activation."

2 July

Cytotoxic proteins: P. Elsbach, R. Lehrer, discussion leaders
B. de Kruffy, "Protein insertion into membranes."
E. Podack, "MAC."
G. Gleich, "Cytotoxins of eosinophils."
J. Tschopp, "Cytotoxic protease and proteoglycans."
J. Weiss, "Molecular determinants of phospholipase action on *Escherichia coli* killed by PMN."

3 July

Molecular basis of defective respiratory burst: S. Klebanoff, discussion leader
S. Orkin, "Identification of missing gene in CGD."
J. Curnutte, A. Segal, "New insights into the defects(s) in the activation of the respiratory burst in CGD."

Biochemical Aspects of Photosynthetic Membranes

Colby-Sawyer College (N)

Richard Malkin, chairman; Colin Wraight, vice chairman

27 July

Membrane structure and dynamics: I. Ohad, discussion leader
J. Barber, "Membrane fluidity and diffusional processes in thylakoids."
B. Andersson, "Heterogeneity and dynamics of the organization of PSII."
A. Melis, "Thylakoid membrane response to PSI and PSII light."
Structural aspects of pigment-protein complexes: R. J. Cogdell, discussion leader
J. P. Thornber, "Light harvesting and reaction center complexes of PSI and PSII of higher plants."
D. Bryant, "The cyanobacterial photosynthetic apparatus-analysis by molecular genetics."

28 July

Photochemical reaction centers: G. Feher, discussion leader
K. Satoh, "PSII reaction center consisting of D-1, D-2 and cyt. b-559."
W. Rutheford, "Spectroscopic studies of photochemical reaction centers."
Q function and binding: C. Wraight, discussion leader
M. Okamura, "Structure and function of the Q-Fe complex in bacterial reaction centers."
P. Rich, "Factors affecting Q chemistry in the quinone binding sites of cytochrome *b-c* complexes."

29 July

Cytochrome *b-c* complexes: W. Cramer, discussion leader
P. Joliet, "Spectroscopic analysis of the redox components of the cyt. *b₆-f* complex: mechanism of proton pumping."
B. Trumpower, "The cytochrome *b-c* complex of respiring bacteria."
Oxygen evolution: G. Chenaie, discussion leader
C. Yocum, "Polypeptide and inorganic ion cofactors of oxygen evolution activity."
T. Vanngard, "Spectroscopic studies of the oxygen evolving system."

30 July

Proton ATPase and energy coupling: W. Junge, discussion leader
R. McCarty, "Functions and interactions of ATP synthetase subunits."
J. B. Jackson, "H⁺-ATPase and energy-linked transhydrogenase as consumers of pmf."
Secondary electron transfer processes: R. Prince, discussion leader
D. B. Knaff, "Interaction of ferredoxin with ferredoxin-dependent chloroplast enzymes."

31 July

Molecular biology of photosynthetic membranes: S. Kaplan, discussion leader
J. D. Rochaix, "Molecular genetics of PSII in *Chlamydomonas*."
G. Schmidt, "Biogenesis of chlorophyll-containing complexes."

Physical Metallurgy Tilton School

Harry Lipsitt and David P. Pope, co-chairmen; Frans Spaepen, vice chairman

Intermetallic Compounds

20 July

H. Mecking, discussion leader
H. Lipsitt, "Overview of strength and ductility of intermetallic compounds."
V. Vitek, "Dislocation core structure and slip systems in intermetallic compounds."
D. P. Pope, "Strengthening mechanisms in intermetallic compounds."
T. Suzuki, discussion leader
N. Stoloff, "Creep and fatigue of intermetallic compounds."
M. Yamaguchi, "Deformation of non-cubic intermetallic compounds."

21 July

L. A. Johnson, discussion leader
D. Dimiduk, "Overview of brittle-ductile transition mechanisms."
O. Izumi, "Mechanisms of ductility improvement in L₂ compounds."
A. I. Taub, C. L. Bryant, "Effects of composition on the tendency for intergranular fracture in L₂ compounds."
P. Veyssiere, discussion leader
J. C. Williams, "Microstructural effects on the ductility of intermetallic compounds."
E. M. Schulson, "Grain boundary accommodation of slip."
D. Srolovitz, "Grain boundary modeling."

22 July

A. Gonis, discussion leader
A. Shere, "Limitations and approximations of electronic structure calculations."
A. J. Freeman, "Ab initio ground state calculations."
A. Sutton, discussion leader
D. D. Vvedensky, "Quantum mechanics and fracture."
D. Pettifor, "Quantum mechanics and alloy design."

23 July

J. Tien, discussion leader
S. K. Das, "Alloy design: What experimentalists need from theoreticians."
D. M. Shah, "Selection and evaluation of intermetallic alloys."
R. L. Fleischer, "The search for high strength at high temperatures."
D. P. Pope, discussion leader
J. E. Harris, "Corrosion and art."

24 July

C. C. Koch, discussion leader
C. T. Liu, "Ductile Ni-aluminide alloys."
K. Vedula, "B2-base materials and composites."
M. J. Blackburn, "NiAl and TiAl-base alloys."

Physical Organic Chemistry Holderness School

John E. Baldwin, chairman; Bruce E. Smart, vice chairman

15 June

P. Haake, discussion leader

J. C. Chabala, "The relationship of molecular physico-chemical properties to receptor binding affinity."

A. D. Hamilton, "Molecular recognition in macrocyclic receptors."

J. Stubbe, "Efforts to understand the mechanism of ribonucleotide reductases: Evidence for radical intermediates."

C. Barrows, discussion leader

D. D. Wirth, "Methodological problem solving in process development."

M. Halpern, "A mechanistic approach to the evaluation and optimization of new potential applications of phase transfer catalysis."

16 June

E. Wasserman, discussion leader

M. Lahav, "Molecular recognition at the surfaces of growing crystals."

M. C. Etter, "Design and synthesis of hydrogen-bonded organic solids."

J. M. McBride, "Substituent and isotope effects in organic crystals."

B. Smart, discussion leader

D. M. Walba, "Design of high-performance ferroelectric liquid crystals: A model for the molecular origins of the polarization in FLCs."

J. S. Miller, "Molecular ferromagnets—design, synthesis, and physical properties."

17 June

E. Williams, discussion leader

N. S. True, "Gas phase NMR studies of conformational dynamics."

K. Mullen, "Electron transfer and electron storage in molecules with separate redox units."

J. Lenhard, "Reactions of cyanine dye radial ions."

W. Bailey, discussion leader

T. B. Freedman, "Vibrational circular dichroism, vibrationally generated ring currents, and molecular stereochemistry."

K. B. Wiberg, "Rotational barriers."

18 June

P. Dowd, discussion leader

G. Leroy, "The stability concept revisited."

R. C. Haddon, " π -electrons in three-dimensions."

J. Bartmess, discussion leader

T. B. McMahon, "Probing the structure, energetics, and reaction mechanisms of gaseous ions."

G. B. Ellison, "Laser spectroscopy of carbanions."

19 June

C. Wentrup, discussion leader

E. M. Arnett, "Carbon-carbon bond formation and heterolysis through the reaction of carbocations with carbanions."

F.-G. Klärner, "Organic reactions at high pressure: The effect of pressure on competing and consecutive processes."

R. S. Sheridan, "Thermal- and photochemistry at 10 K."

Plant Cell and Tissue Culture Plymouth State College (S)

Keith A. Walker, chairman; Wilf Keller, vice chairman

15 June

M. Hinchee, "Cellular characteristics of agrobacterium-mediated plant transformation."

P. Pang, "Gene expression in *Arabidopsis thaliana* seed development."

J. Winter, "The regulation of the petunia HSP70 genes and the utilization of heat shock as a tool in plant molecular biology."

A. Binns, "Dehydrodiconiferyl glucosides and the control of plant cell division."

R. Horgan, "Cytokinin and auxin biochemistry in tissue culture."

16 June

M. Crouch, "Exogenous control of maturation in embryo cultures of *Brassica*."

A. Komamine, "Synchronized somatic embryogenesis system and its application to production of transformed cloned plants at high frequency."

J. E. Perley, "Storage protein expression in zygotic and somatic embryos."

M. K. Redenbaugh, "Somatic embryogeny and artificial seed."

L. Jones, "Commercial development of oil palm."

17 June

D. Tomes, "Genetic analysis of embryogenic callus formation in maize."

C. A. Rhodes, "Callus formation from protoplasts isolated from embryogenic maize cell cultures."

R. Phillips, "Genomic reorganization induced by maize tissue culture."

G. H. Toennies, "Rice biotechnology: a strategy for international agricultural development."

18 June

R. I. Greyson, "Development of flowers and inflorescences in vitro."

C. Nessler, "Alkaloid synthesis and differential gene expression in opium poppy."

Z. San, "Advances in *Brassica microspore* culture."

P. Maliga, "Chloroplast recombination in cultured plant cells."

G. Lazar, "Co-regulation of dihydrofolate reductase and thymidylate synthase in over-producer cell lines of wild carrot."

19 June

J. Mauvais, "Developing plant varieties resistant to sulfonyl urea herbicides."

M. Vaec, "Engineering crops for agriculture: insect and herbicide resistance."

R. Meeusen, "Insect resistant transgenic crops: Engineering of the B. T. endotoxin."

Plant Molecular Biology Proctor Academy

Timothy C. Hall, chairman; Richard Meagher, vice chairman

22 June

R. Symons, discussion leader

T. Diener, "Viroids and viroid mutagenesis."

G. Dinter-Gottlieb, "Introns and viroids."

T. Dreher, "Replication of viral RNAs containing site-specific mutations."

M. Zaitlin, J. Davies, discussion leaders

P. Ahlquist, "BMV: A vector for monocots."

N. Grimsley, "Agroinfection using maize streak virus."

23 June

R. Beachy, B. Larkins, discussion leaders

B. Stillman, "Trans-acting factors."

A. Cashmore, "Regulation of rbcS gene expression."

J. Mullet, "Transcriptional regulation in barley chloroplasts."

S. Levings, R. Quatrano, discussion leaders

D. Lonsdale, "Potentials for transformation in mitochondria."

J. Golden, "Gene rearrangements in *Anabaena*."

24 June

J. Key, J. Schell, discussion leaders

E. Cocking, "Genetic engineering of rice."

S. Howell, "Luciferase as a screenable marker."

M. Bevan, "The GUS fluorescent screening system."

C. Arntzen, L. Bogorad, discussion leaders

J. Palmer, "Potential transformation of chloroplasts."

25 June

I. Sussex, L. Dure, discussion leaders

A. Darvel, "Glycans and morphogenesis."

E. Myerowitz, "Arabidopsis as a model system."

J. Nasrellah, "Incompatibility systems."

R. Fraley, "Transgenic plants: present status and future development."

26 June

C. Lamb, discussion leader

B. Staskowicz, "Genetic engineering of *Xanthomonas*."

C. Condit, "Glycine-rich glycoproteins."

A. Shewalter, "Hydroxyproline-rich glycoproteins."

Plasma Physics

Plymouth State College (S)

Kevin M. McGuire, chairman; C. S. Liu, vice chairman

MHD and Transport

22 June

F. Wagner, discussion leader

J. Hugill, "Instabilities and transport at $q = 3$ with a bundle divertor."

A. Wootton, "Transport with ergodic layer in text."

E. Holzhauser, "Magnetic and density fluctuations on Asdex."

S. Zweben, discussion leader

E. Frederickson, "Magnetic activity which causes transport on TFTR."

K. Burrell, "Transport studies in DIII-D."

23 June

J. Drake, discussion leader

B. Carreras, "MHD and confinement."

A. Reiman, "Equilibrium with islands in Tokamaks."

P. Guzdar, "Model for thermal transport in Tokamaks."

S. C. Prager, discussion leader

C. Surko, "An experimentalist's view of microturbulence in Tokamaks."

P. Diamond, "Critical comparison of theory and experimental results in plasma turbulence."

24 June

R. Goldston, discussion leader

H. Ringler, "Temperature and density profiles in the presence of tearing modes in the WVII-A stellarator."

W. Stodiek, "Sawteeth in Tokamaks."

G. Wurden, "Observations of MHD activity and anomalous ion heating in a reversed field pinch device."

N. Sauthoff, discussion leader

M. Malacarne, "MHD activity and turbulence in jet."

S. Ishida, "MHD activity on JT-60."

25 June

C. S. Liu, discussion leader

B. Coppi, "Profile consistency in Tokamaks."

R. Waltz, "Transport and non-local effects."

Guest speaker to be announced.

Poster session

26 June

D. Monticello, discussion leader

R. Gill, "Soft x-ray MHD activity on jet."

Yu. V. Esipchuk, "Transport in T-10."

L. E. Zakharov, "Stability in Tokamaks."

Point Defects, Line Defects and Interfaces in Semiconductors

Plymouth State College (S)

Eicke R. Weber, chairman; G. A. Baraff, vice chairman

20 July

J. W. Corbett, discussion leader

G. D. Watkins, "Structure and properties of thermal donors in silicon."

T. Gregorkiewicz, "EPR and ENDOR of thermal donors in silicon."

R. C. Newman, "Kinetics of oxygen diffusion and precipitation in silicon."

M. Scheffler, discussion leader

A. Chantre, "Charge state control of silicon defect atomic structures."

B. Hamilton, "Thermally controlled metastable defects in silicon."

21 July

D. V. Lang, discussion leader

M. Mizuta, "DLTS and Hall effect of deep donor centers in GaAs and AlGaAs."

J. C. M. Henning, "Optical investigations of deep donors in AlGaAs."

T. Theis, "Shallow and deep donors in AlGaAs."

H. Alexander, discussion leader

K. Sumino, "Dislocations and point defects in GaAs."

C. Kiesielowski-Kemmerich, "Dislocations and point defects in silicon."

22 July

J. M. Gibson, discussion leader

T. Kennedy, "Magnetic resonance of defects in AlGaAs epitaxial layers."

P. M. Petroff, "Interdiffusion in quantum wells and superlattices."

M. Grabow, "Limits to the thickness of epitaxial films."

W. Monch, discussion leader

P. E. Batson, "Spatially resolved measurements of Fermi level pinning."

J. E. Demuth, "Scanning tunneling microscopy of surface defects."

23 July

L. Samuelson, discussion leader

J. Lagowski, "EL2 and other intrinsic defects in As-grown and annealed GaAs."

B. Meyer, "The microscopic model of EL2."

H. J. VonBardeleben, "EPR of intrinsic defects in GaAs."

E. R. Weber, discussion leader

H. J. Queisser, "Defects: Such solid, stately entities."

24 July

S. T. Pantelides, discussion leader

J. Kahn, "H-related defects in Si and Ge: Static or dynamic defects?"

N. M. Johnson, "Hydrogen diffusion and impurity passivation in semiconductors."

M. J. Stavola, "IR-measurements of H-acceptor complexes."

G. deLeo, "Calculations of vibrational properties of H-related defects."

Polyamines

Colby-Sawyer College (S)

Laurence J. Marton, chairman;
Rowland Davis and Peter P. McCann, co-vice chairmen

6 July

Comparative aspects: S. S. Cohen and C. J. Bacchi, discussion leaders

T. Oshima, "Distribution and biochemical functions of unusual polyamines in thermophilic eubacteria and archaeobacteria."

J. Martin-Tanguy, "Morphogenesis, growth, and content of hydroxycinnamoyl-putrescine and other amines in leaf explants of tobacco cultivated in vitro."

A. J. Bitonti, "Polyamines and parasitic protozoa."

Molecular activity and function I: C. M. Calderera and N. Seiler, discussion leaders

T. Oka, "Functional role of polyamines in hormonal stimulation of mammary gland development."

F. Schuber, "Influence of polyamines on membrane functions."

7 July

Molecular activity and function II: H. Tabor and K. Igarashi, discussion leaders

I. D. Algranati, "Polyamines and fidelity of translation: Effects of aminoglycoside antibiotics."

V. A. Bloomfield, "DNA condensation by polyamines and other ions."

J. Parelo, "Interactions of polyamines with chromatin and their functional implications."

Molecular biology I: O. Janne and E. Holta, discussion leaders

P. Coffino, "Ornithine decarboxylase: Molecular biology."

C. Kahana, "Expression of mammalian ornithine decarboxylase during cellular growth."

8 July

Molecular biology II: D. R. Morris and S.-I. Hayashi, discussion leaders

C. White Tabor, "AdoMet decarboxylase of *Escherichia coli*: Nucleotide sequence of Spe D and processing of a proenzyme."

W. Fonzi, "Structure and regulation of the ODC gene of *S. cerevisiae*."

R. Malmberg, "Molecular regulation of arginine decarboxylase in plants."

Metabolic regulation: U. Bachrach and C. Byus, discussion leaders

A. Pegg, "Regulation of ornithine and S-adenosylmethionine decarboxylases."

E. W. Gerner, "Regulation of ornithine decarboxylase degradation by putrescine and spermidine."

9 July

Inhibitors of polyamine synthesis and function: C. W. Porter and R. J. Bergeron, discussion leaders

J. Coward, "Aminopropyltransferases: Mechanistic studies and design of specific inhibitors."

P. Mamont, "Biochemical and biological properties of fluorinated derivatives of polyamines."

R. Casero, "The differential sensitivity of human tumors to agents which interfere with polyamine metabolism."

Clinical aspects: H. G. Williams-Ashman and J. Janne, discussion leaders

A. Sjoerdsma, "Clinical status of efformithine. HCl (DFMO/Ornidyl) and other ODC inhibitors in the treatment of parasitic diseases."

S. Baylin, "Status of polyamine biosynthesis inhibition in the treatment of cancer."

10 July

Neoplasia and differentiation: O. Heby and G. Luk, discussion leaders

T. O'Brien, "Regulation of ODC in normal and neoplastic mouse epidermis."

Z. Canellakis, "Polyamines in healthy and diseased lymphocytes."

B. Giffin, "Role of polyamines in the cellular differentiation of trypanosomes."

Abstracts for poster presentations should be sent to: Dr. Laurence Marton, Department of Laboratory Medicine, L-518, University of California, San Francisco, CA 94143-0134, by 10 April 1987. Notification of acceptance of poster will be made by 22 May 1987.

Polymer Colloids

Tilton School

R. H. Ottewill, chairman; I. Piirma, vice chairman

6 July

R. H. Ottewill, discussion leader

D. M. Pickelman, "Polymer colloids stabilized by reactive polymeric surfactants."

I. Piirma, "Polymeric surfactants."

J. W. Vanderhoff, discussion leader

D. H. Napper, "Coagulative processes in latex nucleation: What really determines latex polydispersity?"

W. Donners, "Emulsifier-polymer complexation and its influence on particle formation."

7 July

D. G. Rance, discussion leader

M. D. Croucher, "Use of nonaqueous polymer colloids in reprographic technologies."

C. J. van Oss, "Polar and apolar interactions of polymers."

Short contributions.

R. Gilbert, discussion leader

F. Candau, "Stability, conditions for inverse micellization."

R. Pelton, "Novel poly(*N*-isopropylacrylamide) latices."

8 July

J. W. Goodwin, discussion leader

C. F. Zukowski, "The electrical control of polymer colloid suspension viscosity."

M. S. El-Aasser, "Miniemulsion copolymerization."

R. Wessling, discussion leader

R. Satgurunathan, "Preparation and characterization of aqueous nonionic latices."

J. W. Vanderhoff, "Non-spherical latex particles."

9 July

M. S. El-Aasser, discussion leader

J. Waters, "Self-stable dispersions of block copolymers in alkanes."

K. Hahn, "Coalescence of latex particles in film formation."

I. Krieger, discussion leader

T. F. Tadros, "Viscoelastic properties of concentrated polymer latex dispersions."

Short contributions.

10 July

I. Piirma, discussion leader

J. Ugelstad, "Polymer colloids in the biosciences."

Speaker and subject to be announced.

Polymers

Colby-Sawyer College (N)

James E. McGrath, chairman;
Lloyd Taylor, vice chairman

29 June

Free radical homo- and copolymerization

W. J. Bailey, discussion leader

J. H. O'Donnell, "Mechanisms of free radical copolymerizations."

H. W. Gibson, discussion leader

A. Janowicz, "Hydrogen transfer catalysis: Molecular weight control in free radical polymerizations."

J. Koberstein, presiding: Introduction of Monday 5 p.m. poster presentations.

O. Vogl, discussion leader

S. Heilman, "Azlactone-reactive polymers."

V. Percec, discussion leader

J. C. Salamone, "Synthesis of amphilic copolymers."

30 June

Ionic and coordination polymerization

J. P. Kennedy, discussion leader

P. Teyssie, "Synthesis, properties and uses of selected block copolymers of acrylates or methacrylates."

M. Galvin, discussion leader

M. Fontanille, "Anionic-to-coordination transformation polymerization."

H. J. Harwood, discussion leader

H. Hocker, "Metathesis reactions of unconventional cycloolefins with conventional and carbene type catalysts."

A. Noshay, discussion leader

N. Brockmeier, "Polypropylene processes."

J. J. O'Malley, discussion leader

A. Rudin, "Characterization of molecular weight and branching in polyolefins."

1 July

Transport and physical structure

L. M. Robeson, discussion leader

D. R. Paul, "Permeability and transport processes in polymers."

M. Bitritto, discussion leader

Y. Yamashita, "Permeability and surface behavior of graft copolymers."

S. R. Turner, presiding: Introduction of 5 p.m. poster presentations.

G. L. Wilkes, discussion leader

J. S. Higgins, "Neutron scattering of block copolymers and blends."

R. D. Allen, discussion leader

M. J. Bowden, "Advances in polymeric materials as photoresists."

2 July

High-performance and specialty materials

P. C. Juliano, discussion leader

E. Nield, "A chemical approach to the development of polyether ketone/carbon fiber composites."

R. M. Ikeda, discussion leader

J. Bendler, "Conformational studies of aromatic polycarbonates."

R. Eby, discussion leader

H. Reimschuessel, "Environmental stress-crack behavior of semicrystalline fluoropolymers."

J. Economy, discussion leader

P. M. Hergenrother, "Advances in matrix resins for polymeric composites."

3 July

Degradation and stabilization

L. Taylor, presiding

S. Israel, discussion leader

W. H. Starnes, Jr., "Stabilization of polyvinyl chloride and related materials."

D. Garcia, discussion leader

E. M. Pearce, "Degradation of polymer blends."

J. S. Riffle, discussion leader

Speaker and subject to be announced.

Population Biology and Evolution of Microorganisms

Plymouth State College (S)

Barry G. Hall, chairman; Daniel Dykhuizen and Renee Fitts, co-vice chairmen

17 August

Molecular phylogenies: J. Maniloff, discussion leader

J. Felsenstein, "Inferring phylogenies from molecular data: What statistics say."

N. Pace, "Natural microbial population analysis by ribosomal RNA phylogeny."

Howard Ochman, "Evolution of bacteria: Evidence for a universal substitution rate."

Mutation rates: J. Drake, discussion leader

B. Hauer, "Adaptation of coryneform bacteria to novel resources."

J. Cairns, "Factors that determine spontaneous mutation rates."

18 August

Recombination and clonality in population structure: B. Levin, discussion leader

F. Orskov, "The intestinal Gram-negative flora and the selection of pathogenic clones."

D. Dykhuizen, "The importance of horizontal gene exchange in maintaining *E. coli* as a separate species."

C. Stephens, "Interaction of clonality and recombination in the DNA sequence evolution of microorganisms."

Adaptation to pathogenicity: B. Stocker, discussion leader

C. S. Eden, "Mechanisms of bacterial pathogenicity: Some evolutionary considerations."

S. Yokoyama, "Molecular evolution of human immunodeficiency (AIDS) virus."

19 August

Genome organization: R. Fitts, discussion leader

R. Fitts, "Organization and expression of Lac genes in *Salmonella*."

M. Schmid, "Evolutionary constraints imposed by the physical organization of the bacterial chromosome."

C. Hill, "A novel family of genetic elements with an unusual conservation among *Escherichia coli* isolates."

Physiological basis of adaptation: E. C. C. Lin, discussion leader

B. Helling, "Evolution during growth in a constant environment."

H. Westeroff, "Principle of metabolic

control: Implications and applications."

20 August

Extrachromosomal elements in evolution: D. Botstein, discussion leader

S. Silver, "The same genes for plasmid determined resistance to mercury and arsenic are present in Gram-positive and Gram-negative bacteria."

R. Condit, "Transposons as parasitic DNA: The importance of infectious transfer."

R. Deonier, "IS and Tn elements as determinants of F' plasmid structure."

Release of genetically engineered organisms: R. Hanson, discussion leader

R. Hanson, "Ecosystems analyses to define the impact of the release of genetically engineered microorganisms."

G. Saylor, "Genetic complexity analysis of aquatic microbial communities."

21 August

Summary and discussion session: D. Hartl, discussion leader

A. Campbell and D. Hartl, summarizers.

Proteins

New Hampton School

David C. Richardson and C. Robert Matthews, co-chairmen

22 June

Comparison of x-ray and NMR techniques for determining protein structures: F. Richards, chairman

F. Richards, "Perspectives on structural determinations."

K. Wuthrich, "Proteins by NMR: Metallothionein."

D. Stout, "X-ray crystal structure of metallothionein at 1.9 Å resolution."

R. Klevit, "NMR structure of histidine-containing phosphocarrier protein."

Structure of antibody-antigen complexes: D. Davies, chairman

D. Davies, "Three dimensional structure of antibodies."

S. Sheriff, "Antibody-antigen complexes with a lysozyme epitope containing arginines 45 and 68."

H. McConnell, "Structures and function of major histocompatibility complexes."

P. Colman, "Structures of a complex between influenza virus neuraminidase and an antibody."

23 June

Amino acid replacement as a probe of peptide and protein folding: R. Baldwin, chairman

R. Baldwin, "Alpha helix formation by peptides in aqueous solution."

B. Nall, "Proline isomerization and the folding of yeast cytochrome c."

E. Stellwagen, "Mutagenesis and the folding of thioredoxin."

P. Wright, "Formation of reverse turns by short peptide fragments of proteins in water solution."

Biophysical studies of protein export

across membranes: L. Gierasch, chairman

L. Gierasch, "Biophysical studies of protein export."

L. Randall, "Competent state of maltose-binding protein during export from *E. coli*."

R. Dalbey, "Mechanisms of membrane assembly and protein secretion."

24 June

Computer simulations to calculate thermodynamic quantities: I. Kuntz, chairman

I. Kuntz, "Perspectives on computer simulations."

A. McCammon, "Molecular dynamics and molecular design."

W. Goddard, "Simulations of proteins and binding of small molecules—thermodynamics and force field parameters."

P. Bash, "Drug design and protein engineering using thermodynamic perturbation methods."

Mechanisms of electron transfer in proteins: G. McClendon, chairman

G. McClendon, "Long-distance electron transfer in proteins—what determines the rates?"

B. Hoffman, "Cyt c-reductase complex, rates versus amino acids in interface."

J. Winkler, "Electron transfer in ruthenium-modified cytochrome c."

25 June

The structural roles of side chains in membrane proteins: M. Schiffer, chairman

M. Schiffer, "High-resolution structures of membrane proteins."

H. Deisenhofer, "Side-chain analysis of helices in *R. viridis* reaction center."

D. Rees, "Side-chain analysis of helices in *R. sphaeroides* reaction center."

D. Engelman, "Prediction of membrane protein structures."

G. Petsko, "Buffon's problem: The relationship of Oriental Gambling Games to protein structure and stability."

26 June

Civil engineering of proteins—mutagenesis and cooperative transitions: G. Ackers, chairman

G. Ackers, "Mutagenic studies on the self control of human hemoglobin."

D. Shortle, "Stability mutants in staphylococcal nuclease."

W. Becktel, "Perturbation of stability and relation to structural changes in T4 lysozyme."

Poster chairman: David Brems.

Quantitative Structure Activity Relationships

Plymouth State College (N)

A. J. Hopfinger, chairman: W. J. Dunn, vice chairman

20 July

G. Smith, discussion leader

P. Goodford, "Probing macromol-

ecules for energetically favorable binding sites."

J. A. McCammon, "Thermodynamic cycle-perturbation studies of ligand-biopolymer binding."

B. Robson, "High-speed molecular dynamics techniques in the design of novel peptides and proteins."

Poster session: G. Coats, discussion leader

21 July

E. M. Hodnett, discussion leader

Y. C. Martin, "The use of QSAR in the design of dopaminergic drugs."

W. Ashman, "Receptor modeling using molecular modeling and QSAR."

C. Barfknecht, "The use of QSAR in the design of ophthalmic drugs."

H. Weintraub, discussion leader

D. Weininger, "GENIE: A software tool for drug design."

N. Ostlund, "Machine architecture and the systolic loop."

22 July

H. Kubinyi, discussion leader

E. R. Davidson, "Basis set selection for molecular calculations."

M. L. Connolly, "Protein docking."

I. Moriguchi, "Adaptive least squares and its use in QSAR."

Poster session: J. Block, discussion leader

23 July

D. Boyd, discussion leader

R. Wolfenden, "Waterlogged molecules."

D. Beveridge, "The aqueous solution properties of small molecules."

W. Jorgensen, "Computer simulations of aqueous organic and biomolecular systems."

A. Leo, discussion leader

R. W. Taft, "Linear free energy relationships and drug design: A perspective."

T. Fujita, "Linear free energy relationships and QSAR."

C. Hansch, "QSAR: Twenty-five years."

24 July

E. Johansson, discussion leader

S. Wold, "The design of test series."

M. Johnson, "New tools for drug design based on lattice-like spaces for quantifying structural similarity."

P. Magee, "A new approach to active site binding analysis."

Reactive Polymers, Ion Exchangers and Adsorbents

Salve Regina College

Jacob A. Marinsky, chairman; Linda N.-H. Wang, vice chairman

3 August

Preparation, structure and function of reactive polymers: E. L. Albright, chairman

M. C. Caruthers, "Nucleic acid synthesis on polymeric supports."

A. Warshawsky, "Zerovalent metal polymer composites: From ion exchangers to controlled materials with conductive, catalytic or magnetic properties."

H. C. Alcock, "Reactive polymers for the immobilization of organic bioactive agents and transition metal catalysts."

Preparation, structure and function of reactive polymers: E. Katzir, chairman

H. Ringsdorf, "Synthesis of polymeric liposomes for attempts to mimic biomembrane processes."

F. F. Cantwell, "Determination of free metal ion concentration using covalently bound ligands."

4 August

The influence of structural and functionality parameters on the physicochemical properties of reactive polymers: G. Janauer, chairman

A. Barbucci, "Retention of heparin blood coagulant properties in various surface coatings."

V. Soldatov, "A new fibrous resin, Fiban AK-22."

G. Schmuckler, "The extraction of metal salts from aqueous solutions with mixed liquid ion exchangers."

The influence of structural and functionality parameters on the physicochemical properties of reactive polymers: W. T. Ford, chairman

C. Martin, "Transport in electronically conductive polymers."

M. Pesavento, "The sorption of protons and metal ions from aqueous solutions by a strongly basic anion exchange resin loaded with sulfonated-azo dyes."

5 August

The implications of structure and functionality on the chemistry of naturally occurring organic acids (fulvic and humic): P. MacCarthy, chairman
J. A. Marinsky, "Analysis of effects of polyelectrolyte structure and functional heterogeneity on proton and metal ion interactions with fulvic acid."

C. T. Chiou, "Solubility enhancement of organic contaminants by dissolved humic and fulvic acids from soils of aquatic origin."

J. A. Leenheer, "The concept of the number average structural model."

Recent developments in the thermodynamically-based treatment of the ion-exchange phenomenon: R. Kunin, chairman

E. Hogfeldt, "A model for the anticipation of ion-exchange behavior in every kind of exchanger."

J. Inczedy, "A concentrated electrolyte solution model for the anticipation of ion-exchange equilibria."

6 August

Mass transfer processes—application and fundamentals: D. Clifford, chairman

D. Eberl, "Fertilizing by ion exchange."

L. M. N. Wang, "Ion-exchange chromatography for separating concentrated amino acid mixtures."

R. Paterson, "Network thermodynamics modeling—functionality and structural effects."

The C. Calmon poster session—New developments in reactive polymers, ion exchangers, and adsorbents technology: F. X. McGarvey, chairman

7 August

The physical chemistry of proteins: A. Hershman, chairman

M. Bales, "The adsorption of proteins on polymer surfaces."

S. Danielson, "The activities of proteins adsorbed on polymer surfaces."

F. Regnier, "The use of adsorbed polymer layers in the preparation of chromatographic packings or sorbents."

Red Cells

Plymouth State College (N)

Vann Bennett, chairman; Bernard Forget, vice chairman

17 August

Membrane proteins—organization and regulation: C. Cohen, discussion leader

E. Lazarides, "Control of differentiation in early erythroid development."

V. Bennett, "Regulation of membrane structural proteins by calcium and limited proteolysis."

M. Tao, "Effect of phosphorylation on the interactions of erythrocyte membrane cytoskeletal proteins."

Molecular biology of non-globin gene expression in red cells: E. J. Benz, Jr., discussion leader

H. Lodish, "Gene families for band 3 and glucose transporter proteins."

J. Conboy, "Expression of the gene for band 4.1 protein."

18 August

Hematopoiesis and growth factors: D. Golde, discussion leader

J. Adamson, "In vitro and in vivo biological effects of human erythropoietin."

C. Rettenmier, "Function of the *fms* oncogene (CSF-1 receptor) in normal and transformed cells."

S. Clark, "Biological activity of human IL-3."

Membrane proteins in normal and pathological erythrocytes: N. Mohandas, discussion leader

S. Marchesi, "Abnormal cytoskeletal proteins in hereditary elliptocytosis and spherocytosis."

J. Barker, "Cytoskeletal proteins in spectrin-deficient mice."

19 August

Regulation of globin gene expression: B. G. Forget, discussion leader
F. Costantini, "Globin gene expression in transgene mice."

J. B. Lingrel, "Trans-acting factors for globin genes."

T. Papayannopoulos, "Insights into hemoglobin switching through study of interspecies cell hybrids."

Blood antigens as molecules: W. Rosse, discussion leader

C. Redman, "Kell blood group antigens."

P. Agre, "Purification of the Rh(D)-associated integral membrane protein."

20 August

Malaria: R. Howard, discussion leader

T. Hadley, "Blood group antigens and invasions of erythrocytes by malaria

parasites."

M. Jungery, "A protein of *P. falciparum*-infected RBC's functions as a transferrin receptor."

M. Perkins, "Red cell surface molecules involved in malarial parasite invasion."

S. Lux, discussion leader

Selected poster.

21 August

Gene transfer into hematopoietic cells: A. W. Nienhuis, discussion leader

A. D. Miller, "Vector design."

A. Bernstein, "Transfer of genes into marrow stem cells."

D. Williams, "Expression of genes transferred into hematopoietic cells by retroviruses."

Reverse Osmosis, Ultrafiltration and Gas Separation

Proctor Academy

Allen Zelman, chairman; Bill Koros, vice chairman

3 August

Physics of transport through small pores: E. Mason, discussion leader

C. Bean, "Electrical properties of fine charged pores."

A. Mauro, "Water transport through small pores."

A. Parsegian, "Molecular solution in ion transport."

Structure and function: Sonja Krauss, discussion leader

R. E. Kesting, "Integrally skinned membranes for gas separation."

A. K. Fritzsche, M. K. Murphy, "Structural aspects of gas separation membranes."

4 August

Membrane fouling and boundary layers: C. Colton, discussion leader

R. Davis, "Fluid dynamic modeling of cake layers in cross flow filtration."

R. F. Probstein, P. C. Renaud, "Colloidal fouling elimination in reverse osmosis by the threshold velocity phenomena."

Z. Baouquand, "Recent developments in R.O. and U.F. in P.R.C."

Solution-membrane interfaces: T. Matsuura, discussion leader

B. Farnand, "Preferential adsorption and R.O. performance."

W. Deen, "Hindered transport in liquid-filled pores of molecular dimensions."

5 August

Ionic membranes: J. Kwak, discussion leader

H. I. Yeager, "Polymer structure and ionic permselectivity in perfluorinated ionomer membranes."

M. Pineri, "Structure and function: small angle x-ray, neutron scattering, RPE, Mössbauer, and NMR."

J. A. M. Smit, "The correlation between salt rejection and salt permeability in charged membrane systems."

New concepts in U.F.: R. F. Madsen, discussion leader

E. Leonard, "Fluid dynamic model of ultrafiltration."

R. F. Madsen, "Non-Newtonian flow during high flux ultrafiltration."

6 August

Time-dependent changes in R.O. permeability and selectivity: J. K. Beasley, discussion leader

A. Berens, "Thermal- and solvent-induced relaxations in polymers."

T. Nakagawa, "Time and history-dependent effects in glassy trimethylsilyl propyne for gas separations."

E. S. Sanders, "Time- and history-dependent effects in asymmetric membranes used for gas separation."

Looking toward the future: L. Zeman, discussion leader

R. Flewelling, "Molecular energetics of membrane transport."

D. Spatz, "Where do we go from here?"

7 August

New developments and techniques: R. A. Wessling, discussion leader

A. Tanioka, "Structure of glassy polymer membranes by gas permeation techniques."

S. Han, "Treatment of industrial waste effluents with polysulfon hollow fiber V.P. membranes."

G. Tkacik, "Component mobility analysis in membrane forming systems."

Second Messengers and Protein Phosphorylation

Kimball Union Academy

John P. Perkins, chairman; Charles S. Rubin, vice chairman

15 June

Mechanism of hormonal activation of adenylate cyclase: L. Birnbaumer, chairman

P. Casey, "A molecular model for G-protein activation of adenylate cyclase."

R. Cerione, "Receptor/G-protein interactions in reconstituted phospholipid vesicles."

Y. Salomon, "The role of Ca^{++} in the regulation of adenylate cyclase by MSH."

Regulation of receptor function by phosphorylation: R. J. Lefkowitz, chairman

H. Kuhn, "Regulation of rhodopsin function by phosphorylation."

R. Haganir, "Regulation of acetylcholine receptor desensitization by phosphorylation."

16 June

The physiological role of receptors that mediate inhibition of adenylate cyclase: L. Limbird, chairman

E. Neer, "GTP-binding proteins and transmembrane signaling."

A. Brown, "G-proteins and ion channels."

D. Lewis, "Somatostatin modulation of voltage-sensitive Ca^{++} channels and ACTH secretion in ATT-20 cells."

Desensitization, endocytosis and down-regulation of B-adrenergic receptors: J. Perkins, chairman

R. B. Clark, "Homologous desensitization of B-receptors in S49 lymphoma cells."

P. B. Molinoff, "Multiple pathways of B-receptor down-regulation."

17 June

Mechanisms of activation of the PI cascade: J. Fain, chairman

A. Hall, "The GTPase activity of p21ras gene products: Are these G-proteins, and are they linked to phosphoinositide turnover?"

S. G. Rhee, "The isolation, characterization and structural analysis of the soluble phospholipase C from bovine brain."

T. K. Harden, "Muscarinic receptor-mediated, G-protein-dependent activation of a cAMP phosphodiesterase."

Integration of the effects of multiple second messengers: H. Rasmussen, chairman

D. L. Alkon, "Ca⁺⁺-dependent protein kinases and associative learning."

J. Wang, "Molecular interactions between cAMP and Ca⁺⁺ messengers."

18 June

New perspectives on the physiological role of cyclic GMP: F. Murad, chairman

D. Garbers, "The role of cyclic GMP in fertilization."

M. Bitensky, "The role of cyclic GMP in the retina."

S. Waldman, "The role of cyclic GMP in the intestine."

Neuronal phosphoproteins and their physiological significance: J. Perkins, chairman

P. Greengard, speaker.

19 June

Structural analysis of the B-adrenergic receptor: C. C. Malbon, chairman
R. Dixon, "Cloning and expression of the human B-receptor gene."

T. Higashijima, "Analysis of the primary structure of the B-receptor of turkey erythrocytes."

B. Kobilka, "Molecular biology of B-adrenergic receptors."

Separation and Purification

Colby-Sawyer College (N)

Richard D. Noble, chairman; Edward L. Cussler, vice chairman

10 August

R. A. Bartsch, discussion leader

D. H. Busch, "Longevity, the critical factor in oxygen carrier design."

W. S. W. Ho, "Olefin separations via complexation with cuprous diketone."

A. L. Bunge, discussion leader

S. D. Alexandratos, "Design and development of metal-ion separations with dual mechanism ion exchange-redox/coordination/precipitation resins."

M. M. Sharma, "New strategies in separation of close boiling substances."

11 August

E. L. Cussler, discussion leader

J. D. Way, "Facilitated transport membranes for hydrogen production."

C. J. D. Fell, "Solvent swollen/filled membranes for recovery of heavy molecular weight components from gas streams."

E. L. Cussler, discussion leader

D. W. Deetz, "Stabilized liquid membranes for gas separations."

J. Draxler, "Industrial scale process for zinc removal using emulsion liquid membranes."

12 August

T. A. Hatton, discussion leader

P.-A. Albertsson, "Separation of biopolymers and cell particles by partition in aqueous-aqueous two-phase systems."

C. J. van Oss, "Aqueous phase partitioning mechanism and its implications."

J. Shaeiwitz, discussion leader

C. Fabiani, "Physicochemical aspects of transport in an implantable bio-artificial pancreas."

E. Drioli, "Enzyme membranes and enzyme membrane reactors in biotechnological processes."

13 August

M. L. Heinitz, discussion leader

P. K. Dasgupta, "Trace and ultratrace analysis of ionic species."

W. Nitsch, "The importance of surfactants for the kinetics in liquid-liquid systems."

G. Pez, discussion leader

L. A. Robbins, "Industrial scale separation of parts per quadrillion dioxin from water."

W. F. Prouty, "Large-scale purification of recombinant human insulin."

14 August

M. L. Heinitz, discussion leader

H. A. Chase, "Optimization of fixed bed adsorption separation of proteins."

M. V. Novotny, "Microcolumn separation methods."

There will be a poster session from 5:00 to 6:00 and from 9:30 to 10:30 on Tuesday evening, 11 August. A second poster session will be held on Thursday if there is sufficient interest. Title and abstract should be submitted by 1 May 1987 to Richard D. Noble, National Bureau of Standards, Center for Chemical Engineering 773.1, Boulder, CO 80303.

Space Plasma Physics

Salve Regina College

Thomas W. Hill, chairman; Melvyn L. Goldstein, vice chairman

Cosmic Plasma/Gas/Dust Interactions

13 July

N. Brenning, discussion leader

G. Haerendel, "Critical ionization velocity—models and applications."

R. Torbert, "Critical ionization velocity—laboratory and space observations."

O. Havnes, discussion leader

C. K. Goertz, "Charging of dust grains."

14 July

A. F. Nagy, discussion leader

P. A. Cloutier, "Solar-wind interaction with unmagnetized planets."

J. A. Luhmann, "Solar-wind interaction with unmagnetized planets."

L. J. Lanzerotti, discussion leader

A. F. Cheng, "Ion sputtering in space."

15 July

D. A. Mendis, discussion leader

W. I. Axford, "Models of the solar-wind comet interaction."

T. I. Gombosi, "Solar-wind effects on evolution of comets."

W. Ip, discussion leader

C. T. Russell, "Solar-wind interaction with meteor dust trails."

16 July

J. M. Shull, discussion leader

A. Tielens, "Plasma interactions with interstellar dust."

T. Mouschovias, "Magnetic diffusion in protoplanetary cloud collapse."

T. J. Northrop, discussion leader

G. Morfill, "Magnetosphere/ring interactions."

17 July

A. J. Dessler, discussion leader

R. A. Brown, "Magnetosphere interactions with satellite Tori—observations."

R. A. Smith, "Magnetosphere interactions with satellite Tori—theoretical models."

Spectroscopy of Matrix Isolated Species

Plymouth State College (S)

Martin Moskovits, chairman; V. E. Bondybey, vice chairman

10 August

W. Schulze, discussion leader

E. Schumacher, "Mass-selected clusters in matrices."

K. Rebane, "Impurity centers in solids."

E. Knozinger, "Inelastic neutron scattering from matrix-isolated complexes."

G. A. Ozin, discussion leader

D. Lindsay, "ESR studies and computations on clusters in matrices."

A. Leger, "Astrophysical molecules and clusters."

11 August

M. Moskovits, discussion leader

J. Jortner, subject to be announced.

J. Tulley, subject to be announced.

S. Fischer, subject to be announced.

H. Frei, discussion leader

J. Shirk, "Photoisomerization in matrices."

M. Tasumi, "Photoreactions."

12 August

R. Hauge, discussion leader

R. Perutz, subject to be announced.

M. Poliakoff, subject to be announced.

B. Mile, "ESR studies."

A. Oskam, discussion leader

L. Andrews, subject to be announced.

A. Downs, subject to be announced.

13 August

W. Weltner, discussion leader

J. Nibler, subject to be announced.

N. Schwentner, "Vibrational and electronic relaxation."

P. Montano, "EXAFS studies of small metal clusters."

V. Bondybey, discussion leader

G. Pimental, subject to be announced.

J. Turner, subject to be announced.

14 August

F. Froben, discussion leader

S. Leach, "Matrices and astrophysics."

L. Abouaf, subject to be announced.

L. Knight, "Reactive laser sputtering/matrix ESR."

Statistics in Chemistry and Chemical Engineering

New Hampton School

James M. Lucas, chairman; Gerald J. Hahn, vice chairman

27 July

John Nelder, discussion leader

R. W. Oldford, "Integrated software environment for data analysis."

M. L. Deaton, discussion leader

R. H. Myers, "Response surface methodology: Current status and future directions."

28 July

W. R. Gaffey, discussion leader

M. Zelen, "Relating environmental hazards to adverse health effects: A case study."

P. E. Fortini, discussion leader

C. A. Fung, "Statistical design and analysis for quality improvement: Some recent developments."

29 July

K. Kafadar, discussion leader

E. R. Tuft, "Statistical graphics and information design."

J. F. Lawless, discussion leader

T. J. Harris, "A time series approach to quality control."

30 July

W. Q. Meeker, Jr., discussion leader

W. B. Nelson, "Repair data analysis."

A. C. Atkinson, discussion leader

R. R. Hocking, "Diagnostic analysis for unbalanced ANOVA models."

31 July

P. W. M. John, discussion leader

J. G. Voelkel, "Supersaturated designs."

Structural Macromolecules: Collagen

Holderness School

Robert Burgeson and Thomas Linsenmayer, co-chairmen

13 July

- J. Gross, discussion leader
D. Birk, "Assembly of collagen types I and V: Interactions as heterotypic fibrils."
R. Bruns, "Assembly of type VI collagen and associated structures."
A. Veis, "Synthesis pauses during the assembly of type I collagen."
J. Fessler, discussion leader
H. Sage, "Type VIII collagen in development."
G. Lunstrum, "The structure and function of type VII collagen."

14 July

- R. Mayne, discussion leader
R. Bruckner, "Structure of type IX collagen."
Y. Yamada, "Structure and function of cartilage proteoglycans."
E. Conrad, "Metabolism of chondrocytes in calcified cartilage."
R. Timpl, discussion leader
L. Sakai, "Biosynthesis and structure of fibrillin."
H. Erickson, "Hexabrachion protein in embryonic and tumor extracellular matrix."

15 July

- B. Olsen, discussion leader
B. de Crombrughe, "Factors involved in transcriptional control of collagen genes."
F. Ramirez, "Type I collagen: Genetic rescue of a lethal embryonic mutation in transgenic mice."
R. Jannish, "The fibrillar collagen sub-family of genes."
A. Kang, discussion leader
S. Krane, "Alterations of collagen deposition and degradation in inflammation."
D. Prockop, "Mutations in type I collagen genes and their consequences in man."

16 July

- E. Hay, discussion leader
R. Mecham, "Matrix influences in elastogenesis."
J. McPherson, "Influence of extracellular matrix on responses of cells to growth factors."
E. Engvall, "Interaction of laminin and merosin with cells."

- E. Ruoslahti, "The RGD cell adhesion and recognition system."

17 July

- A. Eisen, discussion leader
C. Biswas, "Collagenase stimulatory factor and the tumor cell surface."
G. Murphy, "Connective tissue metalloproteases."
G. Goldberg, "Comparative analysis of secreted human metalloendoproteases."

Thermoset Polymers

Colby-Sawyer College (S)
Donald Hunston, chairman; Ronald Bauer, vice chairman

22 June

- C. May, discussion leader
K. J. Bruza, "Benzocyclobutene: A masked reactive functionality leading to advanced resins."
H. H. Chuah, L. S. Tan, "Processing and properties of poly(*p*-phenylene benzobisthiazole) / benzocyclobutene molecular composites."
K. Riew, discussion leader
D. Shimp, "Polycyanurates-cyclotrimers: polymerization aspects and structure/property relationships."
A. Renner, "Allylnadic-imides, a new class of heat resistant thermosets."

23 June

- C. Feger, discussion leader
S. Senturia, "Polyimides in microelectronics: critical properties and how we measure them."
T. Russell, "Unusual characteristics of an aromatic polyimide."
G. McKenna, discussion leader
H. Brown, "Self-adhesion of polyimides."
A. J. Kinloch, "Toughening mechanisms in thermoset polymers."

24 June

- A. J. Kinloch, discussion leader
A. Roulin-Moloney, "Fractography and failure mechanisms in filled epoxy resins."
W. Bradley, "Fracture studies in neat and fiber reinforced thermoset resins."

- N. Johnston, discussion leader
K. Dusek, "Advances in network build-up during curing of thermoset resins."

- D. Plazek, "Properties of epoxy resins during and after curing."

25 June

- C. Lee, discussion leader
C. Macosko, A. Hale, H. Bair, "Property development during curing for epoxy novalac systems."
J. Gillham, "Formation and properties of thermosetting systems."
Poster session R. Bauer, coordinator.
D. Hunston, discussion leader
N. Johnston, "Thermoset and thermoplastic composites: Room for both?"

26 June

- R. Bauer, discussion leader
J. M. Verglund, "Modeling of the cure process in thermosets: Theory and applications."
Z. Sanjana, "Monitoring the cure process using acoustic and dielectric techniques."

Three-Dimensional Electron Microscopy of Macromolecules

Salve Regina College
Nigel Unwin, chairman; David DeRosier, vice chairman

6 July

- Developments in methods of three-dimensional reconstruction: D. J. DeRosier, discussion leader
D. Winkelman, M. Radermacher, R. Crowther.
Cryo-electron microscopy: J. Dubochet, discussion leader
R. Milligan, W. Baumeister.

7 July

- High resolution studies of crystals: R. Henderson
K. Downing, R. Bullough, W. Chiu.
Organelles: D. Caspar, discussion leader
K. Leonard, S. Fuller.

8 July

- Site-specific labelling: M. Stewart, discussion leader

- J. Hainfield, T. Ceska, C. Akey.
Membrane proteins: R. Stroud, discussion leader
B. Jap, W. Kuhlbrandt.

9 July

- Filaments: T. Wakabayashi, discussion leader
E. Egelman, U. Aebi, J. Deatherage.
Discussion of selected posters: R. Glaeser, discussion leader

10 July

- New approaches in structural cell biology: E. Mandelkow, discussion leader
P. Tulloch, J. White, A. Engel.

Ultrashort Wavelength Lasers

Colby-Sawyer College (N)
Dwight Duston, chairman; Jack Davis, vice chairman

24 August

- M. K. Matzen, session chairman
J. Apruzese, A. Hauer.
P. Kepple, session chairman
F. Hartman, C. Collins

25 August

- B. Yaakobi, session chairman
P. Hagelstein, P. Jaegle.
J. Davis, session chairman
M. Krishnan, S. Maxon.

26 August

- G. Baldwin, session chairman
L. Biedenham, G. Hoy.
D. Duston, session chairman
J. Madey, H. Griem.

27 August

- D. Matthews, session chairman
G. Pert, W. Silvast.
J. Schiffer, session chairman
M. Weiss, G. Stevenson.

28 August

- H. Griem, session chairman
E. McGuire, S. Harris.