Gordon Research Conferences

Alexander M. Cruickshank

The Gordon Research Conferences for the summer of 1977 will be held in New Hampshire and California.

Purpose. The Conferences were established to stimulate research in universities, research foundations, and industrial laboratories. This purpose is achieved by an informal type of meeting consisting of scheduled speakers and discussion groups. Sufficient time is available to stimulate informal discussion among the members of each conference. Meetings are held in the morning and in the evening, Monday through Friday, with the exception of Friday evening. The afternoons are available for recreation, reading, or participation in discussion groups as the individual desires. This type of meeting is a valuable means of disseminating information and ideas to an extent that could not be achieved through the usual channels of publication and presentation at scientific meetings. In addition, scientists in related fields become acquainted and valuable associations are formed that often result in collaboration and cooperative efforts among laboratories.

It is hoped that each conference will extend the frontiers of science by fostering a free and informal exchange of ideas among persons actively interested in the subject under discussion. The purpose of the program is to bring experts up to date on the latest developments, to analyze the significance of these developments, and to provoke suggestions concerning the underlying theories and profitable methods of approach for scientific research. The review of known information is not desired.

In order to protect individual rights and promote discussion it is an established requirement of each conference that no information presented is to be used without specific authorization of the individual making the contribution, whether in formal presentation or in discussion. Scientific publications are not prepared as emanating from the Conferences. The recording of lectures by tapes, and so forth and the photography of slides are prohibited.

Registration and reservations. Individuals interested in attending the Conferences are requested to send their applications to the office of the Director. It is important that you submit your application promptly in order that it may be given early consideration by the review committee. This is particularly necessary for those conferences which are customarily oversubscribed and for which it is often necessary to establish a waiting list.

Applications must be submitted in duplicate on the standard application form which may be obtained from the office of the Director. This procedure is important because certain specific information is required in order that a fair and equitable decision on the application may be made. Attendance at each conference is limited to approximately 100 conferees.

The Director will submit the applications of those requesting permission to attend a conference to the committee for that conference. This committee will review the applications and select applicants so as to distribute the attendance as widely as possible among the various institutions and laboratories represented by the applications.

A registration card will be mailed to those selected. Advance registration by mail for each conference is required and is completed on receipt of the card and the deposit of $30. The advance deposit is not required of scientists arriving in the United States from foreign countries (this does not apply to American scientists). Checks are to be made payable to the Gordon Research Conferences. The deposit will be credited against the fixed fee for the conference. *A registration card not accompanied by the deposit will not be accepted.*

A deposit is considered an indication of serious intent to participate in a conference. As you know, most conferences are oversubscribed; therefore, I am sure you can appreciate our problems with other scientists who are qualified to attend but who have been placed on waiting lists. It is only fair to caution you that failure to return the registration card and deposit immediately may jeopardize your attendance. Please return your card immediately with the deposit to assure your attendance and accommodations.

Special fund. A special fund is provided from the registration fee and is made available to the chairman of each conference for the purpose of increasing the participation of research scientists who could not otherwise attend and participate because of financial limitations. Its use is not limited to scientists who have been invited by the chairman as a speaker or discussion leader. The money is to be used as an assistance fund only and may be used to contribute toward conferees' travel expenses, registration fee and/or subsistence expenses at the conference, or both. Total travel and subsistence expenses usually will not be provided.

The Board of Trustees of the Conferences has established a fixed fee for resident conferees at each conference. This fee was established to encourage attendance for the entire conference and to provide the special fund which is available to each conference chairman. *The fixed fee will be charged regardless of the time a conferee attends the conference—that is, for the periods of from 1 to 4½ days. An additional charge per night per person will be made for a room with a private bath or for a single room, if no double rooms or roommates are available.*

The fixed fee will cover registration, room (except single room or room with bath), and meals for resident conferees. It will not provide for golf, telephone, taxi, laundry, conference photograph, or any other personal expenses.

Guests. Accommodations are available for guests. Children must be at least 12 years of age. All such requests should be made at the time the attendance application is submitted because these accommodations, limited in number, will be assigned in the order that specific requests are received.

Guests are not permitted to attend the conference lectures and discussion sessions.

A deposit of $30 is required for each guest reservation. This deposit will be refunded if cancellation is received 2 weeks prior to the conference.

Pets are prohibited at the conference sites.

Cancellation. The conferee deposit will be forfeited if an approved applica-

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tion for attendance at a conference is cancelled. *The deposit is not transferable to another conferee or conference.*

Program. The complete program for the 1977 Gordon Research Conferences is published in *Science*, 11 March 1977. Reprints are available on request.

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

Mail for the office of the Director from 13 June to 26 August 1977 should be addressed to: Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, Colby-Sawyer College, New London, New Hanpshire 03257. Telephone: 603-526-2870.

Conference fees

New Hampshire	
Conferee:	
Resident (registration, room, meals)	$160
Deposit	30
Non-resident (registration, meals)	130
Deposit	30
Guest (room, meals for five conference days)	110
Deposit	30
California	
Conferee:	
Resident (registration, room, meals)	$185
Deposit	30
Guest (room, meals for five conference days)	135
Deposit	30

The program to be presented is as follows.

Adhesion, Science of

New Hampton School

Alan N. Gent, chairman; Herbert R. Anderson, Jr., vice chairman.

22 August. (J. R. Dann, discussion leader): J. F. Oliver, C. Huh, and S. G. Mason, "Effect of surface roughness on wetting"; L. Ter-Minassian-Saraga, "Chemical characterization of polymer surfaces is essential for the understanding of temperature effects on adhesion." (K. L. DeVries, discussion leader): L. E. Smith and R. E. Dehl, "Polymer adsorption on silicon oxide surfaces"; J. L. Koenig, "Vibrational spectroscopy of chemical reactions at interfaces."

23 August. (D. R. Fitchmun, discussion leader): Lawrence T. Drzal, "Role of the graphite fiber surface in advanced composite performance"; W. D. Sell, C. A. Dahlquist, and T. D. Rusch, "Durability of adhesive joints." (W. D. Bascom, discussion leader): F. J. McGarry, "Stress analysis of adhesive joints."

24 August. (L. E. Smith, discussion leader): George I. Loeb, "Wettability and the attachment of marine organisms"; Albert K. Harris, "Response of cells to substratum adhesiveness in tissue culture." (R. L. Patrick, discussion leader): R. F. Murphy, "Peel testing elastomer-elastomer laminates"; Sheldon Mostovoy, "Flaw tolerance of adhesive joints."

25 August. (R. E. Robertson, discussion leader): J. Schultz and K. C. Sehgal, "Adhesion of paint films"; Dennis C. Smith, "Bonding to dental tissues." (J. R. Huntsberger, discussion leader): Guy Meyer, "Morphological aspects of the adhesion of tri-block copolymers to glass"; G. R. Hamed, "Thermoplastic elastomers as hot-melt adhesives."

26 August. (K. L. Mittal, discussion leader): Dusan Prevorsek, "Chemical design of advanced hot-melt adhesives"; A. D. Roberts, "Adhesion and friction of rubber."

Applications

Scientists are invited to submit applications for attendance at the Gordon Research Conferences. An application blank is on page 1033 and may be submitted to Dr. Alexander M. Cruickshank, Director, Gordon Research Conferences, University of Rhode Island, Kingston, Rhode Island 02881.

Aging, Biology of

Holderness School

Vincent J. Cristofalo, chairman; George M. Martin, vice chairman.

1 August. Protein metabolism and its regulation (R. Schimke, discussion leader): M. Bradley, A. Goldberg, S. Goldstein, M. Rothstein. (D. Sabatini, discussion leader): C. Dreyfus, P. Gallop, D. Gershon, P. Nokin.

2 August. Regulation of cell proliferation; DNA synthesis and repair (K. Bayreuther, discussion leader): V. Cristofalo, R. Ladda, A. Macieria-Coelho, M. Makman. (D. Baserga, discussion leader): R. Klevecz, G. Martin, A. Muggleton-Harris, G. Veomett.

3 August. Regulation of cell proliferation; DNA synthesis and repair (J. Regan, discussion leader): P. Cerruti, R. Hart, R. Painter, J. Williams. Tissue responsiveness (D. Danon, discussion leader): W. Adler, M. Kay, T. Makinodan, M. Wexler.

4 August. Tissue responsiveness (E. Bierman, discussion leader): R. Adelman, C. Finch, P. Papavasiliou, G. Roth. Banquet speaker: I. Asimov.

5 August. Subcellular structure and function (K. Porter, discussion leader): Y. Courtois, D. Knook, A. Lockwood, R. Sanadi.

Analytical Chemistry

New Hampton School

Donald R. Johnson, chairman; Merle A. Evenson, vice chairman.

In its task of producing decision-making information, analytical chemistry was transformed in the 1950's by the application of new physical techniques. It is being transformed similarly today by adaptation of new bioanalytical approaches to increasingly complex industrial, environmental and biomedical problems. The 1977 Analytical Conference develops three themes: "Biological Systems as Analytical Transducers," "New Approaches in Environmental Analysis," and "New Developments in Basic Analytical Techniques."

8 August. Jack W. Frazer, "Analysis and optimization of enzyme reactions by computerized laboratory systems"; Norman G. Anderson, "New separations and analytical systems for molecular anatomy." Analytical research briefs: panel of young academic researchers.

9 August. G. Brian Wisdom, "New heterogeneous-phase immunoassays"; Csaba Horvath, "Nonpolar stationary phases in liquid chromatography"; Jiri Janata, "CHEMFETS—chemically sensitive field effect transistors."

10 August. Edwin F. Ullman, "New homogeneous-phase immunoassay techniques"; Robert V. Coleman, "Inelastic electron tunneling, a new spectroscopic technique"; Walter J. Blaedel, "Electroanalytical techniques with biologically active surfaces"; William D. Bostick, "Automated environmental analyses using a centrifugal analyzer."

11 August. James L. Wittliff, "Problems of separation and quantitation of steroid binding proteins"; Michael D. Waters, "Toxicity testing of environmental chemicals using in-vitro methods"; Arthur Karmen, "The need for and use of analytical information; requirements for the future—in medicine": William A. Struck, "The need for and use of analyti-

cal information; requirements for the future—in industry."

12 August. David Brusick, "New methods for qualitative and quantitative determination of carcinogenic properties of materials." Conference summary by discussion leaders. Discussion leaders for conference: Charles H. Lockmuller, Merle A. Evenson, James W. Robinson, and Lockhart B. Rogers.

Animal Cells and Viruses

Tilton School

A. S. Huang and D. Nathans, chairpersons; L. H. Kedes, vice chairperson.

20–24 June. Structure of RNA viral genomes (P. Vogt, chairperson). Structure of DNA viral genomes (S. Weissman, chairperson). Viral nucleic acid replication (D. Ward, chairperson). Transcription and processing of transcripts (P. Sharp, chairperson). Translation (Alan Smith, chairperson). Integration of viral DNA (T. J. Kelly, Jr., chairperson). Viral membranes and glycoproteins (S. Schlesinger, chairperson). Cellular growth factors (G. Sato, chairperson). Virus-cell interactions (P. Lengyel, chairperson).

Atherosclerosis

New Hampton School

Russell Ross and Richard W. St. Clair, co-chairmen.

Biology of the Artery Wall

27 June–1 July. The cell surface (Joseph Goldstein, chairman): Marilyn C. Farquhar, "Cell coats: an overview"; Thomas F. Roth, "Receptor-mediated uptake of egg yolk proteins by chicken oocytes"; Richard G. W. Anderson, "Visualization of LDL receptor in human cells"; Michael S. Brown, "The LDL receptor and its relationship to athero sclerosis." Endothelium I (George Palade, chairman): George E. Palade, Maia Simionescu, Nicolae Simionescu, "General functional aspects of vascular endothelium"; Daniel Steinberg, "Lipid metabolism in the endothelium"; Olga Stein, "Lipoprotein lipase in cultured endothelium." Endothelium II (Michael A. Gimbrone, Jr., chairman): Vincenzo Buonassissi, "Hormone and surface receptors in an established endothelial cell line"; Michael A. Gimbrone, Jr., "Insulin binding in cultured vascular endothelial cells"; Robert L. Trelstad, "Basement membrane chemistry and ultrastructure"; Laurence A. Harker, "Endothelial cell thrombo resistance." Smooth muscle I (Paul Bornstein, chairman): Andrew P. Somlyo, "Fine structure and functional correlates in smooth muscle"; Janice M. Burke, "Synthesis of connective tissue proteins"; Paul Bornstein, "The relation of the cell surface to the extra-cellular matrix." Smooth muscle II (Richard St. Clair, chairman): Robert W. Mahley, "Cellular uptake of plasma lipoproteins determined by specific properties of the apolipoproteins"; George H. Rothblat, "Comparison of factors responsible for the accumulation of various amounts of cholesteryl esters by different cell types in culture"; Yechezkiel Stein, "Control of efflux of cholesterol and cholesteryl esters from arterial smooth muscle cells." Growth control I (Russell Ross, chairman): Arthur Pardee, "Regulation of fibroblast growth in tissue culture"; Harry N. Antoniades, "Serum factors in cell growth in culture"; Russell Ross, "Platelet factors and growth control." Growth control II (Gordon H. Sato, chairman): Denis Gospodarowicz, "A comparison of the in vivo and vitro mitogenic effect of EGF and FGF"; Richard Furlanetto, "Somatomedin in serum and growth control in culture"; Lawrence Levine, "Prostaglandins in cell culture"; Gordon H. Sato, "Replacement of serum with hormones in cell culture." Lipolytic enzymes (Harvey Wolinsky, chairman): Stanley Fowler and Harvey Wolinsky, "Effects of tissue culture on aortic smooth muscle cells"; Stanley Fowler, "Lysosomes of aortic foam cells"; Peter Brecher, "Properties of aortic lysosomal lypase"; Sidney Goldfischer, "Aortic hydrolases: activities in experimental diabetes mellitus." Platelets (J. Fraser Mustard, chairman): J. Fraser Mustard, "Platelet vessel interaction—atherosclerosis"; Dov Michaeli, "Properties of vessel wall constituents"; Avinoam Livni, "Isolation and properties of a collagen receptor on platelets"; Marian A. Packham, "Effect of modification of the platelet surface"; Theodore H. Spaet, "Platelet vessel interaction and smooth muscle proliferation."

Atomic Physics

Brewster Academy

Winthrop W. Smith, chairman; Aaron Temkin, vice chairman.

4 July. Positrons (Richard Marrus, discussion leader): Arthur Rich, "Positronium lifetimes and other positronium-related tests of fundamental physical theories"; A. Stauffer, "Positron scattering and annihilation in noble gases." Laser-assisted inelastic scattering (discussion leader to be announced): T. J. McIlrath, "Ionization of Na and Li vapor in a resonant laser field"; (speaker to be announced), "Theory of radiative collisions."

5 July. New experimental methods (Steve Lundeen, discussion leader): Raymond C. Elton, "Status of UV and x-ray laser research"; S. C. Wallace, "VUV lasers and nonlinear optical phenomena in atomic systems"; Alan C. Gallagher, "Monochromatic electrons by laser photoionization"; William H. Wing, "High-precision laser spectroscopy of molecular ions." Chemical physics (Edward Pollack, discussion leader): J. Pascale, "Alkali-rare gas potentials in excited states"; Andrew C. Tam, "Long-range forces between laser beams in an atomic vapor"; Pekka Pykkö, "Relativistic quantum chemistry."

6 July. Electron-atom scattering (A. Temkin, discussion leader): M. R. C. McDowell, "Dispersion relations in electron-atom scattering"; R. J. Drachman, "Application of dispersion relations to some solvable models"; D. W. O. Heddle, "Three sorts of resonance?" Heavy-particle collisions (discussion leader to be announced): Walter R. Thorson, "Firmer foundations for slow atomic collision theory"; Arnold Russek, "Vibrational-rotational excitation in atom-molecule collisions."

7 July. Highly stripped ions (Patrick Richard, discussion leader): I. A. Sellin, "Multiple-electron rearrangement in heavy ion-atom collisions"; J. Bayfield, "Charge exchange in slow collisions." Excited-state collisions (David Pritchard, discussion leader): Rudolf M. Düren, "Potentials for excited states from molecular beam experiments: laser-excited Na + Hg." Multiphoton processes: (speaker to be announced).

8 July. Photoionization (S. T. Manson, discussion leader): W. P. Reinhardt, "L^2 techniques and atomic photoabsorption"; V. Schmidt, "Double photoionization of rare cases"; George A. Victor, "Calculations of single and multi-photon ionization from excited states of sodium."

Biological Regulatory Mechanisms

Holderness School

Gerald Fink and E. Peter Geiduschek, co-chairmen.

4 July. Bacterial persons: primarily repressors and operators (N. L. Lee, chairwoman); Bacterial operons: primarily promoters and RNA polymerase (M. J. Chamberlin, chairman).

5 July. Bacterial operons: primarily

leader regions and termination (M. E. Gottesman, chairman); Viruses of procaryotes and eucaryotes (L. M. Gold, chairman).

6 July. Regulation of ribosomal genes in procaryotes and eucaryotes (J. R. Warner, chairman); Insertion sequences, illegitimate recombination and regulation (D. Botstein, chairman).

7 July. Hormone-dependent and -independent regulation of eucaryotic gene expression (R. T. Schimke, chairman); DNA sequences relating to eucaryotic regulation (T. Maniatis, chairman).

8 July. Simple differentiating systems (R. Haselkorn, chairman).

Biomaterials, Science and Technology of

Proctor Academy

Allan S. Hoffman, chairman; Len Rubin, vice chairman.

18 July. Animal models for implant testing—selection, implantation protocols and data analysis (D. A. Willigan, chairman): A. R. Katz, "Animal selection, models and techniques in biomaterials testing": T. N. Salthouse, "Cellular effects related to implant shape and surface"; S. Woodward, "A review of inflammation and repair: the special case of the biological implant." Short communications (E. Korostoff and H. L. Gabelnick, co-chairmen).

19 July. Interactions of proteins and cells at foreign interfaces (T. A. Horbett and B. D. Ratner, co-chairmen): R. E. Baier, "Fibrinogen interactions with well-characterized surfaces"; P. K. Weathersby, "Adsorption of hemoglobin and other plasma proteins to a series of hydrophobic-hydrophilic copolymers"; J. J. Rosen, "Morphology of cells during attachment to biomaterials substrates." Hard tissue-implant interactions (L. L. Hench, chairman): P. L. Ducheyne, "Bone ingrowth under dynamic loading of porous-coated metallic implants"; M. Jarcho, "Tissue, cellular and subcellular events at a bone-ceramic hydroxylapatite interface"; G. Y. Onoda, "Electrochemistry of constituents of a bone-implant interface."

20 July. Orthopedic implants for the hand (L. Rubin, chairman): A. B. Swanson, "Long term results with silicone rubber implants in human joint reconstruction"; J. W. Madden, "Tissue response to solid silastic implants"; E. Frisch, "The nature of silicone elastomer and findings from subdermal implant studies." Platelets at foreign interfaces (W. Zingg, chairman): H. E. Petscheck, "Platelet aggregate formation in a region of separated blood flow"; E. F. Leonard, "Surface irregularities: suspected and proven effects on thrombogenic processes"; L. A. Harker and S. R. Hanson, "Effects of biomaterials surface composition on platelet consumption in primates with *Ex-Vivo* fermoral shunts."

21 July. Evaluation of blood compatibility (R. I. Leininger, chairman): R. I. Leininger, "Evaluation of blood compatibility: a critical historical overview"; J. S. Schultz, "Evaluation of blood compatibility by means of an *Ex-Vivo* Couette-type chamber"; G. D. Wilner, "Evaluation of blood compatibility by measurement of fibrinopeptide A generation"; R. G. Mason, "Evaluation of blood compatibility by *In Vitro* procedures." (L. Rubin, chairman): Blair O. Rogers, "Anthropological variations in different humans throughout the world."

22 July. Packaging and sterilizing of biomedical devices and implants; and an update on FDA classifications of medical devices (S. Koorajian, chairman): F. Benjamin, "Sterilization requirements and controls for biomedical products"; R. S. Kennedy, "The Medical Devices Amendment of 1976—Update 1977."

Bones and Teeth, Chemistry, Physiology and Structure of

Kimball Union Academy

William A. Peck, chairman: Klaus E. Kuettner, vice chairman.

27 June. Submitted short papers session (Klaus E. Kuettner, session chairman, (send three copies of a 500-word abstract by 1 May 1977 to Klaus E. Kuettner, Rush Medical College, 1725 West Harrison Street, Chicago, Illinois 60612). Cell differentiation in mineralized tissues (Lawrence G. Raisz, session chairman): John Brand, Elizabeth Hay, Marijke Holtrop, Sheila Jones, Arnold Kahn, Edward Kollar, Richard Luben, Sandy Marks, Scott Miller, Gregory Mundy, Gideon Rodan, Donald Walker, Al Weinstock, participants.

28 June. Cell differentiation in mineralized tissues (continued) (Lawrence G. Raisz, session chairman). Growth plate: matrix calcification (Carl T. Brighton, session chairman): Lawrence C. Rosenberg, "Structure of proteoglycan subunit core protein and its relationship to calcification"; A. H. Reddi, "Transitions in proteoglycans during endochondral ossification"; Roy H. Wuthier, "Biosynthesis of matrix vesicles."

29 June. Growth plate: selected disorders (Carl T. Brighton, session chairman): Angiola Pedrini, "Proteoglycans in selected growth plate disorders"; Jerry A. Maynard, "Ultrastructure of epiphyseal/metaphyseal dysplasias"; Thomas Shepard and Bruce Mackler, "Defect in oxidative phosphorylation in achondroplasia." Calcium binding proteins I (Robert Wasserman, session chairman): Robert Wasserman, "Ca binding proteins, general considerations"; Shmuel Hurwitz, "Intestinal, kidney, and uterine Ca binding protein, physiological aspects"; Robert A. Corradino, "Synthesis and function of CaBP in organ-cultured embryonic chick duodenum"; Curtis S. Fullmer, "Bovine intestinal CaBP, calcium binding and other properties"; Rocky S. Tuan, "Calcium binding protein of chorioallantoic membrane, identity, characteristics, and developmental expression."

30 June. Calcium binding proteins II (Robert Wasserman, session chairman): Susan B. Oldham, "Parathyroid gland, calcium binding protein and secretory activity"; Don I. Hay, "Protein inhibition of calcium phosphate precipitation"; Paul Gallop, "Vitamin K dependent protein carboxylation in bones and other tissues." Special lecture: Mahmoud Y. El-Najjar, "Anemia and bony changes in Precolumbian American natives."

1 July. Aging and connective tissue disease (Louis V. Avioli, session chairman): Paul Gallop, "Aging and connective tissue"; Leonard Hayflick, "Aging at the cellular level."

Cancer

Colby-Sawyer College

Vittorio Defendi, chairperson; Isaiah J. Fidler, vice chairperson.

Regulation of the Tumor Cell Phenotype

22–26 August. (H. Koprowski, chairperson): J. Ponten and B. Weinstein, "Definition of the transformed phenotype"; (B. Pierce, chairperson): C. Basilico and R. Pollack, "Modification of the transformed phenotype"; (F. Jacob, chairperson): B. Mintz and M. Edidin, "Teratocarcinoma"; (J. Fidler, chairperson): J. Schrader and M. Raff, "Modification by immunological interaction"; (P. Vogt, chairperson): P. Duesberg and G. Todaro, "Sarcoma genes: identification, function (?)" (V. Defendi, chairperson): P. Tegtmeyer and R. Martin, "T antigen: product of the A gene"; (G. Weissmann, chairperson): J. Kates and F. Ruddle, "Methodological approaches"; (A. P. Marks and B. E. McCulloch, chairpersons): W. Ostertag, D. Housmann, J. Adamson, M. Moore, "Differentiation into functional phenotype."

Carbohydrates, Chemistry of

Tilton School

R. W. Marchessault, chairman; Stephen Hanessian, vice chairman.

Carbohydrates and the Quality of Life

27 June. Complex polysaccharides (C. G. S. Dutton, session chairman): Bengt Lingberg, "Methods of structure determination of bacterial polysaccharides"; S. Stirm, "Bacteriophage enzymes for the study of complex polysaccharides"; E. D. T. Atkins, "Structural analysis of klebsiella polysaccharides by x-ray diffraction"; G. Holzwarth, "Solution properties of xanthan polysaccharide."

28 June. Carbohydrates as codons for chemical recognition (C. P. J. Glaudemans, session chairman): Eduardo Padlin, "Crystal structure at 2.6 Å of an antibody"; Philip Stahl, "Membrane recognition of lisomal hydrolases"; Loretta Leive, "Organization of carbohydrates in a bacterial membrane"; C. P. J. Glaudemans, "What part of an antigen can suffice as the immunodeterminant?"

29 June. Organic chemistry and synthetic aspects of carbohydrates and polysaccharides (S. Hanessian, session chairman): S. Hecht, "Progress in the synthesis of bleomycin"; T. Ogawa, "Some aspect of the chemical transformation of carbohydrates by trialkyl stannylation"; C. Schuerch, "Stereoregular polysaccharide synthesis"; C. Pedersen, "Bromo deoxy compounds from hexoses polyols and aldonic acids."

30 June. Physical methods for carbohydrate studies (H. Jennings, session chairman): L. D. Hall, "Recent advances in magnetic resonance applied to carbohydrates"; D. Gagnaire, "High resolution NMR of polysaccharides"; I. Dea, "Methods for the study of conformation and interactions of heteropolysaccharides."

1 July. Contributed and invited short papers (send abstracts to Derek Horton, Department of Chemistry, The Ohio State University, 140 West 18th Avenue, Columbus, Ohio 43210, U.S.A.).

Catalysis

Colby-Sawyer College

M. Shelef, chairman; Gerard V. Smith, vice chairman.

27 June. T. N. Rhodin, "Electronic and geometric effects in the adsorption and reaction on transition metal surfaces"; P. P. Wynblatt, "Surface segregation in alloys"; W. E. Spicer, "Pt and studies of H_2O formation; composition and adsorption on Cu-Ni alloys."

28 June. J. C. Vickerman, "Secondary ion mass spectroscopy: application to catalysis"; D. J. C. Yates and L. L. Murrell, "Studies of ultradispersed supported metals"; C. Naccache, "Structure and catalytic properties of supported Rh catalysts."

29 June. J. Cusumano, "Chemicals and fuels from coals: what are the research opportunities in catalysis"; A. J. Silvestri and C. D. Prater, "Conversion of methanol to high-octane gasoline"; W. J. Bartley, M. M. Bhasin, P. C. Ellgen, and T. P. Wilson, "Rhodium as a catalyst for the conversion of synthesis gas to two-carbon chemicals"; D. Luss, "Oscillatory phenomena in heterogeneous catalysis."

30 June. G. P. Royer, "Enzymes, immobilized enzymes and synzymes"; W. R. Vieth, "Enzyme-membrane catalysis and reactor design"; B. L. Vallee, "Function, structure and conformation of metalloenzymes."

1 July. P. Mars, "Monolayer molybdena catalysts: preparation, adsorption, catalysis"; C. U. Pittman, "Effect of the polymer in polymer-anchored catalysts."

Catecholamines

Kimball Union Academy

Floyd E. Bloom, chairman; Donald J. Reis, vice chairman.

8 August. Regulation of synthetic enzymes (W. Lovenberg, discussion leader); Transmitter storage and release (O. H. Viveros, discussion leader).

9 August. Simple catecholamine systems (X. O. Brakefied, discussion leader); Neuronal development (L. Olsen, discussion leader).

10 August. Receptors: isolation, characterization and modulation (R. Lefkowitz, discussion leader).

11 August. Synaptic actions of dopamine (G. Aghajanian, discussion leader); Catecholamine-neuroendocrine interactions (E. Sachar, discussion leader).

12 August. Catecholamines in memory and learning (H. C. Fibiger, discussion leader).

Cell Contact and Adhesion

Proctor Academy

S. Roseman, chairman; J. P. Trinkaus, vice chairman.

4 July. Properties and interactions: membrane lipids and proteins (T. Thompson, chairman); Synthesis and functions of natural membranes (J. S. Singer, chairman).

5 July. Cell form and movement (I. Pastan, chairman); Adhesive specificity (M. Steinberg, chairman).

6 July. Adhesive factors (S. Roseman, chairman); Interactions between cells and extracellular matrix (J. Gross, chairman).

7 July. Invasiveness (J. P. Trinkaus, chairman); Open discussion (S. Roseman and J. P. Trinkaus, chairmen).

8 July. Submitted papers (J. Weston, chairman).

Ceramics, Solid State Studies in

Tilton School

Dennis W. Readey, chairman; Anthony G. Evans, vice chairman.

Surfaces and Interfaces: Their Structure and Influence on Properties and Processing

1 August. (M. S. Whittingham, discussion leader): G. W. Somorjai, "Structure of oxide surfaces"; W. S. Williams, "Surface defects and catalysis in tungsten carbide." (M. S. Seltzer, discussion leader): R. J. Brook, "Grain boundaries in oxides"; G. Thomas, "Electron microscopy of internal boundaries in ceramics."

2 August. (G. Y. Chin, discussion leader): J. M. Blakely, "Defects and space charges at free surfaces of ceramics"; A. D. Franklin, "Electrical measurements and interface electrochemical processes." (A. H. Heuer, discussion leader): J. J. Mills, "Possible mechanism for environmentally sensitive behavior of dislocations in ceramics"; R. M. Cannon, "Boundary migration and grain growth: effects of solutes, space charges, pores and particles."

3 August. (G. C. Kuczynski, discussion leader): W. D. Kingery, "Segregation at surfaces and grain boundaries in MgO"; D. F. Stein, "Grain boundary segregation and mechanical properties of oxides." (F. A. Kroger, discussion leader): H. Schmalzried, "Role of phase boundaries in heterogeneous solid state reactions"; R. F. Sekerka, "Chemical potentials and kinetics of morphology changes at surfaces in non-metallic solids."

4 August. (A. A. Solomon, discussion leader): B. Tittmann, "Surface acoustic waves and the properties of ceramic surfaces"; L. C. DeJonghe, "Role of grain boundaries in fast-ion conductors"; M. Notis, "Role of interfacial processes in high temperature deformation of ceramics." (D. W. Readey, discussion leader): R. J. Anderson, "Tomorrow's energy supply—fact or fiction?"

5 August. (A. G. Evans, discussion leader): S. Prochazka, "Interface effects

in the sintering of silicon carbide"; R. E. Tressler, "Oxidation and corrosion of silicon carbide and nitride."

Coatings and Films, Physics and Chemistry of

Proctor Academy

Marco Wismer, chairman; Edgar E. Hardy, vice chairman.

8 August. (K. Hanmann, discussion leader): D. C. Prieve, R. E. Smith, "Autophoresis-theory"; H. S. Bender, "Factors affecting the phosphating of steel substrates and their corrosion consequences." (P. E. Pierce, discussion leader): L. Horner, "Corrosion inhibitors—mechanism, electrochemistry and physical chemistry."

9 August. (K. L. Hoy, discussion leader): J. John Stratta, "Theory, experimental study and computer simulation of the evaporation of solvent water mixtures"; Albert L. Rocklin, "Solution theory and prediction of properties of aqueous solvent blends." (C. A. Kumins, discussion leader): K. Hamann, "Effect of pigment/polymer interactions on dispersion"; W. J. Blank, "Impact improvement in coatings through a brittle second phase."

10 August. (J. W. Prane, discussion leader): H. Van Oene, S. S. Labana, "Orientation of aluminum pigments in powder and high solids coatings"; W. S. Zimmt, "High build automotive lacquers." (P. Heiberger, discussion leader): C. M. Hansen, "Fundamental interaction of coatings"; W. Riggs, "ESCA and other modern tools for surface analysis."

11 August. (J. A. Vasta, discussion leader): W. J. Mijs, "New developments in blocked isocyanates"; Anne I. R. Brewster, "Painting plastic: diagnosis and prognosis." (H. Earl Hill, discussion leader): P. Pappas, "Photostabilization of polymers."

12 August. (E. E. Hardy, discussion leader): short presentations: K. C. Frisch, W. Hall, P. J. Prucnal.

Corrosion

Colby-Sawyer College

Robert A. Rapp, chairman; Ellis D. Verink, vice chairman.

18 July. Growth of thin oxide films (Ellis D. Verink, discussion leader): David J. Young, "Kinetics and mechanisms of thin oxide film growth on chromium"; Teiichi Homma, "Role in oxidation kinetics of the nucleation and growth of oxide on copper single crystals." (Paul Lacombe, discussion leader): Jerome M. Eldridge, "Thin oxide layers for tunnel junction devices"; Gérard Béranger, "Modern experimental techniques in gaseous corrosion of metals."

19 July. Alloy oxidation (David Whittle, discussion leader): John Stringer, "The design of alloys for oxidation resistance"; Walter Smeltzer, "The morphologies and kinetics of internal precipitations in gas-alloy reactions." Alloy reactions in unusual environments (Grieg Wallwork, discussion leader): Per Kofstad, "The high-temperature corrosion of metals by gaseous impurities in helium"; David Douglass, "The kinetics and mechanism of formation and dissociation of magnesium-alloy hydrides."

20 July. High-temperature attack in mixed oxidants (J. Bruce Wagner, discussion leader): Hans J. Grabke, "Carburization of high-alloy steels in CH_4-H_2 and CO-H_2-H_2O mixtures"; Ken Natesan, "High-temperature reactions of metals in multicomponent gas environments." (Henry Graham, discussion leader): Gerald Meier, "Alloy reactions in carbonizing/oxidizing mixtures"; Derek R. Holmes and P. C. Rowlands, "The corrosion of 9 Cr steels and alloys in high-pressure CO_2."

21 July. Corrosion by a water reactant (John Cathcart, discussion leader): Nilo Valverde, "The dissolution of metal oxides in acidic solutions"; Richard Pawel, "Zircaloy oxidation in steam at high-temperature." Hot corrosion mini-seminar (Robert A. Rapp, discussion leader): short presentations: Norman S. Bornstein, John F. Elliott, Fred S. Pettit, Alfred Rahmel, Richard Reising, David A. Shores.

22 July. Interactions between mechanical effects and scaling (Joseph Goebel, discussion leader): Graham C. Wood, "Role of oxide layers in the wear and friction behavior of alloys"; J. W. Edington, "High-temperature erosion-corrosion of alloys." There will be poster sessions throughout the week to which all conference participants are invited to contribute material.

Cyclic Nucleotides

Tilton School

Joel G. Hardman, chairman; Edwin G. Krebs, vice chairman.

4 July. Molecular properties of adenylate and guanylate cyclase: Eva Neer, David Garbers, Ernst Helmreich. Regulation of guanylate cyclase: Ferid Murad, Arnold White, Nelson Goldberg.

5 July. Calcium-dependent regulatory protein: Robert Kretsinger, Thomas Vanaman, Claude Klee, W. Y. Cheung, Charles Brostrom, M. E. Gnegy.

6 July. Alpha adrenergic receptors and mechanisms: Robert Lefkowitz, David U'Prichard, Günter Schultz and K. H. Jakobs. Receptor-effector coupling: Alfred Gilman, Ora Rosen, and Charles Rubin.

7 July. Cyclic AMP–dependent and cyclic AMP–independent effects of single hormones: Steven Mayer, John Exton, Jacques Dumont. Martin Rodbell, "Adenylate cyclase: a view from the bridge."

8 July. Compartmentation of cyclic nucleotides and protein kinase: J. D. Corbin, Gary Brooker, Alton Steiner.

Developmental Biology

Proctor Academy

Eric Davidson, chairman; L. Dennis Smith, vice chairman.

1 August. Genetic and cytogenetic approaches to chromosome organization (Joseph Gall, chairman): Barbara Hamkalo, Herbert C. Macgregor, Steven L. McKnight, Mary Lou Pardue, George T. Rudkin, Charles D. Laird. Functional aspects of chromatin structure (E. Morton Bradbury, chairman): Bruce Alberts, Richard Axel, Robert Roeder, Abraham Worcel, Harold Weintraub.

2 August. Primary transcription products and gene regulation (Robert P. Perry, chairman): Roy J. Britten, James E. Darnell, Sheldon Penman, Jeffrey Ross. Genetic and molecular aspects of oogenesis (L. Dennis Smith, chairman): Peter J. Ford, David Hirsch, Michael Kambysellis, Michael Rosbash, Ulrich Scheer.

3 August. Localization of morphogenetic potential in egg cytoplasm (Anthony P. Mahowald, chairman): Gary Freeman, Walter J. Gehring, Karl Illmensee, Klaus Kalthoff, Howard Schneiderman. Molecular biology of early development (Tom Humphreys, chairman): A. I. Aronson, William E. Hahn, Martin Nemer, Joan Ruderman, Hugh Woodland.

4 August. Sequence organization and transcription studied in cloned eukaryotic DNA fragments, I (David S. Hogness, chairman): Eric H. Davidson, Ronald W. Davis, David Finnegan, Matthew Meselson, Gerald Rubin, Peter Wensink. Sequence organization and transcription studied in cloned eukaryotic DNA fragments, II (Igor B. Dawid, chairman): Donald Brown, Stuart G. Clarkson, Norman Davidson, Laurence H. Kedes.

5 August. Differentiation of highly specialized cells and tissues (Fotis C. Kafatos, chairman): A. Efstratiadis, Philip Leder, Tom Maniatis, John Morrow, E. M. Southern, Y. Suzuki, Charles Weissman.

Drug Metabolism

Holderness School

John E. Baer, chairman; James R. Fouts, vice chairman.

11 July. Nutrition and drug metabolism (Fred W. Deckert, chairman): Vincent G. Zannoni, "Vitamins and drug metabolism"; T. Colin Campbell, "Protein deprivation and drug metabolism"; John T. Wilson, "Effects of vitamin C *in vitro* on drug metabolism." Hepatocellular drug disposition (Grant R. Wilkinson, chairman): Curtis D. Klaassen, "Hepatobiliary secretion"; Marion W. Anders, "Use of isolated hepatocytes in metabolism and toxicity studies."

12 July. Metabolism of agricultural products (Darrell D. Sumner, chairman): Michael Boyd, "The role of metabolism in pathogenesis of disease produced by natural and agricultural products"; John Potter, "Metabolic fate and residues of Vendex, mitocide in animals, plants and environment"; James W. Gillette, "Pesticide metabolism in terrestrial microcosms."

13 July. Metabolic activation systems for mutagenicity/carcinogenicity testing (Carl C. Smith, chairman): Sid Green, "Introduction to the characteristics of the *in vitro* systems"; Joyce McCann, "*Salmonella* assay"; Bruce Casto, "*In vitro* tests for carcinogens and mutagens using mammalian cells." Molecular interactions (Edward Bresnick, chairman): Wayne Levin, "A metabolism-oriented approach"; Phil L. Grover, "Diol-epoxides: reactive metabolites"; Jerry R. Mitchell, "Covalent binding: a predictive tool."

14 July. Disease states and drug metabolism (Elliot S. Vesell, chairman): Leslie Z. Benet, "Pharmacokinetics in disease states"; Edward M. Sellers, "Disposition of psychoactive drugs in disease"; Aryeh Hurwitz, "Transport of charged drugs and the gut"; Elliot S. Vesell, "Liver disease and drug metabolism."

15 July. Drug metabolism and the lung (Hanspeter R. Witschi, chairman): Thomas E. Eling, "Uptake and metabolism of chemicals by pulmonary tissue"; L. den Engelse, "The metabolism of nitrosamines by the lung"; Frank Chytil, "Vitamin A receptors in the lung."

Elastomers

Colby-Sawyer College

Nissim Calderon, chairman; Russell A. Livigni, vice chairman.

25 July. Polyurethanes: R. Bonart, "Crosslinking and deformation processes in segmented polyurethanes"; C. W. Macosko, "Rheological measurements on curing liquid elastomer systems"; E. C. Steinle and F. E. Critchfield, "Kinetics and catalysis from RIM polyurethanes"; T. L. Smith, "Tensile properties of segmented polyurethanes and other elastomeric copolymers at finite deformations."

26 July. Properties of elastomeric networks: S. S. Sternstein, (a) "Inhomogeneous swelling in filled and unfilled elastomers" (b) "Properties of rubber modified impact plastics"; N. W. Tschoegl, "Viscoelastic behavior of rubbers in moderately large deformations"; D. Katz, "Densely crosslinked polymers—correlation between structure and mechanical properties"; A. E. Hirsch, "Dynamic properties of fluoroelastomers and ethylene/acrylic copolymers."

27 July. Synthesis, properties, and characterization of new elastomers: J. P. Kennedy, K. F. Castner, and B. Mandal, "Polymerization and polymer derivatization using organoaluminum compounds"; C. E. Wilkes, "Synthesis, characterization and properties of stereoregular vinyl chloride-butadiene copolymers"; W. J. Bailey, "Synthesis of elastomers with expansion in volume"; R. W. Larochelle, J. D. Cargioli, E. A. Williams, and P. C. Juliano, "Silphenylene-siloxane block copolymers. Structural and synthetic studies by 29-Si FT-NMR."

28 July. Network topology: M. Morton, "Synthesis and properties of uniform polyisoprene networks"; K. Arai and T. Kotani, "Molecular origins of the coefficients in the Mooney-Rivlin equation"; R. M. Pierson, "Rubber in aid to medical research."

29 July. Antioxidants, blends and composites: J. A. Kuczkowski, "Mechanisms of phenol-type antioxidants"; A. H. Crossland and R. F. Bauer, "Resolution of binary elastomer blend properties by stress-strain modelling"; L. A. Goettler, "Processing of short fiber-elastomer composites."

Elementary Particle Interactions

Tilton School

J. Whitmore, chairman; M. Einhorn, vice chairman.

Quarks and Their Interaction

15–19 August. New particle production in e^+e annihilation. New particle production in photon and hadron interactions. Quark-lepton spectroscopy. Structure of the weak current. Direct lepton production in hadronic collisions. Large transverse momentum phenomena in hadronic interactions. Quark structure in annihilation and lepto-productions. Theory of quark confinement. High-energy accelerators of the future. (Speakers to be announced.)

Energy Coupling Mechanisms

Proctor Academy

Paul Boyer, chairman; Sidney Fleischer, vice chairman.

27 June–1 July. For this conference, a new format is planned in which all accepted participants will have the privilege of presenting a poster and/or submitting a title for possible discussion at main sessions. At the conference, attendees will indicate preferences among submitted titles to aid conference organizers and session chairmen in selection of researches for presentation and discussion. Sessions planned are as follows: Molecular organization of electron transfer components as related to energy transductions; Mechanism and stoichiometry of energy capture during electron transport; Proton translocation, electron potential, and energy coupling; Energy-linked mitochondrial transport; Structure, property and mechanism of transport ATPases; Structure and property of coupling ATPases (ATP synthetases); Inhibitors and uncouplers of energy transductions; Mechanism of ATP formation by ATP synthetases; Membrane structure, reconstitution and energy transductions. Participants scheduled at the time of this announcement are as follows: R. Albers, M. Avron, G. Azzone, B. Beechey, R. Blostein, P. Boyer, E. Carafoli, B. Chance, B. Chappel, A. Crofts, L. de Meis, L. Ernster, S. Fleischer, W. Hasselbach, Y. Hatefi, P. Hinkle, B. Hess, A. Jagendorf, Y. Kagawa, M. Klingenberg, I. Kozlov, J. Kyte, H. Lardy, A. Lehninger, D. MacLennan, B. McCarty, E. Moudrianakis, N. Nelson, S. Papa, H. Penefsky, R. Post, A. Senior, E. Taylor, A. Tzagoloff, K. van Dam, P. Vignais, H. Witt.

Environmental Sciences: Air

New Hampton School

James P. Friend, chairman.

Chemistry of Reactive Trace Substances in the Atmosphere: Experience and Theory

15 August. H. I. Schiff, "Stratosphere: trace substance concentrations"; (speaker to be announced), "Stratosphere: chemical reactions."

16 August. M. B. McElroy, "Stratosphere: atmospheric transport and models"; Reinhold Rasmussen, "Clean troposphere: trace substance concentrations, chemical reactions."

17 August. Douglas D. Davis, "Clean troposphere: chemical reactions, aspects of global cycles"; Julius Chang, "Clean troposphere: models"; James N. Pitts, "Polluted troposphere: concentration."

18 August. P. A. Graedel, "Polluted troposphere: reactions"; K. Demerjian, "Polluted troposphere: models."

19 August. K. Demerjian, "Polluted troposphere models"; (speaker to be announced), "Summary."

Enzymes, Coenzymes and Metabolic Pathways

Kimball Union Academy

Frank H. Westheimer and Richard Wolfenden, co-chairmen; Jeremy R. Knowles and Christopher T. Walsh, co-vice chairmen.

4 July. Regulation (L. P. Hager, chairman): W. W.-C. Chan, "Function and quaternary structure of aspartate transcarbamylase ATCase"; G. R. Stark, "Mechanism of *E. coli* ATCase and structure of the hamster multifunction protein containing this activity"; E. Schweizer, "Structure and biosynthesis of the yeast fatty acid synthetase complex"; K. Bloch, "Regulation of the myobacterial fatty acid synthetase complex by polysaccharides." Special topics (R. Wolfenden, chairman): R. Zukin, "Receptor mechanism in bacterial chemotaxis"; W. Klee, "Enzymatic studies with endogenous opiate receptors"; T. C. Stadtman, "Seleno-enzymes."

5 July. Models for metalloenzymes (F. H. Westheimer, chairman): T. G. Traylor, "Mechanisms of reaction of hemoproteins and model compounds with ligands"; R. H. Holm, "Analogs of reduced Fe_4S_4 sites in proteins"; C. W. Carter, "Broken symmetry and catalysis in iron-sulfur proteins"; A. M. Sargeson, "Models for aconitase and amino acid ammonia lyase action." Enzymes as toxins and toxin receptors (A. Rich, chairman): A. M. Pappenheimer, Jr., "Interaction of protein toxins with the cell membrane"; J. Konisky, "Interaction of colicins with bacterial cells"; G. Petsko, "Structure-function relationships in snake venom neurotoxins."

6 July. Activation by ATP (F. C. Wedler, chairman): A. Meister, "ATP utilization in the reactions catalyzed by carbamyl phosphate synthetase and 5-oxoprolinase"; J. J. Villafranca, "Transition state structure and allosteric control of glutamine synthetase"; G. H. Reed, "Spectroscopic probes of structure and dynamics in transition state analog complexes." Mechanisms (E. H. Cordes, chairman): H. Gray, "Structure and reactivity of copper-containing oxidases"; L. B. Hersh, "Deazoflavins and flavoproteins"; G. L. Kenyon, "Mandelate racemase." General poster session.

7 July. Mechanisms (I. A. Rose, chair man): H. G. Floss, "Games with chiral methyl groups"; R. L. Schowen, "Transition state properties of methyl transfer"; R. Abeles, "Enzyme inactivators." Mechanisms (continued) (W. P. Jencks, chairman): D. C. Phillips, "Structure and activity of triosephosphate isomerase"; E. T. Kaiser, "Mechanistic studies on carboxypeptidases"; G. Petsko, "X-ray cryoenzymology of proteases and ribonuclease."

8 July. Recognition and editing (D. V. Santi, chairman): D. M. Blow, "Catalytic specificity and fidelity: an aminoacyl-tRNA synthetase"; P. R. Schimmel, "Approaches to the mechanism of specific protein-tRNA interactions"; F. Cramer, "Control steps in the amino acylation of tRNA."

Fertilization and the Activation of Development

Holderness School

David Epel, chairman; Everett Anderson, vice chairman.

25–29 July. Sperm behavior and sperm capacitation (D. Fawcett, chairman): F. Collins, "Sperm behavior in relation to egg substances"; J. Overstreet, "Sperm transport." D. Garber, M. Gordon, J. Koehler, R. Miller, discussants. The acrosome reaction and its role in fertilization (M. Johnson, chairman): R. Yanagimachi, "Acrosome reaction"; D. Morton, "Acrosomal enzymes"; S. Meizel, "Biochemical events of the acrosome reaction." M. Bradford, G. Oliphant, R. Stambaugh, discussants. Gamete binding (G. Nicolson, chairman): V. Vacquier, "Egg-binding substances of sperm"; W. Lennarz, "Sperm-binding substance of egg"; U. Goodenough, "Algae gamete binding." J. Hartman, R. Summers, discussants. Blocks to polyspermy and alteration of egg surface (F. Longo, chairman): Laurinda Jaffe, "Electrical block to polyspermy"; J. Hedrick, "Structural blocks to polyspermy"; B. Shapiro, "Enzymatic basis of altering egg coats after fertilization." E. Carroll, Jr., M. Gould-Somero, D. Wolf, discussants. Egg maturation (C. Thibault, chairman): A. Hirshfield, "Mechanism of hormone action in mammalian eggs"; H. Kanatani, "Mechanism of hormone action in starfish eggs"; Y. Masuri, "Cytoplasmic factors inducing maturation." C. Channing, J. Maller, R. Wallace, discussants. Primary triggers in egg activation and parthenogenesis (E. Anderson, chairman): D. Whittingham, "Parthenogenesis"; E. Chambers, "Calcium and interrelationships with Na^+." Round table: Lionel Jaffe, M. Paul, R. Steinhardt, "Ca^{+2} levels in eggs at fertilization." Structural and metabolic changes (A. Monroy, chairman): D. Epel, "Cell *p*H and metabolic activation"; J. Van Blerkom, "Protein synthesis patterns"; Y. Yasumasu, "Enzyme changes." B. Brandhorst and C. Epstein, discussants. Fertilization in relation to cell division: D. Mazia. Fertilization as a target for contraceptive development (W. Sadler, chairman): S. Segal, A. Kessler; R. Gwatkin, C. Metz, discussants. Summation: M. Bedford.

Few Body Problems in Chemistry and Physics

Kimball Union Academy

Yeong E. Kim, chairman; Donald J. Kouri, vice chairman.

15 August. One session on mathematical method for few-body systems and session on NN and pNN systems.

16 August. One session on three-nucleon problems: D. Secrest, "Current techniques in closed coupling calculations"; R. E. Wyatt, "Modern closed coupling techniques for rearrangement collisions."

17 August. One session on polarization phenomena in few-nucleon systems and session on atomic and nuclear N-body systems.

18 August. W. H. Miller, "Semi-classical theory of collision processes"; T. F. George, "Theory of collision induced electronic and radiative transitions in an intense laser field"; and session on relativistic few-body problems.

19 August. D. J. Kouri, "Angular momentum decoupling approximation in multiparticle scattering"; H. Rabitz, "Stochastic theory of collision processes."

Fiber Science

Colby-Sawyer College

Earl Peters, chairman; James P. Parker, vice chairman.

4 July. (S. Ross, discussion leader): J. W. S. Hearle, "Flexural fatigue of fibers"; Y. K. Kamath and H.-D. Weigmann, "Effects of polymer treatments on the properties of human hair." (Nancy C. Watkins, discussion leader): S. Matsuoka, "Polymeric coatings for optical fibers."

5 July. (P. Popper, discussion leader): W. O. Statton, "Molecular behavior during a stress-strain curve"; M. Konopasek, "The development and textile applications of one-dimensional continuum mechanics." (K. Greenwood, discussion leader): J. J. Thwaites, "The dynamics of false-twist texturing"; S. Backer, "False-twist texturing: process and material interactions during steady and transient states."

6 July. (D. R. Buchanan, discussion leader): E. Schollmeyer and G. Kuehnle, "The relationship of polyester fiber structure and dye diffusion"; G. Valk, "The response of nylon and polyester fibers to dyeing"; W. Biedermann, "Chemistry and dyeing: problems in designing dyes for acrylic and polyester fibers."

7 July. (F. Fortess, discussion leader): R. H. Peters, "Mechanism of carrier dyeing"; W. T. Holfeld and M. S. Shepard, "Water as a carrier in dyeing and processing nylon"; H. Zollinger, "Color: perception and psycholinguistics."

8 July. (J. L. Lundberg, discussion leader): H. C. Bach, F. Dobinson, K. R. Lea, and J. H. Saunders, "High strength/high modulus fibers of p-phenylene oxadiazole/hydrazide copolymers"; M. Jaffe, "Structure-property relationships of aramids."

Fluids in Permeable Media Physics and Chemistry of Displacement

Kimball Union Academy

L. E. Scriven, chairman; T. M. Geffen, vice chairman.

25 July. Sedimentology and pore physics (R. S. Schechter, chairman): W. A. Pryor, "Anatomy of sandstone reservoirs"; J. W. Neasham, "Reservoir rock pore types as revealed by scanning electron microscopy"; N. C. Wardlaw, "The geometry and origin of pore systems in carbonate rock and their influence on reservoir performance." Mechanics, population dynamics of residual phase blobs: C. F. Brandner, J. C. Slattery, N. R. Morrow, H. T. Davis.

26 July. Macroscopic displacement mechanisms (J. C. Melrose, chairman): R. G. Larson, "Percolation theory of two-phase flow in porous media"; R. E. Gladfelter, "Unusual saturation changes in dynamics displacement of oil and water observed by microwave attenuation"; N. R. Morrow, "Displacement studies at uniformly wetted rough surfaces"; C. Bardon, "Influence of interfacial tension on relative permeability."

27 July. Enhanced petroleum recovery by carbon dioxide flooding (R. Simon, chairman): K. D. Luks, "Equilibrium phase behavior of CO_2-hydrocarbon ternary systems"; E. Zana, "Investigation of vapor-liquid equilibria and interfacial tension behavior of CO_2-reservoir oil systems"; R. S. Metcalfe and W. F. Yellig, Jr., "Relationship between PVT characteristics of oils and mechanism of miscibility development for CO_2 flooding"; G. S. Charleson, "Unit displacement efficiency in CO_2-miscible flooding."

28 July. Fundamentals of surfactant-based recovery processes (J. J. Taber, chairman): P. D. Fleming, "Physicochemical mechanisms of phase behavior and low interfacial tension: fundamental considerations"; W. H. Wade, "Role of surfactant concentration and alcohol addition on low interfacial tension and third phase function"; D. O. Shah, "Influence of salt concentration on stability, interfacial properties and electrical characteristics of surfactant formulations"; R. L. Reed and R. N. Healy, "Measurement of interfacial tension for some microemulsion and aqueous surfactant systems."

29 July. Enhanced petroleum recovery by surfactant-based processes (T. M. Geffen, chairman): (speaker to be announced), "Physicochemical mechanisms of phase behavior and low interfacial tension: application to oil recovery"; (speaker to be announced), "Non-equilibrium effects in chemical flooding."

Food and Nutrition

Colby-Sawyer College

R. E. Smith, chairman; P. A. Lachance, vice chairman.

8 August. Diet and metabolism: Effects of dietary composition on insulin action (Gerald Reaven and Jerrold Olefsky, session chairmen): Effects of dietary composition and weight gain on hormonal control of carbohydrate metabolism (Ed Horton and Lester Salans, session chairmen).

9 August. Effect of dietary composition on lipid metabolism, thermogenesis and thyroid function (Elliot Danforth, session chairman): Margaret Albrink, "Effect of dietary composition on lipid metabolism." Diet and child behavior: Current situation (Sheldon Margen, session chairman): Jonathan Pincus, "Clinical aspects"; Charles Goyette, "Diet as a factor in management."

10 August. Social implications (Thomas Cooney, Jr., session chairman): Dorothy Lewis, "Medical history and delinquency"; Chester Poremba, "Learning disabilities and delinquency." Research needs (Paul Lachance, session chairman): Sheldon Margen, "Hormone research direction"; Bernard Weiss, "Psychopharmacology."

11 August. Diet and cancer: Ernest Wynder, "Epidemiological, experimental and preventative aspects of dietary carcinogenesis"; Michael Sporn, "Specific dietary intervention in cancer"; David Kritchevsky, "Diet and health."

12 August. John Kinney, "Metabolic and nutritional needs of cancer patients"; Stanley Dudrick, "Nutrition management of cancer patients."

An application blank for attendance at the Gordon Research Conferences may be found on page 1033.

Free Radical Reactions

Proctor Academy

J. Michael McBride, chairman; Douglas C. Neckers, vice chairman.

13 June. (Cheves Walling, discussion leader): D. D. Tanner, "Application of Ockham's Razor to the mechanism of free radical bromination"; E. Grunwald, "Free radicals in megawatt infrared laser chemistry." (Harold M. Swartz, discussion leaders): D. C. Borg, "Free radical intermediates in carcinogenesis"; R. J. Lorentzen and P. O. P. Ts'o, "One-electrical oxidation in chemical carcinogenesis."

14 June. (Gerhard L. Closs, discussion leader): H. D. Roth, "Nuclear spin polarization in photoredox reactions"; J. R. Bolton, "Transient radical intermediates in photosynthesis." (J. C. Martin, discussion leader): C. Rüchardt, "Steric and electronic effects on the strength of C-C bonds."

15 June. (Paul J. Krusic, discussion leader): P. S. Engel, "Thermal and photochemical decomposition of azo compounds"; A. L. J. Beckwith, "Stereoelectronic effects in radical reactions." (Hara Misra, discussion leader): B. H. J. Bielski, "Does the Haber-Weiss reaction occur in biological systems?" F. P. Sargent, "Spin trapping studies in radiation chemistry."

16 June. (John E. Leffler, discussion leader): P. D. Bartlett, "Radicals and biradicals in photo-oxidation"; K. Tokumaru, "Photochemistry of benzoyl peroxide-the effect of an external magnetic field." (Douglas C. Neckers, discussion leader): Three short presentations based on the poster program.

17 June. (William A. Pryor, discussion

leader): W. Adam, "Diradicals derived from cyclic peroxides"; N. A. Porter, "Monocyclic and bicyclic peroxides as intermediates in prostaglandin biosynthesis."

Fuels Science

Plymouth State College

Frank C. Schora, chairman; Jack B. Howard, vice chairman.

4–8 July. Coal chemistry and catalysis (Wendell H. Wiser, session chairman): Franklin J. Wright, "Catalyzed gasification of carbon and chars"; K. Ouchi, "Mechanism of hydrogenation of coal derived asphaltenes"; Alex G. Oblad and Joseph Shabtai, "Hydrogenolysis and catalytic hydrogenation of coal derived liquids." Coal pyrolysis (Jack B. Howard, session chairman): George Garalas, "Experimental and modeling studies in coal pyrolysis": David W. Blair, "Investigation of the pyrolysis stage of coal particle combustion with emphasis on nitrogen and sulfur conversion"; Eric M. Suuberg, "Product composition and kinetics of coal pyrolysis and hydropyrolysis." Coal ash (Lester G. Massey, session chairman): Joel M. Williams, "Trace elements and leaching from coal feed preparation wastes"; Bernard S. Lee, "Mechanism of the phenomenon of coal ash agglomeration in fluid-bed reactors"; H. R. Hoy and Dennis Hebden, "Behavior of mineral matter in coal gasification and combustion processes"; Robert G. Jenkins, "Characterization of mineral matter in coal—application to liquefaction processes." Utilization of carbon monoxide and hydrogen (Irving Wender, session chairman): Frank Massoth, "Synthesis of light hydrocarbons from carbon monoxide and hydrogen over selected metal catalysts"; Rowland Pettit, "Homogeneous catalytic reductions with carbon monoxide and water in place of hydrogen"; Renato Ugo, "The mechanism of catalytic synthesis of chemicals from carbon monoxide—relationships between heterogeneous and homogeneous catalysis."

Gametogenesis

Plymouth State College

John D. Biggers, chairman.

11 July. Initiation of meiosis in fetal development: Wai Sum O, Jye-Suing Fang, P. Mauleon. Biochemistry of spermatogenesis: Yasuo Hotta, Jerry Dooher, Edward Eylar.

12 July. Oocyte differentiation: A. Fischer, L. D. Burzio, L. A. Chouinard. Oocyte growth and metabolism: Paul Wassarman, William Wasserman, Torbjörn Hillensjö.

13 July. Techniques for the isolation of spermatogenic cells: Anthony Bellvé, Marvin Meistrich, Barton Gledhill. Biogenesis of membrane components during spermatogenesis: Lonnie Russell, Clarke Millette, R. P. Erickson.

14 July. Oocytes—ions and plasma membrane: Samuel Horowitz, R. Douglas Powers, Allen W. Schuetz. Pairing and crossing over during meiosis: A. L. Kierszenbaum, D. von Wettstein.

15 July. Control of final meiotic maturation in the oocyte: A. Tsafriri, Georgianna Jagiello, Mary Hay.

Hemostasis

Kimball Union Academy

Philip W. Majerus, chairman; Yale Nemerson, vice chairman.

13 June. The biological significance of plasminogen activators (Kenneth Robbins, discussion leader): Edward Reich, "Biological role(s) of plasminogen activator(s)"; Nubuo Aoki, "Alpha-2 plasmin inhibitor. Its physiochemical and physiological properties." Extracellular proteins of plasma and tissues involved in cell transformation (Michael Mosesson, discussion leader): Antti Vaheri, "Fibronectin (cold-insoluble globulin), a polymorphic glycoprotein of connective tissue and plasma; molecular and biological properties, and altered expression in malignant cells"; Lan Bo Chen, "Surface alteration and mitogenicity of thrombin on fibroblasts, myoblasts and splenocytes."

14 June. Heparin structure and function (Craig Jackson, discussion leader): Ulf Lindahl, "Heparin, structure-function relationships"; Robert Rosenberg, "Antithrombin heparin interaction"; Richard Feinman, "The role of heparin in the thrombin-antithrombin reaction." Platelet factor 4 and its glycosaminoglycan carrier (Thomas F. Deuel, discussion leader): E. F. Lüscher, "Platelet factor 4 and the glycosaminoglycan carrier"; Gottfried Schmer, "Isolation, physicochemical characterization and amino acid sequence of human platelet factor 4"; Shirley Levine, "Immunologic studies of platelet factor 4."

15 June. The mechanism of vitamin K carboxylations (Johan Stenflo, discussion leader): John W. Suttie, "Vitamin K carboxylase"; Robert Olson, "Requirements of the vitamin K-dependent carboxylase system"; Paul A. Friedman, "Vitamin K–dependent protein carboxylation in hepatic and other tissues." New concepts in factor VIII–von Willebrand's factor (Ralph Nachman, discussion leader): Earl Davie, "Factor VIII and the role of serine proteases in blood coagulation."

16 June. J. Bryan Smith (discussion leader): Salvador Moncada, "Prostacyclin, identification and properties"; Philip Needleman, "Pharmacologic manipulation of arachidonate metabolism in platelets." Complement (Fletcher B. Taylor, Jr., discussion leader): Hans Müller-Eberhard, "The complement system."

17 June. Thrombin-platelet interactions (Philip W. Majerus, discussion leader): Thomas Detweiler, "Equilibrium aspects of the thrombin-platelet interaction."

Heterocyclic Compounds, Chemistry of

New Hampton School

Alfred Hassner, chairman; Ray Firestone, vice chairman.

4–8 July. H. Staab, "Sulfur heterocycles as intermediates for the synthesis of new aromatic systems"; E. Wenkert, "Alkaloid synthesis"; S. Wolfe, "Penicillin biosynthesis"; T. Mukayama, "New synthetic reactions based on the onium salts of azaaromatics"; K. Mislow, "Stereochemical problems in thiabenzene chemistry"; F. W. Fowler, "Dihydropyridines. New approaches to their preparation and use as synthetic intermediates"; W. D. Ollis, "Mesoionic compounds"; D. Elad, "Reaction selectivity in photochemical and free radical reactions of nucleic acid heterocyclic bases"; D. Coffen, "Heterocycles from cyanoacetone derivatives"; W. Wieranga, "Heterocyclic 1,3-annulation reaction"; A. Padwa, "Photochemistry of small ring heterocycles"; E. Ciganek, "Novel heterocycles by intramolecular Diels-Alder reactions"; R. Lyle, "1-acyldihydropyridines as synthetic reagents"; H. Shechter, "Unusual heterylidenes and heterylalkylidenes"; J. Carson, "Control of regioselectivity in electrophilic substitution reactions of N-substituted pyrroles."

Hydrocarbon Chemistry

Holderness School

Marvin L. Poutsma, chairman; Kendall N. Houk, vice chairman.

13 June. John T. Groves, "Aliphatic hydroxylation catalyzed by iron"; Norman C. Deno, "Direct hydroxylation and highly selective chlorination of alkanes"; Jacques-Emile DuBois, "Reac-

tivity of unsaturated hydrocarbons: interpretation and prediction by classical and new structural correlations."

14 June. Allan Maccoll, "Some aspects of gas phase kinetics"; Warren J. Hehre, "Experimental and theoretical approaches to structures and stabilities of carbocations"; Herbert C. Brown, "Hydroboration in hydrocarbon chemistry."

15 June. D. Duayne Whitehurst, "A comparative study of the homogeneous and heterogeneous catalysis of propylene dimerization by nickel complexes"; Earl M. Thorsteinson, "Oxidative dehydrogenation of ethane over catalysts containing mixed oxides of molybdenum and vanadium"; Jerome A. Berson, "Identification of reactive intermediates."

16 June. Heinz Dürr, "Photochemistry of unsaturated spiro compounds." Open—short contributions from conferees. Harold H. Freedman, "Some new applications of phase transfer catalysis."

17 June. Joseph J. Gajewski, "Stereochemistry of pyrolytic ring opening reactions"; Tada Fukanaga, "The HOMO-LUMO gap as a criterion for apparent stability."

Inorganic Chemistry

New Hampton School

Dale W. Margerum, chairman; A. P. Ginsberg, vice chairman.

Generation and Characterization of Reactive or Novel Inorganic Species. The Role of Reactive Species in Catalytic Processes.

1 August. Cryochemistry (G. A. Ozin, chairman): G. A. Ozin, "Metal atom chemistry and catalysis"; K. J. Klabundi, "Organic chemistry of metal vapors: oxidative-additives and metal cluster studies"; Richard Messmer, "Xα studies and metal clusters"; W. Goddard, "Ab initio studies of catalytic mechanisms."

2 August. Chemical methods (D. W. Margerum, chairman): N. Bartlett, "Salts of novel cations"; Ronald Gillespie, "New cations of sulfur, selenium and tellurium: preparation, property and structure." Pulse radiolysis (M. Z. Hoffman, chairman): M. G. Simic, "Techniques of pulse radiolysis; ligand labilization processes"; M. Z. Hoffman, "Coordinated-reduced ligand radicals and reduced metal centers"; D. Meyerstein, "Reactions of free radicals with transition metal complexes in aqueous solutions."

3 August. Electrochemistry (D. T. Sawyer, chairman): D. H. Busch, "Electrochemical generation of reactive intermediates"; William E. Geiger, Jr., "Electrochemistry as a probe to unusual metal oxidation states"; D. T. Sawyer, "Inorganic chemical aspects of superoxide dismutase"; Stephen J. Lippard, "Redox character of platinum blue"; Arthur T. Hubbard, "Electrochemistry of single crystal surfaces"; Harry B. Mark, Jr., "Spectroelectrochemistry of various corrin metal complexes."

4 August. Photochemistry (N. Sutin, chairman): Gregory L. Geoffroy, "Photochemistry generation of reactive species"; Mark S. Wrighton, "Photogeneration of reactive organometallic radicals and anions"; Carol Creutz, "Unusual oxidative states of polypyridine complexes." Catalytic processes (J. E. Bercaw, chairman): R. R. Schrock, "Role of metal carbenes in catalytic processes"; T. Herskovitz, "Activation of carbon dioxide by transition metal systems."

5 August. Catalytic processes (continued): J. E. Bercaw, "Reduction of carbon monoxide by hydride and alkyl derivatives of permethyl zircocene"; C. P. Casey, "Model studies of metal catalyzed carbon monoxide reduction"; J. R. Shapley, "Organometal cluster chemistry."

There will be poster sessions in addition to the scheduled speakers. Those interested should contact Dale W. Margerum, Department of Chemistry, Purdue University, West Lafayette, Indiana 47907.

Inorganic Geochemistry of Ore Deposits

Proctor Academy

Harold C. Helgeson and Denis Norton, co-chairmen.

11 July. Chemical environment of hydrothermal ore deposition (R. Nielson, chairman): S. R. Titley, "Porphyry copper deposits: geochemical parameters as inferred from regional environments"; R. W. Hutchinson, "Geochemical and geologic evolution of massive sulfide deposits." High temperature solution chemistry (H. L. Barnes, chairman): D. A. Crerar, "High temperature solubility experiments: design and application to hydrothermal ore deposition"; J. L. Bischoff, "Hydrothermal chemistry of sea water from 25° to 350°C."

12 July. Reaction kinetics (R. M. Garrels, chairman): R. Petrovich, "Kinetic aspects of mineral/solution interaction in hydrothermal systems"; J. D. Rimstidt, "Hydrothermal reaction kinetics in terms of thermodynamic variables." Hydrothermal alteration (J. J. Hemley, chairman): M. T. Einaudi, "Correlation of alteration stages in igneous vs. sedimentary rocks of porphyry copper deposits and implications with regard to the environment of skarn formation"; R. E. Beane, "Determination of alteration environments from fluid inclusion and mineral stability data."

13 July. Geothermal systems and ore deposits (P. B. Barton, chairman): W. C. Shanks, "Submarine hydrothermal deposits at divergent plate boundaries"; D. K. Bird, "Effects of reactions in intracontinental geothermal systems on the ore-forming potential of hydrothermal solutions." Heat flow, meteoric water circulation, and ore deposition (H. P. Taylor, chairman): M. Margaritz, "Isotopic evidence for widespread meteoric-hydrothermal alteration of the granitic batholiths of Western North America"; J. E. Knight, "Numerical simulation of reactions between rocks and circulating fluids."

14 July. Magmatic generation of ore fluids (C. W. Burnham, chairman): J. A. Whitney, "Generation and composition of magmatic fluids"; T. Gerlack, "Composition limits for complex magmatic gases in the system C-O-H-S-N-C1-F." Magmatic ore deposition (A. J. Naldrett, chairman): J. M. Duke, "Numerical modeling of the formation of Ni-Cu sulfide deposits"; T. N. Irvine, "Chromite precipitation as a result of the mixing of silicate magmas."

15 July. Review and prognosis (D. Norton, chairman); General discussion of major advances in understanding the geochemistry of ore deposits, past and future (discussion leader: H. C. Helgeson).

Interfaces, Chemistry at

Kimball Union Academy

Tomlinson Fort, Jr., chairman; Peter Cannon, vice chairman.

18 July. Overview of interfacial interactions of aerosols (George Walker, Jr., chairman): George Walker, Jr., "Microscopic interactions at gas-surface interfaces"; William Wilson, "The role of interfacial chemistry in the study of air pollution aerosols." Recent advances in experimental and theoretical aspects of nucleation phenomena (A. W. Castleman, chairman): W. J. Dunning, "Nucleation, coagulation and growth of aerosols"; D. Stauffer, "Advances in nucleation theory"; Howard Reiss, "Theory and application of nucleation"; John B. Fenn, "Early stages of van der Waals polymerization in free jet expansion."

19 July. Formation of atmospheric aerosols (George M. Hidy, chairman):

Jack Durham, "Gas phase reactions leading to pollution aerosol formation"; James P. Friend, "Aspects of the formation of stratospheric aerosols"; Leonard Newman, "Sulfur chemistry of atmospheric aerosols"; A. W. Castleman, "Chemistry of sulfate aerosol formation." Heterogeneous chemistry of atmospheric aerosols (Alan B. Harker, chairman): Henry Judeikis, "Heterogeneous interactions of gaseous air pollutants"; James Huntzicher, "Kinetics of sulfuric acid aerosol neutralization by ammonia"; Robert O'Brien, "In-situ observation of gas-particle interactions by electron microscopy"; Alan B. Harker, "Gas-surface reactions of sulfate containing aerosols."

20 July. Surface effects and mechanical behavior (A. R. C. Westwood, chairman): E. D. Shchukin, "Recent developments in the field of physico-chemico mechanical effects"; N. V. Pertsov, "Applications of environment sensitive mechanical behavior." Surface effects and mechanical behavior (A. R. C. Westwood, chairman): Ronald M. Latanision, "Interface dependent mechanical behavior."

21 July. Phase transformations in thin films (Frederick A. Putnam, chairman): André Thomy, "Adsorption of simple molecules on graphite"; David Cannell, "The gas-liquid phase transition in a monomolecular film." The future of our science (Peter Cannon, chairman): B. A. Pethica, "Whither colloid and surface chemistry."

22 July. Surfactants and micelles (Lawrence E. Benjamin, chairman): Robert Laughlin, "Solvation and structural requirements of surfactant hydrophilic groups"; D. Fennell Evans, "Micelles: their structure and role in detergency as determined by surfactant specific ion electrodes."

Ion Exchange

Brewster Academy

Abraham Clearfield, chairman; John R. Millar, vice chairman.

25 July. Basic theory (H. P. Gregor, chairman): F. Franks, "Water structure—the present state of the art"; H. P. Gregor, "Theory of cation selectivity in simple systems—the apparent dielectric constant of water"; K. Bunzl, "Competitive ion exchange in mixed cation exchanger systems—kinetics and equilibria"; R. C. Johnston, "Kinetics of alkali metal ion self-exchange on polystyrene sulfonate resin in dimethyl sulfoxide–water media."

26 July. Ion exchange membranes (K. S. Spiegler, chairman): J. W. Lorimer, "Theories of transport in ionic membranes"; R. Paterson, "Electron exchange across membranes"; F. Helfferich, "Implications of ion exchanger for petroleum research"; M. Seko, "Membranes for the chlor-alkali industry." Ion exchange in biological systems (D. G. Howery, chairman): R. Damadian, "The theory of the biological ion exchanger resins"; D. G. Howery, "Models for biological ion exchanger resins"; G. N. Ling, "Ion adsorption and exclusion from cell water."

27 July. Analytical applications of ion exchange (G. E. Janauer, chairman): J. Korkisch, "Application of anion exchange methods to the determination of uranium and thorium in river and marine sediments"; E. Moyers, "Synthesis and applications of two novel chelating resins for metal ion separation and trace concentration"; J. Inczedy, "Chromatographic separation of organic acids and bases using complex formation reactions"; J. Benson, "Optimization of parameters in high pressure liquid chromatography"; W. W. Pitt, "Recent results in high resolution ion exchange chromatography in aquatic environmental analysis"; J. X. Khym, "Identification of chromatographic peaks by band width measurements in the ion exchange chromatography of nucleotides"; R. Wood, "Applications of affinity chromatography on resins in clinical diagnostics."

28 July. New developments (J. R. Millar, chairman): E. Blasius, "The role of macrocyclic ether polymers as ion exchangers"; A. Melaja, "Ion exchange chromatography of sugars on a commercial scale"; F. X. McGarvey, "The practical development of ion exchange technology"; R. Peterson, "Some applications of synthetic sorbents"; R. E. Anderson, "Application of carboxylic resins"; H. F. Walton, "Ion exchange around the world."

29 July. Inorganic ion exchangers (H. S. Sherry, chairman): G. Alberti, "New synthetic crystalline ion exchangers"; A. Dyer, "Ion exchange in zeolite A and clinoptilolite"; A. Cremers, "Ion exchange adsorption of metal uncharged ligand complexes in zeolites, clays and resins"; H. Sherry, "Ion exchange in the natural zeolite erionite."

Laser Interaction with Matter

Tilton School

John M. Dawson, chairman; Keith Boyer, vice chairman.

8 August. Basic experiments (Ray E. Kidder, chairman): Vivian Rupert, Ken Manes, Gene H. McCall, T. Tan, Fred Mayer, Stephen Bodner. Foreign contributions Abraham Hertzberg, chairman): Martin C. Richardson, Richard O. Sigel, Robert I. Dautray, Edouard Fabre.

9 August. Plasma physics theory (Richard L. Morse, chairman): Claire Max, Dale B. Henderson, J. Kindel, Neveille Luhmann. MHD theory and pellet design (John H. Nuckolls, chairman): Moshe J. Lubin, John Lindl, William C. Mead, E. Lindman, Jr., R. Mason, Jay Boris.

10 August. Foreign contributions (A. J. Alcock, chairman): N. G. Basov, A. M. Prokhorov, Chiyoe Yamanaka. Electron and ion beam pellet fusion (Sylvester Kaliski, chairman): Lonya I. Rudakov, Everet H. Beckner, Alfred Maschke.

11 August. Long solenoid (L. Johnson, chairman): Alan L. Hoffman, Z. A. Pietrzyk, Allan Offenberger, Kenneth F. McKenna, Sid Putnam. Pellet experiments (Arthur H. Guenther, chairman): Lamar Coleman, Michael Boyle, D. Giovanielli, J. Miller, Ian J. Spaulding, Moshe J. Lubin.

12 August. Advanced lasers (Francis F. Chen, chairman): Roy Johnson, John Madey, S. A. Ramsden.

Lipid Metabolism

Kimball Union Academy

David F. Silbert, chairman; John M. Dietschy, vice chairman.

20 June. Membrane and membrane lipids I (J. Seelig, session chairperson) D. Engelman, (subject to be announced); H. McConnell, (subject to be announced); Poster presentations I. Membranes and membrane lipids II (L. D. Bergelson, session chairperson): R. Simoni and L. Sklar, "Conjugated polyene fatty acids as membrane probes: Studies of model systems and the visual photoreceptor membrane"; M. Shinitzky, "Modulation of membrane receptors by lipid microviscosity."

21 June. Lipid-protein interactions I (A. Jonas, session chairperson): W. Stoffel, "Physical and chemical studies on the regiospecific interactions between lipids and proteins"; O. H. Griffith, "Lipid-protein interactions in membranes"; Poster presentations II. Lipid-protein interactions II (L. Banaszak, session chairperson): G. Khorana, (subject to be announced); S. Fleischer, (subject to be announced); C. Jackson, "The calcium ion mediated association of vitamin K related coagulation proteins with phospholipid bilayer surfaces."

22 June. Protein-lipid interactions in

membrane structure and assembly (M. J. Osborn, session chairperson): R. Franklin, "Protein-lipid interactions as studied with bacteriophage PM2 and other natural membranes"; K. W. A. Wirtz, "The interaction of phospholipid exchange proteins with membranes"; Poster presentations III. Biogenesis and function of membranes (R. Bell, session chairperson): M. Glaser, "The role of phospholipids, especially the polar head group, in membrane structure and function"; J. C. Metcalfe, (subject to be announced); R. O. Poyton, "Assembly of cytochrome c oxidase, an oligomeric membrane enzyme."

23 June. Lipid synthesis (K. Bloch, session chairperson): E. Schweizer, "Biosynthesis and structure of the yeast fatty acid synthetase complex"; A. Alberts, "Regulation of the synthesis of fatty acid synthetase"; Poster presentations IV. Receptor-mediated control of cholesterol metabolism (G. Popjak, session chairperson): M. Brown, "Biochemical and ultra structural studies of the LDL receptor on mammalian plasma membranes"; J. Goldstein, "Mutations affecting the LDL receptor and the metabolism of cholesterol in mammalian cells."

24 June. Receptor-mediated control of lipid synthesis and membrane permeability (J. Law, session chairperson): D. Lane, "Mechanism for the acute control of fatty acid synthesis by cAMP in the liver cell"; J. Moss, "Studies on the receptor specificity and enzymatic activities of choleragen: Possible mechanism for activation of adenylate cyclase."

Liquids, Chemistry and Physics of

Holderness School

P. A. Egelstaff, chairman; B. J. Adler, vice chairman.

8–12 August. Surface and interfaces I (F. Buff, discussion leader): G. Stell, "Surface phenomena—a review"; J. W. Cahn, "Phase transitions in interfaces." Surfaces and interfaces II: D. Cannell, "Mono-molecular layers on liquid surfaces"; D. Henderson, "Computer simulation studies of surfaces." Metastability (J. Rowlinson, discussion leader): A. Angell, "Experimental studies of supercooling"; B. Berne, "Superheating of droplets." Phase transitions (J. E. Enderby, discussion leader): A. Rahman, "Freezing of the Lennard-Jones fluid"; R. B. Griffiths, "Phase transitions in multicomponent systems." Simple molecular liquids (J. G. Powles, discussion leader): W. B. Street, "Structure of molecular liquids by computer simulation"; A. Bellemans, "Statistical mechanics of liquids composed of chain molecules." Chemical reactions and liquid structure (M. Fixman, discussion leader): D. Chandler, "Chemical reactions in condensed phases"; K. Eisenthall, "Picosecond experiments on chemical kinetics." Dynamics of atomic fluids (R. D. Mountain, discussion leader): S. Yip, "Developments in kinetic theory"; S. Lovesey, "Space-time correlations and collective modes"; S. H. Chen, "Experimental studies of collective modes and microscopic diffusion." General theory (L. Kandanoff, discussion leader): J. Lebowitz, "Rigorous theory of metastability and phase transitions." Liquids with long range forces (E. U. Franck, discussion leader); H. Friedman, "Ionic liquids."

Macromolecules and Behavior

Brewster Academy

V. E. Shashoua, chairman; E. L. Bennett, M. M. Rapport, vice chairmen.

8 August. Drug effects on macromolecular synthesis: J. L. McGaugh, "Drug effects on rates of learning and recall"; B. W. Agranoff, "Time parameters in macromolecular synthesis." Discussants: J. Flood and E. L. Bennett, "Drug effects on memory"; A. Cherkin, "Amnestic effects of L-proline"; C. E. Zomzely-Neurath, "Drug effects on brain macromolecular synthesis." Hormonal and biogenic amine effects: D. de Wied, "Effect of ACTH peptides on behavior"; B. S. McEwen, "Steroid effects on behavior"; D. Quartermain, "Biogenic amine effects on behavior and macromolecular synthesis." Discussants: A. J. Dunn, "ACTH effects and memory"; W. H. Gispen, "ACTH and behavior."

9 August. Phosphoproteins: C. S. Rubin, "Biochemistry of phosphoproteins"; J. E. Wilson, "Phosphoprotein changes during training." Discussants: A. Routtenberg, "Phosphoproteins and behavior"; J. L. Sirlin, "Phosphoproteins in goldfish brain." Synaptic involvement in plasticity I: Neurophysiological evidence: R. Thompson, "Habituation in cat and frog spinal cord"; G. Lynch, "Hippocampus as a model system." Discussant: T. Teyler, "Habituation in the hippocampus."

10 August. Brain macromolecules and behavior I: S. P. R. Rose, "Imprinting and macromolecular synthesis"; V. E. Shashoua, "Brain protein metabolism and the acquisition of new behavioral patterns." Discussant: D. Wilson, "Protein synthesis patterns in sympathetic ganglia." Brain macromolecules and behavior II: H. Gainer, "Peptidergic neurons in aplysia"; M. Karnovsky, "Biochemistry of sleep"; S. Arch, "Hormonally directed behavior in aplysia."

11 August. Neuroimmunology: B. Hartman, "Neural mapping of brain proteins"; S. Karpiak, "Effects of antisera on memory retention." Discussants: L. Benowitz, "Mapping of a goldfish brain protein metabolically linked to a behavioral change"; D. Samuel, "Antisera to synaptic plasma membranes." Dominick P. Purpura, "Modifications of neuronal development in human cerebral cortex: consequences for behavior."

12 August. Synaptic involvement in plasticity II: Biochemical and anatomical evidence: H. Mahler, "Topography of synaptic proteins"; M. M. Rapport, "Immunological studies of synaptic proteins." Discussants: W. Greenough, "Synaptic and dendritic changes after prolonged training"; M. R. Rosenzweig, "Environmental effects on brain anatomy and behavior."

Magnetic Reconnection in Space and Laboratory Plasmas

Brewster Academy

F. W. Perkins, chairman; K. Papadopoulos, vice chairman.

20 June. Overviews of magnetic reconnection (F. Perkins, discussion leader): J. W. Dungey, "Magnetic reconnection in the magnetosphere"; G. Van Hoven, "Magnetic reconnection in solar physics"; P. Kaw, "Magnetic reconnection in tokamaks." Observations of magnetic reconnection (T. Holzer, discussion leader): R. Fredricks and F. Scarf, "Reconnection in the magnetosphere"; A. Krieger, "Solar physics observations and magnetic reconnection"; P. Politzer, "Laboratory observations of magnetic reconnection."

21 June. Magnetic reconnection and disruptive instabilities in tokamaks (J. Drake, discussion leader): R. White, "Magnetic reconnection and tearing modes in tokamaks"; G. Jahns, "Observations of the internal structure of tokamaks"; S. Von Goeler, "A review of disruptive instability observations and models." Theories of magnetic reconnection, I (G. Guest, discussion leader): B. Waddell, "Computational simulation of tearing modes and disruptive instabilities in tokamaks"; J. Arons, "Magnetic reconnection outside the solar system"; B. Sonnerup, "Continuum theory of magnetic field reconnection."

22 June. Theories of magnetic reconnection, II (C. S. Liu, discussion leader):

A. A. Galeev, "Nonlinear instability theory for a diffusive neutral layer"; F. V. Coroniti, "Magnetic reconnection, steady or unsteady?" T. H. Stix, "Magnetic braiding." Astrophysics and acceleration (D. Wentzel, discussion leader): F. Curt Michel, "Pulsars, reconnection, and particle acceleration"; K. Widing, "Observations of solar arches"; D. Spicer, "An unstable arch model of a solar flare."

23 June. Observations of magnetic reconnection (L. Burlaga, discussion leader): V. Formisano, "Interplanetary D-sheets"; P. Baum, "Laboratory experiments"; D. Baker, "The role of reconnection in toroidal z-pinches." Magnetosphere and tokamaks (R. Fredricks, discussion leader): T. Jensen, "Magnetic reconnection in doublet tokamaks"; L. A. Frank, "Evidence of magnetic merging in the earth's magnetosphere"; S. Krimigis, "Observations of energetic electrons E > 200 MeV in the earth's magnetotail."

24 June. Conference summary: future directions in reconnection research (K. Papadopoulos, discussion leader): W. I. Axford, "Space plasmas"; R. Pellat, "Laboratory plasmas," Panel discussion: V. M. Vasyliunas, F. V. Coronti, T. H. Stix, J. Arons, R. Z. Sagdeev.

Magnetic Resonance

Brewster Academy

Melvin P. Klein, chairman; Saul Meiboom, vice chairman.

13 June. P. Fedders, "Analysis of quadrupolar effects in magnetic resonance"; J. Boyce, "NMR studies of sublattice melting in superionic conductors"; T. Aton, "NMR of near neighbor satellites in dilute transition metal

Program Summary, Gordon Research Conferences

	Colby-Sawyer College New London, N.H.	New Hampton School New Hampton, N.H.	Kimball Union Academy Meriden, N.H.	Tilton School Tilton, N.H.
13–17 June	Mammary Gland Biology	Nucleic Acids	Hemostasis	Theoretical Biology and Biomathematics
20–24 June	Nuclear Chemistry	Proteins	Lipid Metabolism	Animal Cells and Viruses
27 June–1 July	Catalysis	Atherosclerosis	Bones and Teeth Chemistry, Physiology and Structure of	Carbohydrates, Chemistry of
4–8 July	Fiber Science	Heterocyclic Compounds, Chemistry of	Enzymes, Coenzymes and Metabolic Pathways	Cyclic Nucleotides
11–15 July	Polymers	Statistics in Chemistry and Chemical Engineering	*Line and Point Defects in Semiconductors	Nuclear Structure Physics
18–22 July	Corrosion	Organic Reactions and Processes	Interfaces, Chemistry at	Microbiological Degradation
25–29 July	Elastomers	Natural Products	Fluids in Permeable Media	Molten Salts and Metals
1–5 August	Medicinal Chemistry	Inorganic Chemistry	Toxicology and Safety Evaluations	Ceramics, Solid State Studies in
8–12 August	Food and Nutrition	Analytical Chemistry	Catecholamines	Laser Interaction with Matter
15–19 August	Separation and Purification	Environmental Sciences: Air	*Few Body Problems in Chemistry Physics	Elementary Particle Interaction
22–26 August	Cancer	Adhesion, Science of	Structural Macromolecules: Glycoproteins	Transport Phenomena in Lipid Bilayer and Biological Membranes

*New conferences in 1977

alloys''; A. Fiory, ''Magnetic resonance with positive muons.''

14 June. J. S. Waugh, ''Spinning spins in spinning samples''; U. Haberlen, ''Harvesting time in high resolution proton magnetic resonance in solids''; R. W. Vaughan, ''Two-dimensional spectroscopy in solid state spin-½ systems''; R. E. Ernst, ''Two-dimensional spectroscopy: recent progress, technology, and applications.''

15 June. M. Bloom, ''Molecular structure and molecular motion in lipid systems''; R. R. Vold, ''Information content of relaxation in spin multiplets''; S. Emid and R. A. Wind, ''Rotational polarization and tunneling''; A. Pines, ''Multiple quantum NMR in solids''; D. D. Osheroff, ''Non-local spin dynamics in superfluid ^{3}He.''

16 June. J. Jerome, ''NMR studies of one-dimensional organic conductors''; Y. Tomkiewicz, ''Magnetic properties of one-dimensional organic conductors''; G. Lampel, ''Detection of conduction electron spin resonance and NMR in semiconductors by optical pumping''; S. D. Rosner, ''Magnetic resonance in molecular beams using laser optical pumping.''

17 June. K. Möbius, ''Triple ENDOR determination of hyperfine and quadrupole coupling constants''; C. A. Hutchison, ''ENDOR and the structure of molecules in crystals''; J. S. Hyde, ''The spin-probe-spin-label method in ESR.''

Magnetism—Bubble Domains

Brewster Academy

Richard M. Josephs, chairman; Kenneth Lee, vice chairman.

1 August. Physics and materials (J. E. Geusic, discussion leader): J. C. Slonc-

1977 Schedule—New Hampshire and California

Proctor Academy Andover, N.H.	Holderness School Plymouth, N.H.	Brewster Academy Wolfeboro, N.H.	Plymouth State College Plymouth, N.H.	Miramar Hotel Santa Barbara
Free Radical Reactions	Hydrocarbon Chemistry	Magnetic Resonance	Polyamines	
Plant Cell and Tissue Culture	Modifers of Contractal Activation in Striated Muscle	Magnetic Reconnection in Space and Laboratory Plasmas	Solids, Chemistry and Physics of	Marine Natural Products
Energy Coupling Mechanisms	Physical Metallurgy	*Mode of Action of Opiates	Molecular Pharmacology	
Cell Contact and Adhesion	Biological Regulatory Mechanisms	Atomic Physics	Fuel Science	
Inorganic Geochemistry	Drug Metabolism	Molecular Energy Transfer	Gametogenesis	
Biomaterials, Science and Technology of	Mammalian Genital Tract Secretions	Quantum Solids and Fluids: Non-Equilibrium Phenomena in Superconductors and Superfluids	Quantitative Structure-Activity Relationships	
Organic Photochemistry	Fertilization and Activation of Development	Ion Exchange		
Developmental Biology	Aging, Biology of	Magnetism; Bubble Domain		
Coating and Films, Chemistry and Physics of	Liquids, Chemistry and Physics of	*Macromolecules and Behavior		
Molecular Pathology	Non-linear Optics	*Micellar and Macromolecular Catalysis		
	*Polymer Colloids	Polymer Combustion and Fire Retardance		

zewski, "Status of bubble physics"; J. W. Nielsen, "Recent advances in bubble domain materials." Multilayer garnets (D. C. Bullock, discussion leader): T. Kobayashi, "Multilayer structures for bubble devices."

2 August. Anisotropy and wall states (G. P. Vella-Coleiro, discussion leader): R. Wolfe, "Growth-induced orthorhombic anisotropy in (110) bubble garnet films"; T. J. Beaulieu, "Wall state switching in garnet films." Other magnetic systems (R. C. Barker, discussion leader): S. Kirkpatrick, "Spin glass behavior in concentrated alloys and amorphous films"; L. Berger, "Review of transport mechanisms in ferromagnets."

3 August. Dynamics (E. Schlömann, discussion leader): F. H. de Leeuw, "Wall and bubble dynamics in mono- and multi-layer garnet films"; F. B. Humphrey, "Translation, overshoot, and creep as seen with high speed photography." Contributed papers (A. P. Malozemoff, discussion leader).

4 August. Amorphous materials (R. Alben, discussion leader): G. S. Cargill III, "Magnetic and structural aspects of some amorphous systems"; N. Heiman, "Fundamentals and applications of rare earth-transition metal amorphous alloys." General interest (J. L. Archer, discussion leader): A. H. Bobeck, "The discovery of bubbles"; I. S. Jacobs "Magnetic properties of quasi-one-dimensional systems."

5 August. Devices (W. D. Doyle, discussion leader): P. I. Bonyhard, "Future directions in bubble device design"; R. A. Naden, "Computer testing of bubble devices—past, present and future."

Mammalian Genital Tract Secretions

Holderness School

William L. Williams, chairman; David W. Bullock, vice chairman.

18 July. Acrosomal enzymes and fertilization (W. L. Williams, chairman): Marion M. Bradford, "Sperm enzymes involved in penetration of the corona radiata and zona pellucida"; Kenneth L. Polakoski and Richard F. Parrish, "Factors influencing the conversion of ejaculated boar sperm proacrosin to acrosin"; Peter S. Tobias, "Human acrosin and proacrosin"; Laurens J. D. Zaneveld, "Physiological and contraceptive aspects of human acrosin"; Robert A. McRorie, "Conversion of proacrosin to acrosin by acrolysin, a proteinase in sperm acrosomes."

19 July. Prakash N. Srivastava, "A critical evaluation of extraction of enzymes from the mammalian sperm acrosome"; Mildred Gordon and Duane L. Garner, discussants. Pheromones and mammalian reproduction (chairman to be announced): David Goldfoot, "Olfactory cues and sexual behavior in stumptail macaques and rhesus monkeys"; Robert W. Bonsall, Richard P. Michael, and Doris Zumpe, "Chemistry of behaviorally active components of vaginal fluid"; Lee C. Drickamer, "Primer pheromones and sexual maturation in mice"; George Preti, "Small organic constituents of human vaginal secretions and relation to ovulation."

20 July. Human cervical mucus and sperm transport (Gebhard F. B. Schumacher, chairman): G. F. B. Schumacher, "Cyclic changes in soluble proteins in human cervical mucus"; Robert M. Nakamura, "Biophysical aspects of mid-cycle cervical mucus"; Donald R. Tredway, "Sperm transport in the human female reproductive tract." Mammalian gametes *In Vitro* (chairman to be announced): Thomas J. Kuehl and W. Richard Dukelow, "Effect of genital tract secretions on *In Vitro* fertilization in non-human primates"; Pierre Soupart, "Activation of mouse oocytes by cell fusion procedures."

21 July. Blastocyst-uterus interaction (David W. Bullock, chairman): R. Brian Heap, "Steroid hormone synthesis by the blastocyst"; D. B. Saxena, "Protein hormone secretion by the blastocyst"; P. Landis Keyes and Marilyn B. Renfree, discussants. Genetics and mammalian reproduction (Stanley R. Glasser, chairman): R. A. Pedersen, "Genetic effects on embryonic development"; George Sensabaugh, "Biochemical genetics of semen"; M. I. Sherman, discussant.

22 July. Immunology and secretions (A. C. Menge, chairman): C. R. Wira, "Regulation by sex hormones of immunoglobulins in uterine secretions"; P. L. Ogra, "Local immune response in the female genital tract"; M. H. Johnson and M. H. Beier, discussants.

Mammary Gland Biology

Colby-Sawyer College

Dorothy R. Pitelka, chairman; Dale E. Bauman, vice chairman.

13 June. Membrane and transport phenomena (Stuart Patton, discussion leader): T. W. Keenan, "Membranes of the mammary gland"; E. J. Blanchette-Mackie, "Role of membranes in lipid transport and milk secretion." Internal defense mechanisms in the mammary gland (F. H. S. Newbould, discussion leader): M. Paape, "Natural immunity: phagocytic and bactericidal properties of leukocytes"; A. K. Lascelles, "The immune systems of various species."

14 June. Hormonal control of mammary development and function (J. Meites, discussion leader): I. A. Forsyth, "Mammotrophic hormones and their receptors: studies in rodents and ruminants"; J. L. Wittliff, "Molecular aspects of interactions between steroid hormones and their binding proteins." Lymphocytes in milk (J. Pitt, discussion leader): J. Head, "The significance of milk cellular components to the suckling"; M. Parmely, "Immunologic responses by T lymphocytes in human colostrum."

15 June. Regulatory substances (R. L. Baldwin, discussion leader): T. Oka, "Polyamines and the development of mouse mammary gland"; J. A. Rillema, "Possible relationships of phospholipase A, prostaglandins, and cyclic nucleotides to the actions of prolactin." Breast cancer (R. Hilf, discussion leader): M. J. Brennan, "Lactation in breast cancer in clinical and laboratory medicine"; P. Gullino, "Angiogenic capacity as a marker of neoplastic transformation of human mammary epithelium."

16 June. Initiation of copious milk production at parturition (R. S. Emery, discussion leader): R. T. Chatterton, Jr., "Time-course studies on hormonal induction of lactogenesis"; M. Peaker, "Physiological changes at the onset of copious milk secretion"; R. Jenness, "A trail of research in milk biology."

17 June. Lactose biosynthesis (K. Ebner, discussion leader): K. Brew, "Structure, function, and regulation of lactose synthetase"; N. J. Kuhn, "The golgi location of lactose synthesis: its implications for cell metabolism and for lactose secretion."

Marine Natural Products

Miramar Hotel

Yuzuru Shimizu, chairman; Francis J. Schmitz, vice chairman.

20–24 June. The conference covers all aspects of marine natural products, that is, chemistry, biochemistry, biology, physiology, pharmacology, and ecology. In addition to major talks by speakers listed below, a limited number of short talks will be solicited at the conference. Carl Djerassi, "Subject to be announced"; George R. Pettit, "Marine animal antineoplastic compounds"; John Ogden, "Plant-herbivore relationship on Caribbean reef and seagrass beds"; Luigi Minale, "Recent results in the

chemistry of marine sponges''; Yoshiro Okami, ''Antibiotics from marine microorganisms''; James S. Kittredge, ''Biological observations in marine natural products chemistry''; Yoshimasa Hirata, ''Several compounds from *Palytoa tuberculosa*''; Joseph T. Baker and Ron Quinn, ''Subject to be announced''; Bert Shapiro, ''Action of marine toxins on nerve axons''; Paul J. Scheuer, ''Allelochemical agents from marine invertebrates''; D. John Faulkner, ''Subject to be announced.''

Medicinal Chemistry

Colby-Sawyer College

Kenneth E. Price, chairman; Joseph M. Schor, vice chairman.

1 August. Critical issues in the identification and evaluation of psychotherapeutic agents (Leonard Cook, chairman): Albert Weissman, ''Neuroleptics''; Melvin L. Gluckman, ''Antidepressants''; Jerry Sepinwall, ''Anxiolytics.'' Overall perspectives—panel discussion: Robert I. Taber, Zola P. Horovitz, Leonard Cook. Atherosclerosis (Franz Waldeck, chairman): Lawrence A. Harker, ''The process of atherosclerosis in man—new aspects for its prevention and therapy''; Theodore A. Spaet, ''Animal models to study progression and regression of atherosclerosis''; Valentine Fuster, ''The v. Willebrand pig as a special model in atherosclerosis research.''

2 August. Antiarrhythmic drugs (James Shroff, chairman): Peter Cervoni, ''Preclinical pharmacology of antiarrhythmic compounds''; Michael Rosen, ''Clinical electrophysiology of antiarrhythmic drugs''; William B. Wastila, ''Antidysrhythmic effects of bretylium and related compounds''; Robert Lee, ''Development of 2,3-*cis*-1,2,3,4-tetrahydro-5-[(2-hydroxy-3-*tert*. butylamino) propoxyl]-2,3-naphthalenediol (nadolol)-α, β-adrenergic antagonist.'' Diuretics in hypertension (Aram V. Chobanian, chairman): Aram V. Chobanian, ''Sodium, volume and hypertension''; Paul J. Cannon, ''Mechanism of action, long-term effects, and toxicity of diuretics in hypertension''; James C. Melby, ''Aldosterone antagonists and other adrenal inhibitors in the treatment of hypertension.''

3 August. Binding sites (Sydney Spector, chairman): Charles Brown, ''Use of NMR to detect binding sites''; Arthur Blume, ''Critical evaluation of binding studies''; Ian Creese, ''Opiate binding studies using brain synaptosomes''; Sydney Spector, ''Use of antibodies as a model for receptors.'' Topics in immunology and inflammation (Michael R. Schinitsky, chairman): Marshall Plaut, ''Effect of modulation of cyclic AMP on immune and inflammatory responses''; Alois Nowotny, ''Structure-activity relationships of immune enhancers''; Peter Ward, ''Interfaces between immunology, inflammation and disease.''

4 August. β-adrenergic blocking drugs (Alfred D. Miller, chairman): James D. Fitzgerald, ''The β-adrenoceptor and physiological control mechanisms''; Brian Turner, ''Structure-activity relationships among β-adrenergic blocking compounds''; Edward D. Freis, ''β-blockers in cardiovascular disease.'' (Irving J. Greenblatt, chairman): Julius Segal, ''Fact and fiction about sleep and dreams.''

5 August. Novel β-lactam antibiotics (Burton G. Christensen, chairman): Takashi Kamiya, ''Chemistry and biology of nocardicins''; Allan G. Brown, ''Clavulanic acid''; Burton G. Christiansen, ''Thienamycin.''

Micellar and Macromolecular Catalysis

Brewster Academy

Janos H. Fendler, chairman; Richard L. Reeves, vice chairman.

15 August. Micelles, macromolecules, energy transfer and energy conversion (N. J. Turro, Jr., discussion leader): J. K. Thomas, ''Radiation induced reactions in micellar systems''; Michael Gratzel, ''Fast light induced redox processes in micellar systems and their relation to energy conversion processes''; R. R. Hautala, ''The influence of micellar and macromolecular catalysis on some photochemical reactions.'' Micelles and prebiotic evolution (John Jungck, discussion leader): S. W. Fox, ''Experimental protobiogenesis''; Joseph Nagyvary, ''Novel prebiotic model systems.''

16 August. Micellar structure and catalysis I (Ernest Grunwald, discussion leader): Fred Menger, ''Probing the structure of micelles''; R. A. Moss, ''Micellar catalysis, accidental and deliberate''; C. A. Bunton, ''Kinetics of micelle catalyzed reactions in water.'' Micellar structure and catalysis II (Charmian O'Connor, discussion leader): John M. Brown, ''Selective catalysis in micelles and polymeric analogues''; Joseph Epstein, ''Micellar acceleration of organophosphate hydrolysis by pyridinium aldoxime type surfactants.''

17 August. Polyions and liquid crystals (Martin E. Newcomb, discussion leader): Norio Ise, ''Recent studies of the influence of polyelectrolytes on chemical reactions''; L. W. Reeves, ''Studies of micelles in the oriented liquid crystalline regime''. Cyclodextrins revisited (M. L. Bender, discussion leader): James Doherty, ''Substituted cyclodextrins as artificial enzymes''; Iwao Tabushi, ''Specific binding and catalysis of capped cyclodextrins and related hosts.''

18 August. Thermodynamic and kinetic aspects of micellar catalysis (E. M. Arnett, discussion leader): Pasupati Mukerjee, ''The nature of the electrostatic catalysis in micellar systems''; Hans-Friedrich Eicke, ''Micelle stability and its possible relation to micellar catalysis''; I. V. Berezin, ''Physical chemical foundations of micellar and polymeric catalysis.'' Contributed papers (R. L. Reeves, discussion leader).

19 August. Phase transfer catalysis (W. P. Weber, discussion leader): Robert A. Dubois and H. Freedman, ''Recent applications of phase transfer catalysis''; M. Makosza, ''Phase transfer and interfacial catalysis–application in synthesis and mechanism''; George W. Gokel, ''Crown ether mediated condensations.''

Microbiological Degradation

Tilton School

Arnold L. Demain, chairperson; Donald A. Klein, vice chairperson.

18 July. (Donald A. Klein, discussion leader): Richard W. Traxler, ''Determination of biodegradative potential of marine micro-organisms''; Joachim R. Lemke, ''New microbiological aspects of waste water treatment.'' (Douglas W. Ribbons, discussion leader): Stanley Dagley, ''Biochemical approach to environmental pollution.''

19 July. (Robert J. Heckley, discussion leader): Raymond Testa, ''Uses of microbial mutation''; Joyce McCann, ''Bacterial mutagenesis and carcinogenicity.'' (Wayne W. Umbreit, discussion leader): Barry Buckland, ''Bioconversions in organic solvents''; Bernard Abbott, ''Enzymatic approach to biotransformation and biodegradation.''

20 July. (Arthur M. Stern, discussion leader): Joseph J. Cooney, ''Fungal degradation of hydrocarbons''; James Shapiro, ''Genetics of alkane degradation.'' (Arthur M. Kaplan, discussion leader): Conference attendees, ''Current research problems.''

21 July. (Prakash S. Masurekar, discussion leader): Lenore S. Clesceri, ''Dynamics of microbial decomposition and nutrient regeneration in lakes''; Grace Lee Picciolo, ''Past and future applications of bioluminescence.'' (Antonio H. Romano, discussion leader): Da-

vid E. Hughes, "Myths, magic and microbiology."

22 July. (David T. Gibson, discussion leader): Corale Brierly, "Microbial extraction of metals from ores"; David T. Gibson, "Summary of the conference."

Mode of Action of Opiates

Brewster Academy

Sydney Archer, chairman; Eric J. Simon, vice chairman.

27 June. Endorphins I (L. Terenius, chairman): J. Hughes, D. G. Smyth, B. Cox. Metabolism of opiates (H. Kaneto, chairman): J. Fishman, D. Clouet, C. Inturrissi.

28 June. Endorphins II (H. W. Kosterlitz, chairman): S. Snyder, R. Guillemuin and N. Ling, C. Pert. Electrophysiology of opiates (A. Herz, chairman): H. Takagi, W. Zieglgansberger, A. North, P. B. Bradley.

29 June. Opiate receptors (E. J. Simon, chairman): M. Kuhar, J. Hiller, A. Takemori. Endorphins III (A. Goldstein, chairman): H. Loh, A. Pert, H. Akil.

30 June. Post-receptor reactions (H. Collier, chairman): W. Klee, H. Lal, B. Hamprecht. General session (S. Archer, chairman): V. Dole, and P. Janssen.

1 July. Tolerance and dependence (E. L. Way, chairman): W. Martin, E. Wei, J. M. VanRee.

Molecular Energy Transfer

Brewster Academy

George W. Flynn, chairman.

11 July. S. E. Harris, "Laser induced collisions"; T. A. George, "Theory of molecular rate processes in the presence of an intense laser radiation field"; S. R. Leone, "Detailed state investigations of electronic-to-vibrational energy transfer"; M. C. Lin, "Dynamics of electronic to vibrational energy transfer using laser absorption techniques."

12 July. E. P. Ippen and C. Shank, "New techniques in time resolved subpicosecond spectroscopy"; K. B. Eisenthal, "Picosecond studies of energy and charge transfer"; S. R. J. Brueck, R. M. Osgood, Jr., and T. F. Deutsch, "Vibrational energy transfer processes in simple cryogenic liquids."

13 July. L. E. Brus, "Energy transfer between diatomics in the solid phase"; F. LeGay, "Vibrational energy transfer in condensed media at low temperatures"; Poster session.

14 July. J. D. McDonald, "Energy transfer in unimolecular reactions"; R. D. Levine, "The information theory approach to state to state rate constants and the consequent population time evolution"; P. Thaddeus, "Molecular collisions in interstellar space."

15 July. K. Kompa, "Study of highly vibrationally excited molecules"; C. B. Moore, "Selective photochemistry versus energy transfer—a close competition."

Molecular Pathology

Proctor Academy

Peter A. Ward and Stanley Cohen, cochairmen.

Inflammation

15–19 August. Vascular alterations in inflammation: R. Cotran, "Endothelium"; (speaker to be announced), "Vasopermeability"; J. Folkman, "Angiogenesis." Granulocytes: P. Henson, "Neutrophils"; H. F. Dvorak, "Basophils"; G. Gleich, "Eosinophils." Mononuclear cells: M. Oldstone, "The lymphocyte in inflammatory reactions"; D. McGregor, "Macrophages in host defense"; E. Unanue, "Macrophage-derived mediators." Serum and cell-derived soluble factors: H. J. Muller-Eberhard, "Complement"; (speaker to be announced), "Kinins and other active peptides"; L. Lichtenstein, "Vasoactive amines." Lymphocyte-derived factors: S. Cohen, "Factors affecting inflammatory infiltrates"; Z. Lucas, "Cytotoxic mediators"; J. Oppenheim, "Proliferative factors." Infection-induced factors: (speaker to be announced), "Interferon"; T. Yoshida, "Cytokines"; C. Cochrane, "Endotoxins." Tissue injury: D. Scarpelli, "Injury at the cellular level"; G. Weissmann, "Lysosomal mechanisms"; S. Krane, "Factors affecting collagen." Factors limiting the inflammatory responses: P. A. Ward, "Chemotactic factor inhibitors"; R. Snyderman, "Cancer-associated dysfunction"; (speaker to be announced), "Protease inhibitors." Molecular pathology of inflammation: C. Parker, "Role of cyclic nucleotides"; E. L. Becker, "Contractile mechanisms in inflammatory cells"; T. Stossel, "Actin dysfunction"; J. Oliver, "Microtubule dysfunction."

Molecular Pharmacology

Plymouth State College

Howard C. Berg, chairman; Zach Hall, vice chairman.

27 June. Chemoreception in bacteria, cellular slime molds, and leukocytes (Howard C. Berg, chairman): David Ratner and Elmer Becker. Chemoreception in insects (Karl-Ernst Kaissling, chairman): Kai Hansen and Thomas V. Getchell.

28 June. Action of colicins E1, E2, E3 (Norton D. Zinder, chairman): Klaus Schaller, Karen Jakes, H. John Nijkamp. Action of cholera and diphtheria toxins (D. Michael Gill, chairman): Patrice Boquet and Leonard D. Kohn.

29 June. Steroid hormone reception (Keith R. Yamamoto, chairman): David O. Toft and Lawrence Wangh. Membrane energetics (H. Ronald Kaback, chairman): Peter C. Hinkle and Julia Lever.

30 June. Transport ATPases (Gene Scarborough, chairman): Jack Kyte, Anthony Martonosi. Discussion session moderated by the conference chairman.

1 July. Neurotransmitters (Zach Hall, chairman): Candace Pert and William Catterall.

Molten Salts and Metals

Tilton School

C. Austen Angell, chairman; Jerry Braunstein, vice chairman.

25 July. K. Todheide, "Recent high pressure studies on molten alkali halides"; B. R. Sundheim, "Dynamics of fused salts from NMR and computer simulation studies"; F. Lantelme, "Comprehensive approach to ionic motion on the basis of molecular dynamics. Application of the perturbation theory and of the memory function formalism". P. Chieux, "Neutron scattering studies of molten salts, including the metal-molten salt transition"; W. Hensel, "Ionic alloys: the Cs-Au binary and related systems"; N. Nachtrieb, "EPR studies of the Cs-CsCl metal → salt transition"; M. L. Saboungi, "Li-Pb: an ionic alloy."

26 July. W. Warren, "NMR studies of metal-molten salt mixtures"; D. Crozier, "Extended x-ray absorption fine structure (EXAFS) studies of local order in liquid metals and semiconductors"; J. Wong and F. W. Lytle, "An EXAFS study of molten, glassy and crystalline $ZnCl_2$ using synchrotron radiation"; J. D. Corbett, "Isolation of polymetal anions"; R. A. Osteryoung, "Acid-base dependent chemistry in aluminum halide molten salts"; M. D. Ingram and J. A. Duffy, "Optical basicities, and the prediction of melt chemical and physical properties"; D. M. Gruen and R. L. McBeth, "Spectroscopy of organic molecules in fused salt solutions"; B. Gilbert, "Lanthanide electrochemistry and related topics in chloroaluminate melts."

27 July. Poster session on current fundamental and applied developments.

Contributions will include material on molten salt energy storage systems and thermal battery systems, molten carbonate fuel cell electrolytes, synthetic chemistry in ionic solvents, organic electrolytes, glassy salts and glassy metals, solvent extractions involving melts computer simulation of ionic liquids and ionic molecular liquids. H. Oye, "Properties of, and reactions in, chloroaluminate melts"; G. P. Smith, M. L. Poutsma and A. S. Dworkin, "Ionisation of aromatic hydrocarbons in metal chloride melts"; L. King, "Practical electrochemistry of chloroaluminate melts: high energy density batteries"; G. Mamantov, "S(IV) cathode for molten chloroaluminate-batteries."

28 July. J. McTague, "Computer simulation study of the homogeneous nucleation phenomenon in supercooled liquid metals"; S. Nagel, "Electronic structure of metallic alloys and the origin of metallic glasses"; B. C. Giessen, "Preparation, characterization and compositional classification of amorphous solid metals"; D. S. Boudreaux, "Developing applications of glassy metals"; J. C. Thompson, "Concentration fluctuations and the metal-to-nonmetal transition in binary alloys"; G. Knape and L. Torell, "Brillouin scattering in molten salts, and related topics"; J. H. R. Clarke, "Light scattering studies in molten salts using photon-correlation techniques."

29 July. H. C. Hong and O. J. Kleppa, "Calorimetry on aluminum fluoride alkali fluoride solutions"; K. Matiosovsky, "Physical properties of AlF_3-based binary and ternary solutions"; J. Van Wechem, "Computer simulation and far IR studies of pure and mixed nitrates."

Muscle, Modifiers of Contractual Activation in Striated

Holderness School

Harry A. Fozzard, chairman; Martin F. Schneider, vice chairman.

Control of Muscle Contraction

20–24 June. T system and SR membrane events I (M. Schneider, chairman); T system and SR membrane events II (M. Endo, chairman); Sarcoplasmic reticulum (A. Katz, chairman); Activation-contraction coupling (R. Simmons, chairman); Phosphorylation of proteins and regulation (S. V. Perry, chairman); Na-Ca exchange (H. Reuter, chairman); Length effects on activation (S. Winegrad, chairman); Ion movements and contraction (H. Fozzard, chairman); Final summary (J. Blinks, chairman).

Natural Products

New Hampton School

Samuel Danishefsky, chairman; John E. McMurry, vice chairman.

25 July. A. S. Kende, "Progress in the synthesis of antitumor antibiotics"; R. Abeles, "Suicide enzyme inactivators"; A. R. Battersby, "Biosynthetic studies on porphyrins, and corrins"; Gary Koppel, "A chirally specific synthesis of β-lactam antibiotic."

26 July. R. V. Stevens, "Studies on the synthesis of natural products"; Paul Dowd, "The mechanism of action of vitamin B_{12}"; B. M. Trost, "Selectivity in design of total synthesis of natural products"; C. R. Hutchinson, "Biosynthetic studies of alkaloids and antibiotics."

27 July. Toshio Goto, "Chemistry of the silkworm diapause hormone"; H. G. Floss, "Biosynthetic studies of an antibiotic"; Robert Ireland, "Ionophores: synthetic strategy and preliminary results"; C. Dale Poulter, "Mechanism of action of porcine prenyltranserase."

28 July. J. Clardy, (subject to be announced); Richard Schlessinger, "Studies in the synthesis of naturally occurring lactones"; George Buchi, "A topic in organic synthesis"; Martin Kuehne, "Biomimetic reactions in the synthesis of alkaloids."

One contributed short talk at the end of each of the Monday–Thursday morning sessions will be allowed. Friday morning offers a chance for several more contributed short talks, however, only a very circumscribed number will be possible.

Nonlinear Optics and Lasers

Holderness School

J. E. Bjorkholm, chairman; J. Jerphagnon, H. Mahr, and J. J. Wynne, co-vice chairmen.

15–19 August. Sessions will be held on: nonlinear spectroscopy; short pulses and related phenomena; UV and IR generation; applications in other fields; laser chemistry and laser isotope separation; coherent effects; new effects, techniques, and lasers; CARS (coherent anti-Stokes Raman spectroscopy). A partial listing of speakers and session chairmen follows: M. J. Berry; N. Bloembergen; R. G. Brewer; H. M. Gibbs; D. R. Grischkowsky; T. W. Hänsch; M. H. R. Hutchinson; Y. T. Lee; M. D. Levenson; C. V. Shank; S. L. Shapiro; J.-P. E. Taran; R. H. Stolen; J. T. Yardley.

In addition, there will be a session for short reports on recent results; these talks will be contributed papers of high interest. In order to have work considered for this session, submit four copies of an abstract and short summary to one of the organizers on or before 15 August; it will not be possible to accept all submitted papers for presentation.

Nuclear Chemistry

Colby-Sawyer College

Frank Stephens, chairman; Franz Plasil, vice chairman.

This conference will emphasize nuclear structure and will cover high-spin states, properties of compound nuclei, correlations in nuclei, transitional nuclei, nuclear shapes, giant resonances, and some aspects of nuclear reactions.

20 June. (A. Faessler, discussion leader): S. G. Nilsson, "Nuclei with really high spin"; D. Schwalm, "High spin states in heavy nuclei." (G. Goldring, discussion leader): Bent Herskind, "Decay studies of heavy-ion induced evaporation residues"; John Schiffer, "Fusion cross sections from heavy-ion reactions."

21 June. (S. Bjørnholm, discussion leader): Ricardo Broglia, "Different aspects of elementary excitations in nuclei"; Edward R. Flynn, "The interaction of the pairing mode of elementary excitations." (J. Meyer-ter-Vehn, discussion leader): Georg Leander, "The present status of Bohr's collective Hamiltonian in the description of transitional nuclei."

22 June. (John Rasmussen, discussion leader): Gaja Alaga, "New and old models for vibrational nuclei"; Igal Talmi, "Nucleon pairing and interacting bosons." (Paul Kienle, discussion leader): Stanley B. Kowalski, "Electron scattering studies of nuclear deformations"; Hans J. Specht, "Fission isomers—the present status."

23 June. (Peter Axel, discussion leader): Stanley S. Hanna, "Giant multipole resonances"; Aage Winter, "Excitation of giant resonances in heavy-ion collisions." (Franz Plasil, discussion leader): David Schramm, "Will the Universe expand forever—a problem in applied nuclear physics."

24 June. (Walter Greiner, discussion leader): Reinhard Stock, "Experimental approach to nuclear matter at high densities."

Nuclear Structure Physics

Tilton School

Bryan H. Wildenthal, chairman; Gerard J. Stephenson, Jr., vice chairman.

11–15 July. J. P. Egger, "Pion scattering at intermediate energies"; R. Eisen-

stein, "Experimental results in low-energy elastic pion scattering"; P. Debevec, "Pion production at threshold"; G. E. Brown, "Implications of new results from low-energy pion elastic scattering experiments"; J. E. Spencer, "Experimental results with the (π^+, π^-) reaction"; F. Iachello, "The interacting Boson model: extension to deformed systems and microscopic foundations"; P. W. M. Glaudemans, "Multi-orbit shell-models for medium-mass nuclei"; B. A. Brown, "Applications of the $f^n_{7/2}$ shell-model"; B. R. Holstein, "Current status of search for second-class currents"; B. Porh, "Nuclear structure studies with the (K^-, π^-) reaction"; H. T. Fortune, "Triton-induced transfer reactions"; E. Grosse, "Spectroscopy of heavy deformed nuclei via gamma rays induced with heavy-ion reactions"; G. J. Wagner, "Evolution of studies of the E2 giant resonance"; G. T. Garvey, "Giant resonances in less conventional modes of excitation"; J. Gosset, "Interactions of heavy ions at relativistic energies"; H. A. Bethe, "Energy."

Nucleic Acids

New Hampton School

U. L. RajBhandary and James C. Wang, co-chairmen; Joan A. Steitz and Norman Davidson, co-vice chairmen.

13–17 June. Chemical and enzymatic synthesis of oligo- and polynucleotides (M. Smith, chairman); Transfer RNA structure and function (P. R. Schimmel, chairman); Cloning of eukaryotic DNA (J. Carbon, chairman); Nucleic acid sequencing methods (W. Gilbert, chairman); DNA dependent ATPases (S. Linn, chairman); Protein-nucleic acid interactions (T. Jovin, chairman); Chemical modification of polynucleotides as an approach to structure-function relationship studies of nucleic acids (D. Söll, chairman); Structure of chromatin (G. Felsenfeld, chairman); Interaction between drugs, mutagens, carcinogens and nucleic acids.

Organic Photochemistry

Proctor Academy

Donald R. Arnold, chairman; E. A. Chandross, vice chairman.

25–29 July. Jerome A. Berson, "Properties and reactions of some trimethylene-methane biradicals"; Jordan J. Bloomfield, "Fragrances by photocycloaddition reactions (from the lab to the pilot plant)"; Alain Devaquet, "Potential energy surfaces: photochemical behavior of carbonyl, azo and three-membered heterocyclic chromophores"; Samir Y. Farid, "Exciplexes and electron transfer reactions"; Egbertus Havinga, "Photoreactions of dienes and trienes"; Jacques Joussot-Dubien, "Photophysical and chemical properties of twisted forms of medium sized cycloalkenes as deduced from conventional and laser flash photolysis"; Tad H. Koch, "Some photochemical reactions of the carbon-nitrogen double bond"; Angelo A. Lamola, "Photobiology of tetrapyrrols"; Kurt Schaffner, "New results on the oxadi-π-methane rearrangement—an almost 'classical' topic on organic chemistry"; Arthur G. Schultz, "Photochemistry applied to natural product total synthesis"; J. Kerry Thomas, "Radiation induced reaction in micellar systems"; Mark S. Wrighton, "Photoprocesses in low valent organometallic complexes."

Organic Reactions and Processes

New Hampton School

Paul Nicholas, chairman; Walter Trahanovsky, vice chairman.

18 July. John Groves, "Iron oxo and iron peroxo intermediates in oxidative catalysis"; Norman Deno, "Selective hydroxylation of organic compounds"; Roy Johnson, "The reactions of superoxide with alkyl halides and alkyl sulfonate esters"; Christopher Foote, "New developments in oxygen chemistry."

19 July. Charles Liotta and Edward Burgess, "Stereochemistry of orbital controlled organic reactions—principle of orbital distortion"; Pierre Deslongchamps, "Stereoelectronic control in hydrolytic reactions"; Barry Trost, "New approaches to selectivity in organic synthesis"; Balwant Singh, "Asymmetric hydrogenations."

20 July. Leo Paquette, "Quest for pentagonal dodecahedrane"; Contributed short papers by conferees. Clifford Bunton, "Micellar catalysis and inhibition"; Robert Moss, "Micelles: agents of stereochemical and kinetic control in organic and bioorganic reactions."

21 July. Ph. Teyssie, "Catalytic control of carbene and dipole reactions by transition metal catalysts"; Tadatoshi Aratani, "Asymmetric synthesis with chiral copper carbenoids"; Glenn Brown, "Liquid crystals in the inanimate world and in life processes."

22 July. Paul Gassman, "Transition metal complex—promoted rearrangement of organic compounds. New concepts of olefin metathesis." Contributed short papers by conferees.

Physical Metallurgy

Holderness School

U. F. Kocks, chairman; R. W. Balluffi, vice chairman.

Mechanisms of High-Temperature Deformation and Recovery

27 June. U. F. Kocks, E. W. Hart, "How many mechanisms?" H. Mecking, T. H. Alden, "Work hardening and recovery transients"; T. Hasegawa, J. Cadek, "Dislocation structure development during creep stages"; J. L. Martin, R. Lagneborg, "Subboundary dislocation interactions (HVEM)."

28 June. W. D. Nix, H. Yoshinga, "When are backstresses meaningful?" A. P. L. Turner, M. Meshii, "Reloading and reverse loading: transients and instabilities"; J. P. Poirier, M. F. Ashby, "Is power-law creep diffusion-controlled?" F. A. Nichols, J. K. Tien, "What role vacancies and interstitials?"

29 June. R. Sandström, D. H. Warrington, "Subgrain-structure development at large strains"; A. S. Argon, D. Kuhlmann-Wilsdorf, "What should go into a recovery theory?" H. Oikawa, T. G. Langdon, "Viscous glide creep: how and when?" N. Paton, P. J. Wray, "Effects of dynamic precipitation on dislocation creep."

30 June. B. Reppich, B. Wilshire, "Solution hardening and particle hardening"; R. M. Cannon, R. C. Pond, "Diffusional flow and associated grain boundary effects"; A. J. Ardell, J. D. Embury, "Creep and dislocation microstructures in the earth."

1 July. G. Gottstein, H. P. Stüwe, "Dynamic recrystallization: unstable structures and unstable flow"; J. J. Jonas, J. W. Edington, "Strain localization: fast or slow?"

Plant Cell and Tissue Culture

Proctor Academy

Louis G. Nickell, chairman; Peter S. Carlson, vice chairman.

20 June. Biological nitrogen fixation: legume symbiosis and other types of fixation (Ralph W. F. Hardy, discussion leader): R. C. Valentine, J. LaRue, F. Ausubel, J. Tjepkema, and W. R. Scowcroft.

21 June. The Ti plasmid of *Agrobacterium* and its potential use for genetic engineering (Jeffrey Schell, discussion leader): A. C. Braun, M. D. Chilton, J. Tempe, M. van Montagu, and R. Schilperoort.

22 June. Available variability and its exploitation (Donald K. Dougall, dis-

cussion leader): F. Meins, J. R. S. Fincham, H. Zenk, H. H. Smith, and P. Day.

23 June. Molecular biology of higher plants (Virginia E. Wolbot, discussion leader): B. Burr, F. Burr, D. Steffenson, R. Meagher, A. Millerd, E. Coe, and M. Neuffer.

24 June. Conference summary—technology assessment of conference topics, (Peter S. Carlson, discussion leader).

Point and Line Defects in Semiconductors: Identity and Properties

Kimball Union Academy

Ramesh N. Bhargava, Carl D. Thurmond, co-chairmen.

11 July. Defect characterization in semiconductors (Hans J. Queisser, discussion leader): A. J. R. DeKock, "Microdefect formation in dislocation free Czochralski grown crystals"; John W. Matthews, "Misfit dislocations in semiconductors"; Greg Olsen, "Crystal growth induced defects in semiconductor devices." Non-radiative recombination (Gertrude Neumark, discussion leader): Charles H. Henry, "Non-radiative recombination by multiphonon emission: theory and experiments"; Manfred H. Pilkuhn, "Auger recombination"; Adrian T. Vink, "Non-radiative recombination at surfaces, dislocations and defects; experiments on GaP.

12 July. Study of deep levels (Hermann Grimmeiss, discussion leader): David V. Lang, "Study of deep levels by capacitance spectroscopy"; George D. Watkins, "Vacancies and interstitials in semiconductors." Device performance (Nick Holonyak, discussion leader): Jim Patel, "Oxygen in Si"; Jerry M. Woodall, "GaAs solar cells"; David L. Keune, "GaAsP-*LEDS*."

13 July. Theoretical description of deep states in semiconductors (L. Hedin, discussion leader): Sokrates Pantelides, "Deep impurity levels: How far can we stretch effective mass theory"; Milan Joros, "Calculations of electronic transitions involving deep levels in semiconductors." Microscopic studies of defects related to device performance (Pierre Petroff, discussion leader): P. W. Hutchinson, "TEM observation of defects in degraded GaAs lasers/LED"; P. Haasen, "Charged dislocations and their mobility in doped semiconductors."

14 July. Control of defects during crystal growth (Morton B. Panish, discussion leader): Michael Ettenberg, "Stoichiometric effects in GaAs"; Jim Van Vechten, "Surface reconstruction in crystal growth."

15 July. State of optoelectronic technology (Robert N. Hall, discussion leader): Izuo Hayashi, "State of degradation study in laser and light emitting diodes in Japan"; Paul J. Dean, "Localized recombination in semiconductors and consequences for optoelectronic device technology"; Henry Kressel, "Limitations in laser and solar cell technology."

Polyamines

Plymouth State College

Werner K. Maas, chairman; Uriel Bachrach, vice chairman.

13 June. Involvement of polyamines in the packaging and replication of DNA (W. K. Maas, chairman): J. Griffith, L. Gosule, V. Bode, M. Sylvanen, D. Pettijohn, C. Drlica, L. Geiger, D. Morris. Genetics of polyamine synthesis (S. S. Cohen, chairman): C. W. Tabor, H. Tabor, E. W. Hafner, M. Cohn, A. Demetriou, P. Whitney, D. Morris, T. Eckhardt, W. K. Maas.

14 June. Polyamines and protein synthesis (T. Oka and Y. Takeda, co-chairman): J. Lewis, B. Hardesty, I. D. Algranati, J. G. Flaks. Induction of ornithine decarboxylase (D. H. Russell and J. Janne, co-chairmen): Z. Canellakis, E. Gerner, J. A. Gurr, A. Kaye, and D. Paul.

15 June. Hormonal control and regulatory processes (E. J. Herbst and H. G. Williams-Ashman, co-chairmen): E. S. Canellakis and J. L. Clark. Polyamine metabolism (N. Seiler and A. Raina, co-chairmen): S. S. Cohen, L. T. Kremzner, J. Blankenship, C. M. Caldarera, T. A. Smith.

16 June. Antimetabolites (D. R. Morris and P. Mamont, co-chairmen): J. Janne, C. Dave, A. E. Pegg, M. Abdel-Monem. Pathology (O. M. Rennert, chairman): R. Campbell, W. J. Byrd, N. Livingston, D. Lockwood, P. Libby, D. Maudsley, M. W. Pariza.

17 June. Cancer (L. J. Marton and U. Bachrach, co-chairmen): R. K. Boutwell, U. Lichti, O. Heby, F. Bartos, D. Bartos, B. Durie, R. Chayen.

Polymer Colloids

Holderness School

Irvin M. Krieger, chairman; Gary Poehlein, vice chairman.

22–26 August. George L. Brown, "Particle size characteristics of polymer colloids prepared from water-dispersible systems"; John Davidson, "Microscopy of polymer latices"; Robert M. Fitch, "Chemical reactions at the interface in polymer colloids"; John L. Gardon, "Emulsion polymerization theory: status and issues"; Andrew Klein, "Colloidal aspects of emulsion polymerization of vinyl acetate"; S. G. Mason, T. G. M. van de Ven, E. B. Vadas, and K. Takamura, "Microrheology of colloidal dispersions"; A. J. McHugh, "Measurement of polymer colloid size characteristics by liquid chromatography"; R. H. Ottewill, "Growth of latex particles"; Alan Rembaum, "Functional microspheres for immunoresearch"; John W. Vanderhoff, "Characterization of latex particle surfaces"; Michael C. Wilkinson, "Anomalous particles formed during the surfactant-free emulsion polymerization of styrene"; V. I. Yeliseyeva, "Role of the interface in kinetics of emulsion polymerization and morphology of emulsion polymers."

Polymer Combustion and Fire Retardance

Brewster Academy

Giuliana C. Tesoro and John W. Lyons, co-chairpersons.

22 August. Physics of fire (R. S. Levine, session chairperson): H. W. Emmons, "Review"; P. Jason Pagni, "Excess pyrolyzate." Smoldering combustion (E. Pearce, session chairperson): T. Y. Toong, "Mechanisms of smoldering combustion"; (Speaker and subject to be announced).

23 August. Chemistry of fire (J. W. Hastie, session chairperson): C. M. Huggett, "Chemical mechanisms of polymer combustion"; R. M. Fristrom, "Chemistry of inhibition and retardation in polymer combustion." Test methods (R. Magee, session chairperson): C. E. Hathaway, "Assessing fire risks"; R. S. Friedman, "Recent developments in testing."

24 August. Toxicity of combustion products (C. F. Reinhardt, session chairperson): I. Einhorn, "Methodology for evaluating effects"; J. M. Jouany, "The use of physiograms in assessing toxicity." Smoke (J. D. Seader, session chairperson): B. Zinn, "Physics and chemistry of smoke"; G. W. Mulholland, "Physical properties of smoke aerosols."

25 August. Behavior of polymers (J. Butler, session chairperson): V. Mark and J. L. Webb, "New, effective fire retardance additives for selected organic polymers"; B. Miller, "Rapid pyrolysis of polyesters"; W. E. Fitzgerald, "Tests with a room-sized calorimeter." Behavior of polymers (J. K. Backus, session chairperson): M. M. Besso and C. Kra-

mer, "Poly (resorcinol phthalate), a highly fire resistant char-forming polymer"; R. L. Dieck and E. J. Quinn, "Flame and smoke properties of the polyphosphazenes."

26 August. Summing up and a look ahead (J. W. Lyons, session chairperson): J. deRis, P. H. Thomas.

Polymers

Colby-Sawyer College

Robert W. Lenz, chairman; Edward J. Vandenberg, vice chairman.

11 July. (H. J. Harwood, presiding): G. B. Butler, "Triazolinedione-modified diene polymers"; N. Ogata, "New synthetic routes to functional condensation polymers." (E. B. Mano, presiding): W. J. MacKnight, "Structures and properties of ionomers." (E. J. Vandenberg, presiding): contributed paper symposium.

12 July. (J. Kops, presiding): N. Spassky, "Stereochemistry of ring-opening polymerization by optically-active catalysts"; D. Fles, "Spontaneous copolymerization of charge transfer complexes." (V. P. Zubov, presiding): J. F. Jansson, "Stabilization of radicals formed by mechanical fracture." (Z. J. Jedlinski, presiding): G. Wegner, "Extended chain crystals of homopolymers and copolymers-synthesis, mechanisms and properties."

13 July. (H. Sekiguchi, presiding): J. Sebenda, "Recent progress in the polymerization of lactams"; R. M. Hedrick, "Multiple block copolymers of caprolactam by anionic polymerization"; (B. Wesslen, presiding): J. C. Brosse, "Hydroxyl group-terminated vinyl polymers by radical polymerization." (S. W. Shalaby, presiding): D. Topchiev, "Radical polymerization of water soluble monomers."

14 July. (J. C. W. Chien, presiding): P. J. T. Tait, "Active site determination in Ziegler-Natta systems"; P. Corradini, "Structure of the active site in Ziegler-Natta catalysts." (B. H. Johnson, presiding): J. Lal, "Unsaturated polymers of higher α-olefins and nonconjugated dienes." (A. B. Conciatori, presiding): R. H. Marchessault, "Natural polysaccharides: industrial developments and bio-physical significance."

15 July. (J. Bartulin, presiding): F. Ciardelli, "Catalysis by polymer-based transition metal complexes"; C. U. Pittman, "Polymer anchored homogeneous catalysts." (M. Jacovic, presiding): V. D. McGinniss, "Structure-property relationships in photocurable polymers."

Proteins

New Hampton School

William Konigsberg and David Davies, co-chairmen.

20 June. Protein-nucleic acid interactions (Peter Von Hippel, chairman): M. Gellert, "DNA-gyrase"; H. Hoffmann-Berling, "Proteins that unwind helical DNA"; D. Draper, "Interactions of *E. coli* ribosomal protein S1 with nucleic acids." Protein maturation: short lived sequence extensions of proteins with topological function (Gunther Blobel, chairman): P. Model, "Precursor to the major coat protein of bacteriophage Fl"; N. Chua, "Precursor for a chloroplast protein synthesized in the cytoplasm"; J. Beckwith and H. Inouye, "Precursors for alkaline phosphatase from *E. coli*."

21 June. Membrane proteins (Guido Guidotti, chairman): K. Drickemeyr, "Structures of 90K dalton transmembrane polypeptide in erythrocyte membranes"; R. Webster, "Interaction of the fd coat protein with natural and artificial membranes"; P. Boquet, "Hydrophobic regions of diphtheria toxin in the process of membrane transversal"; E. Elson and J. Schlessinger, "Mobility of proteins in membranes"; P. Henkart, "Lateral diffusion and capping of model membrane macromolecules"; J. Rothman, "Membrane protein assembly and assymetry." Microfilaments and microtubules (Klaus Weber, chairman): S. Timesheff, "Self associations of brain tubulin to microtubules and other structures"; J. Spudich, "Actin and myosin: molecules in motion."

22 June. Protein crystal structure I (Paul Sigler, chairman): R. Fletterick, "Phosphorylase"; M. James, "Evolution of serine proteases"; A. Fersht, "Amino acyl-tRNA synthetases." Protein crystal structure II (Brian Matthews, chairman): Brian Matthews, "Bacterial chlorophyll containing proteins"; S. Harrison, "Structure of tomato bushy stunt virus"; J. Kraut, "Dihydrofolate reductase."

23 June. Protein folding (Robert Baldwin, chairman): T. Creighton, "Pathway of disulfide bond formation and mechanism of folding of BPT"; J. Richardson, "Patterns of folding of globular proteins"; F. Richards, "The packing problem in relation to mechanism of folding of ribonuclease A"; R. Baldwin, "Noncovalent kinetic intermediates and the mechanism of folding of ribonuclease A." (Christian Anfinsen, chairman): W. Harrington, "Contractile proteins."

24 June. NMR studies of proteins (Joseph E. Coleman, chairman): Joseph Coleman, "NMR studies on gene 5 protein-DNA interactions"; B. Sykes, "NMR studies of tropomyosin"; Mildred Cohn, B. Rao, "^{31}P-NMR of enzyme-bound ligands"; Chen Ho, "Super 19S NMR studies on proteins." There will be a poster session for contributed papers. Please contact the Gordon Conference co-chairmen.

Quantitative Structure-Activity Relationships in Biology

Plymouth State College

Yvonne C. Martin, chairman; John G. Topliss, vice chairman.

18 July. Strategy in the design of a series (Paul Craig, discussion leader); P. J. Goodford, "The optimization of 'drug-receptor' fit"; K. R. H. Woolridge, "The use of a rational substitution set in practice"; James Hansen, "Selecting compounds for synthesis"; Stefan Unger, "Rational design of analogs." Predictability of partition coefficients (William Dunn III, discussion leader): S. S. Davis and N. Anderson, "Energetics of solute transport"; Albert Leo, "Partition coefficient calculation—where is it most likely to fail?"; Toshio Fujita, "Hydrogen bonding parameter in QSAR."

19 July. Substituent constants (Richard Cramer, discussion leader): Arie Verloop, "Parameterization of steric effects"; Marvin Charton, "Separation of electrical effects"; Robert Taft, "Composition of sigma constants." Poster session, (Brock Neely, organizer): contributions by participants.

20 July. Studies on *in vitro* systems (Corwin Hansch, discussion leader): C. Silipo, A. Vittoria, and C. Grieco, "QSAR applied to chymotrypsin"; J. K. Seydel, "QSAR of folate synthesis inhibitors in a cell-free system"; Tom Bruice, "A mechanism of oxygen activation and oxidation and reduction of organic substrates by flavin." New views of QSAR (William Purcell, discussion leader): H. Kubinyl and O. H. Kehrhahn "Comparison and combination of Hansch and Free-Wilson analysis"; Lemont Kier, "Molecular connectivity"; E. J. Ariens, "A modified view of receptors."

21 July. Multivariate mathematical methods applied to QSAR (Eugene Coats, discussion leader): R. Franke, (subject to be announced); Kurt Enslein, Dev Khanna, and Paul N. Craig, "A toxicity prediction system"; Ferenc Darvas, Ivan Futo, and Peter Szeredi, "Combination of theorem-prover based machine intelligence and QSAR methods." Recent advances in QSAR (John

Topliss, discussion leader): J. Dearden, "Computer simulation of the drug transport process"; contributed papers.

22 July. Beyond linear free-energy relations (Peter Jurs, discussion leader): R. H. Davies, B. Sheard, and P. J. Taylor, "Conformation, calculation, and the 'pathetic fallacy' "; A. J. Hopfinger and R. D. Cramer, "Application of theoretical conformational analysis to QSAR"; Arthur Cammarata, "A superstructure approach to pattern recognition."

Quantum Solids and Fluids: Non-Equilibrium Phenomena in Superconductors and Superfluids

Brewster Academy

Vinay Ambegaokar, chairman; Donald N. Langenberg, vice chairman.

18–22 July. The purpose of this conference is to bring together theorists and experimentalists interested in discussing, and exploring the parallels between, the kinetics underlying various manifestiations of superfluidity, particularly superconductivity and the low temperature phases of liquid ^{3}He. A partial and preliminary list of speakers follows: J. Bardeen, "Theory of flux flow in superconductors"; J. Clarke, "Microwave radiation induced non-equilibrium states in superconductors"; M. Cross, "Orbital relaxation in superfluid liquid ^{3}He"; M. Goldman, "Collective modes in superconductors"; I. O. Kulik, "Self-consistent kinetics in superconductors"; A. J. Leggett, "Orbital and spin dynamics in superfluid liquid ^{3}He"; M. Liu, "Hydrodynamics of He-A near the phase transition"; N. D. Mermin, "Singularities and superflow in superfluid liquid ^{3}He-A"; V. Narayanamurti, "Quasi-particle propagation, relaxation and recombination in superconductors"; D. J. Scalapino, "Hot superconductors"; A. Schmid, "Theory of time dependent effects in superconductivity"; K. Schwarz, "Turbulence in superfluid ^{4}He"; J. Wheatley, "Orbital anisotropy effects in superfluid ^{3}He." In addition, talks on neutron star dynamics, ^{3}He-^{4}He mixtures, and flux penetration in superconductors are planned.

Separation and Purification

Colby-Sawyer College

Harris J. Bixler, chairman; Edwin N. Lightfoot, Jr., vice chairman.

15 August. Pushing the limits of solid-fluid separations (Paul L. Carey, session chairman): Adrian R. Reti, "Absolute filtration: meaning and measurement"; John R. Vose, "Separating grain proteins by air classification"; Peter Kos, "Recent advances in sedimentation and thickening."

16 August. Separations induced by electric fields (K. Samuel Spiegler, session chairman): Herbert A. Pohl, "Separating particles by nonuniform electric fields"; J. C. Robin Turner, "Electrodialysis: polarization and water splitting"; Paul L. Feldman, "Modelling the performance of electrostatic precipitators."

17 August. Biological separations (Lita L. Nelsen, session chairman): Lita L. Nelsen, "Pyrogens and their removal from water by filtration"; Ralph W. F. Hardy, "Biological nitrogen fixation: an alternative to physical separations"; Fred R. Rothstein, "Improvements in large scale fractionation of plasma proteins."

18 August. Separation technology in the chemical industry (Donald B. Broughton, session chairman): Aage Freedenslund, "Prediction of separation factors using group-contribution"; Robert J. Anderson, "The removal of vinyl chloride monomer in PVC manufacturing"; George E. Keller, "Effect of rising energy costs on selection of separation processes."

19 August. Separations research in response to dwindling oil reserves (Stig Friberg, session chairman): Dinesh O. Shah, "Microstructure of surfactant solutions used in enchanced oil recovery"; Joseph D. Henry, Jr., "Removal of mineral matter from liquefied coal by extraction to an aqueous phase."

There would also be selected short (10 minute) presentations by conference participants. Conferees are invited to submit contributions (by title and 25-word abstract) to the chairman before or upon arrival for selection on 15 August.

Solids, Chemistry and Physics of

Plymouth State College

Charles B. Duke and Dwaine Cowan, co-chairmen.

Molecular Solids

20 June. Electrons and phonons (A. S. Davydov, chairman): W. R. Salaneck, "Electronic structure of Van der Waals solids"; C. Pecile, "Intramolecular vibrations of aromatic molecules (C_6H_6, $C_{10}H_{10}$, TTF, TCNQ); G. Dolling, "Intermolecular vibrations in molecular crystals." Electron-phonon interactions (A. C. Albrecht, chairman): C. B. Duke, "Linear coupling to intramolecular modes: from molecular spectroscopy to Peierls instabilities"; E. I. Rashba, "Quadratic coupling to intramolecular modes: vibron spectra of molecular crystals"; Y. Toyazawa, "Dynamical localization of excitons in molecular crystals."

21 June. Single-particle (electronic) charge transport (T. D. Holstein, chairman): David Emin, "Itinerant versus small polaron hopping motion in solids"; N. Karl, "Drift mobility and charge transport in organic semiconductors"; M. H. Cohen, "Influence of static and dynamic disorder on transport in quasi-one-dimensional solids." Particle-hole (excitonic) energy transport (M. A. El Sayed, chairman): Robert Silbey, "Coherent versus diffusive exciton transport in molecular crystals"; C. B. Harris, "Coherent exciton migration in solids: the determination of the coherence length and times at low temperatures"; R. S. Knox, "Distinction between spin and orbital coherence of excitons."

22 June. Synthesis and structure of organic metals (D. Cowan, chairman): R. Schumaker, "Novel materials I: 1, 3, 4, 6-tetrathiapentalene derivatives: synthesis and conductivity"; F. Wudl, "Novel materials II"; T. J. Kistenmacher, "Structure of quasi-one-dimensional organic charge-transfer salts." Stability, structure and phase transitions of quasi-one-dimensional organic conductors (D. J. Scalapino, chairman): B. A. Scott, "Structure and stability relationships in single-stack organic metals: the TTF-halide systems"; V. J. Emery, "Theory of structural phase transformations in double-stack organic conductors: TTF-TCNQ"; Y. Tomkiewicz, "Intrastack disorder and its consequences: $(TSeF)_x(TTF)_{1-x}TCNQ$."

23 June. Electrons, phonons and their transport in quasi-one-dimensional organic conductors (E. Perez-Albuerne, chairman): M. J. Rice, "Pervasive influence of intramolecular electron-phonon interactions on the properties of organic linear-chain conductors: Peierls instabilities, anomalous IR activity, and transport"; P. M. Grant, "Electronic structure of quasi-one-dimensional or-

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ganic charge transfer salts: models suggested by optical, photoemission, and energy-loss experiments"; A. N. Bloch, "Charge transport in quasi-one-dimensional organic charge transfer salts: survey of measurements and their interpretation." Magnetic properties of quasi-one-dimensional organic conductors (A. F. Garito, chairman): W. M. Walsh, Jr., "The spin paramagnetism of organic conductors"; J. W. Bray, "Spin-Peierls transitions and other magnetic properties of bisdithiolene complexes"; Campbell Scott, "Influence of disorder on magnetic properties: variable exchange in antiferromagnetic systems."

24 June. Collective transport phenomena in quasi-one-dimensional organic conductors? (J. Bardeen, chairman): T. M. Rice, "Mechanisms of collective and single-particle transport in quasi-one-dimensional systems: a critical survey"; A. J. Heeger, "Transport in one-dimensional conductors"; J. A. Krumhansl, "Charged solitons: fact or fancy?"

Statistics in Chemistry and Chemical Engineering

New Hampton School

Louis J. Painter, chairman; Ronald D. Snee, vice chairman.

11 July. John Mandel, "Structural and random components in data analysis"; (William M. Wooding, moderator). Wayne B. Nelson and Josef Schmee, "Statistical methods for censored (log) normal life data"; (Thomas J. Boardman, moderator).

12 July. John F. MacGregor, "Self-tuning and adaptive stochastic controllers: theory and process applications"; (William J. Hill, moderator). William H. Lawton and Edward A. Sylvestre, "Precision estimation from multiple analytical methods in the absence of a standard"; (Grant Wernimont, moderator).

13 July. David W. Gaylor, "Risk estimation from toxicity studies in animals"; (Spencer M. Free, Jr., moderator). Lars Pallesen, "Monitoring and modeling of environmental quality data: experiences and suggestions in the handling of autocorrelation"; (Louis H. Broekhoven, moderator).

14 July. James M. Lucas, "Optimum V-mask control schemes"; (Amrit L. Goel, moderator). Myles Hollander, "Recent results in nonparametric statistics"; (Gregory Campbell, moderator).

15 July. Ronald H. Randles, "Robust multivariate analysis with M-estimators"; (William W. Foster, moderator).

Structural Macromolecules: Glycoproteins

Kimball Union Academy

Victor Ginsburg, chairman; Phillips Robbins, vice chairman.

Biology of Complex Carbohydrates

22 August. Phillips Robbins, "Inhibitors of glycoprotein synthesis, I"; Douglas Struck, "Inhibitors of glycoprotein synthesis, II"; Andreas Scheid, "Viral glycoproteins, I"; Kenneth Keegstra, "Viral glycoproteins, II."

23 August. David A. Zopf, "Preparation of antibodies specific for sugar sequences found on cell surfaces"; Charles W. Parker, "Selective cytotoxicity of antibiotics coupled to anti-tumor antibodies"; Donald M. Marcus, "Immunological properties of glycolipids"; Chao-Ming Tsai, "Erythrocyte receptors for cold agglutinins."

24 August. Vincent Marchesi, "Molecular interactions between membrane-associated glycoproteins"; Lowell E. Hokin, "Chemistry and biosynthesis of the Na-K ATPase glycoprotein"; Keith Buridge, "Lectins as tools for glycoprotein research"; Pamela Stanley, "Lectins as tools for somatic cell research."

25 August. Elizabeth F. Neufeld, "Uptake of lysosomal enzymes"; Leonard D. Kohn, "Mebrane glycoproteins and glycolipids as hormone receptors"; Carlos Hirshberg, "Uptake of sialic acid by fibroblasts"; Richard Cummings, "Criteria for cell surface glycosyltransferases."

26 August. Anthony L. Tarentino, "Properties of endoglycosidases"; Frank Maley, "Use of endoglycosidases in studies on the structure and function of glycoproteins."

Theoretical Biology and Biomathematics

Tilton School

Leon Glass, chairman; George Bell, vice chairman.

13 June. J. Jacklet, "Chemical synaptic mechanisms involved in habituation"; M. Nass and L. Cooper, "A theory for the development of feature detecting cells in the visual cortex of cats"; S. Grossberg, "A theory of neural coding, memory and development"; C. F. McKhann, "Overview of cancer and immunology."

14 June. R. Lefever, "Mathematical models of immunological surveillance against cancer"; C. DeLisi, "Stochastic models of metastases"; A. Perelson, "Optimal strategies for the synthesis of antibodies in the immune system"; E. F. Yates, "Rhythms, fluctuations and stability in endocrine and metabolic systems."

15 June. R. Buckles, "The role of pharmacokinetic models in the optimization of chemotherapy"; J. Feldman, "Respiratory rhythmogenesis: mathematical modeling vs the real world"; L. Glass, "Limit cycle oscillations in mathematical models of biological control systems"; H. Reimann, "Periodic diseases."

16 June. M. Mackey, "Stable points, periodicity and chaos in models of cellular proliferation"; J. Yorke, "Models of gonorrhea, measles and other childhood diseases"; G. Bell, "Mathematical models of cancer progression"; R. Zahler, "Applications of catastrophe theory to biology: a critique."

17 June. B. Bunow, "Spatial patterns from realistic biochemical kinetics"; H. Othmer, "Spatial patterns in diffusion coupled biochemical oscillators"; J. Smoller, "Asymptotic behavior of solutions to systems of reaction-diffusion equations."

Toxicology and Safety Evaluation

Kimball Union Academy

Joseph F. Borzelleca, chairman; Robert J. Weir, vice chairman.

1 August. Alternatives to conventional whole animal toxicology, I, (V. Ray, chairman): B. Ames, "Bacterial test systems"; W. Thilley, "Human cell mutation assay: biochemical specificity and testing loads." Toxicology round table: The significance of short term data in the regulatory process (I. Munro, chairman). Alternatives to conventional whole animal toxicology, II, (Sheldon D. Murphy, chairman): J. Coats, "Model ecosystem test methods in toxicological evaluations."

2 August. Significant advances in carcinogenesis, I, (H. P. Drobeck, chairman): E. Farber, "The sequential analysis of liver carcinogenesis"; G. Sega, "Unscheduled DNA synthesis (DNA repair) in the germ cells of male mice and its role in the study of mammalian mutagenesis"; V. Dunkel, "Transformation—a presumptive test for carcinogenic potential." Toxicology round table: Significant advances in carcinogenesis, II, (H. P. Drobeck, chairman). Significant advances in carcinogenesis, III, (J. S. Campbell, chairman): J. Meites, "The potential role of estrogens and prolactin in the development of mammary and pituitary cancers."

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3 August. Toxicology of novel nutrient sources (S. Miller, chairman): S. Miller, "Technological schizophrenia: problems of evaluating novel nutrient sources"; (speaker to be announced), "Special problems of protein"; H. Dymsza, "Special problems of energy"; J. Vanderveen, "Paradox of regulation: nutrient or additive." Toxicology round table: Subject to be announced (A. Forbes, chairman). Environmentally induced peripheral neuropathies (C. J. Terhaar, chairman): P. Spencer, "Current approaches to toxic neuropathies."

4 August. Nutrition as a modifier of the toxic response (P. Newberne, chairman): T. C. Campbell, "Nutrition and the metabolism of xenobiotic compounds"; A. Alvares, "Interaction between nutritional factors and drug biotransformation in man." Toxicology round table: (The influence of dietary factors in the design of safety evaluation studies) (D. Hood, chairwoman). Fat, fact, fancy, folklore (M. Gallo, chairman): T. King, "Folklore toxicology"; P. Newberne, "Toxicological significance of overfeeding."

5 August. Newer aspects of benzene toxicology (R. Weir, chairman): B. Goldstein, "Inhalation toxicity of benzene"; R. Snyder, "Benzene metabolism and benzene-induced bone marrow disease."

Transport Phenomena in Lipid Bilayer and Biological Membranes

Tilton School

Stuart McLaughlin, chairman; Paul Mueller, vice chairman.

22 August. Channels in biological membranes (C. Stevens, chairman): E. Neher, F. Conti, C. Armstrong, F. Sigworth. Channels in artificial bilayer membranes (G. Ehrenstein, chairman): S. Hladky, R. Latorre.

23 August. Ion movements through bilayer membranes (D. Tosteson, chairman): P. Lauger, S. Feldberg, F. Cohen, R. Benz, and H. Ginzburg. Poster sessions.

24 August. Epithelia (J. Diamond, chairman): B. Rose and W. Loewenstein, C. Clausen, J. White. Energy coupling mechanisms (H. Morowitz, chairman): H. Kaback, P. Dutton, and J. Nagle.

25 August. Reconstitution I (L. Hokin, chairman): D. Oxender, P. Hinkle, M. Colombini. Molecular motions in membranes (T. Thompson, chairman): W. Webb and I. Smith.

26 August. Reconstitution II (P. Mueller, chairman): E. Racker, M. Raftery, M. Montal.