Gordon Research Conferences: Winter Program, 1976

Alexander M. Cruickshank

The Winter Gordon Research Conferences will be held 29 December 1975 through 30 January 1976 in Santa Barbara, California, at the Miramar Hotel.

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. 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.

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.

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. The recording of lectures by tapes, and the photography of slides are prohibited. Scientific publications are not prepared as emanating from the Conferences.

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

Registration and reservations. Attendance at the Conferences is by application. 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. Only registered conferees are permitted in the meeting room.

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 the members in an effort 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. This advance deposit is not required from foreign 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.*

The Board of Trustees of the Conferences has established a fixed fee of $175 for conferees covering registration, double room with bath, City of Santa Barbara room tax, meals, and services for five conference days. It will not provide for telephone, taxi, laundry, conference photograph, or any other personal expenses. The fixed fee was established to encourage attendance for the entire conference and to increase the special fund that is available to each conference chairman for the purpose of assisting conferees who attend a conference at total or partial personal expense with travel or subsistence expenses or with both.

It is to the advantage of all participants to attend a conference for the entire week. The fixed fee will be charged regardless of the time a conferee attends the conference—that is, for the periods of from 1 to 4 1/2 days. It is divided as follows: registration fee $50, room (double occupancy) and meals $125, including services for five conference days. *An additional charge will be made for a single room if no double rooms or roommates are available.* These rooms will be assigned in the order that applications are received. *An additional charge will be made for rooms occupied more than five conference nights (Sunday through Thursday).*

Guests. Accommodations are available for guests and for children 12 years of age and over. All such requests should be made at the time the attendance application is submitted. The charge for room and meals for a guest is $125 for five conference days. 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. *Guests are not permitted to attend the conference lectures and discussion sessions.*

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 speakers and discussion leaders, but may be granted to any registered conferee by the chairman. 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 location. Total travel and subsistence expenses usually will not be provided.

Cancellation. The conferee's deposit is forfeited if an approved application is cancelled. This deposit is not transferrable to another conferee or Conference.

Membership. Requests for membership in 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.

Biology of Aging

Richard C. Adelman, chairman; Vincent J. Cristofalo, vice chairman.

26 January. Accumulation of altered proteins (D. R. Sanadi and F. M. Sinex, presiding): M. Rothstein, D. Gershon, R. Holliday, C. Tan, A. Bailey, E. Miller, and A. Robinson, participants.

27 January. Protein regulation (G. S. Roth and A. Macieira-Coelho, presiding): G. Hirsch, A. Goldberg, R. C. Adelman, K. Moldave, H. Weissbach, and M. Obenrader, participants.

28 January. Immunological deficiencies (L. Hayflick and S. Goldstein, presiding): T. Makinodan, R. Walford, D. Harrison, W. Adler, and D. Danon, participants.

29 January. Neuroendocrine control (J. Roberts, presiding): J. Meites, G. Riegle, C. Finch, D. Denckla, and T. Klug, participants. Banquet speaker to be announced.

30 January. New approaches in gerontological research (V. J. Cristolfalo, presiding): L. Hayflick, G. Martin, K. Bayreuther, R. Hart, A. Schwartz, and L. Loeb, participants.

Electrochemistry

Robert de Levie, chairman; Herbert P. Silverman, vice chairman.

19–23 January. R. Memming, "Spectroelectrochemical studies at semiconductor interfaces"; R. Van Duyne, "Tunable dye laser resonance Raman spectroscopy in electrochemistry"; M. S. Wrighton, "Conversion of intense optical energy using photoelectrochemical cells"; D. Kolb, "Optical and electrochemical properties of metal monolayers"; D. E. Smith, "Applications of the Fourier transform in electroanalytical chemistry"; K. B. Oldham, "Developments in semi-integration"; S. K. Rangarajan, "Non-linear relaxation methods"; P. Mueller, "Electrical excitability of lipid bilayers and cell membranes"; G. A. Somorjai, "The new techniques of surface science: what they do and their possible application in electrochemistry"; L. L. Miller, "Reactions at chirol electrodes"; R. W. Murray, "Chemically derivatized tinoxide and carbon electrodes"; T. Kuwana, "Coenzyme- and mediator-bound electrode surfaces"; V. D. Parker, "Energetics of electrode reactions of organic molecules"; A. J. Bard, "Organic electrochemistry in liquid ammonia"; J. M. Savéant, "Some mechanistic aspects of organic reductions"; B. Baker, "Design and applications of nickel/hydrogen cells"; R. P. Tischer, "The sulfur electrode"; P. Nelson, "Lithium metal/sulfide batteries."

Deformation Mechanisms and Fracture of Polymers and Composites

Sidney J. Green, chairman; Robert F. Landel, vice chairman.

19 January. Effects of environment on mechanical response—aging phenomena. Effects of environment on mechanical response—hydrogen sulfide and carbon dioxide.

20 January. Special biomedical environmental effects. High temperature applications.

21 January. Deformation mechanisms including dialation. Fracture with emphasis on life cycles.

22 January. Fatigue damage—effects of cyclic loading. Mechanical attachment and adhesion.

23 January. Limitations. (Speakers to be announced).

Liquid Crystals

Edward M. Barrall, II, chairman.

5–9 January. Major lectures: Edgar F. Westrum, "Solid state and liquid crystalline transition calorimetry"; Roger S. Porter, "Rheology of polymer liquid crystals"; Fraser Price, "X-ray diffraction and dilatometry of liquid crystals"; A. Saupe, "Optical properties of liquid crystals"; M. M. Labes, "Studies of aligned chiral phases"; Orsay Group, "Hydrodynamic, thermal and electrical instabilities in mesophases"; S. Meiboom, "Rotational viscosity in smectic liquid crystals"; Stig Friberg, "Structures of lyotropic liquid crystals"; Adrian V. Parsegian, "Intermolecular forces creating lyotropic liquid crystals"; G. Graham Shipley, "Liquid crystals and their importance in cell membranes, serum lipoproteins and atherosclerosis"; John E. Lydon, "The liquid crystalline state as a model for some of the self-ordering processes which occur during mitosis and other biological events." Y. B. Amerik, "Liquid crystal polymer systems." Shorter presentations: Adriaan deVries, "A closer look at the temperature dependence of cybotactic nematic character"; Alejandro Wulf, "Some properties of the smectic-C mesophase"; Dinesh O. Shah, "Structure and rheology of microemulsions and liquid crystals"; Bing Fung, "NMR of liquid crystalline phospholipid solutions"; Robert N. Schwarz, "EPR studies of Heisenberg spin exchange of ordered nitroxide radicals in liquid crystals"; David A. Dunmur, "The dielectric properties of some cyanobiphenyl liquid crystals"; B. Kerllenevich and A. Coche, "Light diffusion by some products of positive dielectric anisotrophy"; Orsay Group "The structural behavior of the liquid crystal phase"; Eli Grushka, "Chromatography on thin mesophase films"; E. F. Carr, "Conductivity anisotropy and molecular alignment in bulk samples"; N. A. Clark, "Liquid crystal free films."

Metals and Metal Binding in Biology

W. H. Orme-Johnson, chairman; T. G. Spiro, vice chairman.

29 December. Activation of small molecules by heme enzymes: H. Beinert, "Cytochrome oxidase"; I. C. Gunsalus, "Cytochrome P_{450}"; J. Collman, "Model systems." Newer spectroscopic methods and results: T. Spiro, "Resonance Raman"; W. Mims, J. Peisach, and W. Blumberg, "Linear electric field effect and EXAFS."

30 December. Binding sites, active sites: S. Lippard, "Pt intercalation"; L. Jensen, "Hermerythrin structure"; D. Richardson and J. Richardson, "Superoxide dismutase structure." Copper: homing in on active sites (H. A. O. Hill, chairman): J. Fee, "Biochemical overview"; H. B. Gray, "Kinetics/structure"; D. Margerum, "Is Cu III important?"

31 December. Iron sulfur proteins and enzymes: J. C. Rabinowitz, "Chemistry of ferredoxins"; W. H. Orme-Johnson, "Nitrogenase"; R. Holm, "Model systems." P. D. Saltman (subject to be announced).

1 January. Molybdenum in biology: R. C. Bray, "Overview of Mo enzymes"; P. A. Ketchum, "Carriers and the Mo cofactor"; J. Chatt, "Abiological nitrogen fixation." Activation of saturated bonds: J. Halpern, "Principles"; L. Mortenson, "Hydrogenase"; R. L. Blakley, "Nucleotide reductase."

2 January. Calcium in mammalian metabolism: F. L. Siegel, "Tissue Ca binding proteins"; J. Stenflo, "Ca and prothrombin"; H. F. DeLuca, "Vitamin D/Ca/phosphorus."

Chemistry and Biology of Peptides

William A. Gibbons, chairman; R. A. Smeby, J. M. Stewart, H. R. Wyssbrod, R. Walter, co-chairmen.

5–9 January. The distribution of topics will be 25 percent chemistry to 75 percent biology. Eight sessions will be devoted to scheduled lectures, usually followed by round-table discussions. Two evening sessions, Tuesday and Thursday, will be devoted to nine 10-minute unscheduled lectures. In lieu of discussion, each lecturer in these short sessions will have a corresponding poster session. Following their presentation, there will be an opportunity to discuss their lecture and work with interested participants. It is hoped that these two sessions will encourage participation by less established scientists and leave room for highly up-to-date research. None of these short lecture-poster sessions shall exceed seven slides.

Current research on the chemistry and biology of the following peptides will be included: PTH, ACTH, β-MSH, peptide antibiotics, LH, FSH, prolactin, LHRF, TRF, angiotensins, somatostatin, thymosin, ubiquitin, thymopoietin, oxytocin, and vasopressin.

Biosynthesis and degradation (chairman to be announced): H. Kleinkauf, D. Smyth, D. Steiner, and R. Walter; T. Goodfriend, discussion chairman. Synthesis and se-

quencing (R. Hirschmann, chairman): J. M. Stewart and D. Schlesinger; W. Hirs, discussion chairman. Conformation and physical properties (B. Pullman, chairman): H. R. Wyssbrod, G. Van Binst, R. Deslauriers, and M. Klein; J. Glickson, discussion chairman. Miscellaneous communications (R. Rocchi, chairman). Receptors (C. H. Li, chairman): J. Roth, M. Dufau, and M. Rodbell; discussion chairman to be announced. Peptides, steroids, vitamins: integration of physiology and metabolism (C. Arnaud, chairman): B. O'Malley, J. N. Potts, Jr., H. F. DeLuca, and W. N. Scott; C. Arnaud, discussion chairman. Peptides and reproduction (chairman to be announced): N. Schwarz, F. LaBrie, and W. Vale; W. Sadtler, discussion chairman. Miscellaneous communications (L. Hue, chairman). Angiotensins (A. Paiva, chairman): R. A. Smeby, S. Fermandjian, T. Goodfriend, and K. Catt; F. M. Bumpus, discussion chairman. Peptides and immunology (chairman to be announced): A. Goldstein, G. Goldstein, and V. Stevens.

Plastic Crystals and Molecular Freedom

Edgar F. Westrum, Jr., chairman; George W. Smith, vice chairman.

12 January. Plastic crystals vis à vis other mesomorphic phases. Melting (L. A. K. Staveley, discussion leader): A. R. Ubbelohde (subject to be announced); G. W. Smith, "Plastic crystals, liquid crystals, and order." Theory (F. E. Karasz, discussion leader): S. Chandrasekhar (subject to be announced); P. A. Reynolds, "The use of intermolecular potentials in disordered crystals"; A. Hüller, "Phase transitions in plastic crystals."

13 January. X-ray, neutron, infrared, and Raman spectroscopy of plastic crystals (W. G. Rothschild, discussion leader): W. Press, "Orientational order-disorder transitions in methanes (deuterated and undeuterated) by neutron scattering"; J. J. Rush, "Neutron scattering studies of orientationally disordered inorganic solids"; R. Rudman, "Phase transitions in methylchloromethane compounds by low temperature x-ray diffraction"; J. Janik (subject to be announced). Optical properties, Rayleigh, and Brillouin scattering (D. A. Dows, discussion leader): J. A. Morrison, "Optical birefringence and thermal measurements on methylchloromethane compounds"; D. A. Dows, "Brillouin scattering in some molecular crystals"; (speakers and subjects to be announced).

14 January. Calorimetry and thermodynamics of mesomorphic phases (J. T. S. Andrews, discussion leader): L. A. K. Staveley (subject to be announced); E. F. Westrum, Jr. (subject to be announced); D. Smith, "Hindered rotational energy levels of a tetrahedron in a trigonal crystalline field"; (speakers and subjects to be announced). Lattice defects, diffusion, creep, radiotracers, and plasticity (R. H. Baughman, discussion leader): J. N. Sherwood (subject to be announced); H. A. Resing, "Estimation of vacancy concentration in anthracene from heat capacity—a critique"; (speakers and subjects to be announced).

15 January. Magentic resonance, energy barriers, conformation, and molecular dynamics (H. S. Gutowsky, discussion leader): J. N. Strange (subject to be announced); J. Jonas, "NMR studies of density effects on the dynamics of molecular crystals"; C. A. Fyfe, "Barriers to rotation in molecular solids"; J. D. Graham, "Molecular dynamics and NMR of the choline ion"; (speakers and subjects to be announced). Acoustic, dielectric, and mechanical properties (S. L. Segel, discussion leader); H. Meyer (subject to be announced); D. B. McLay, "Investigation of solid rotator phases by dielectric and proton relaxation measurements"; S. K. Garg, "Molecular motion in clathrate hydrates by dielectric and NMR measurements"; (speakers and subjects to be announced).

16 January. Plastic crystal aspects, "glassy" crystals, clathrates, charge transfer complexes, binary systems (C. A. McDowell, discussion leader): H. Chihara (subject to be announced); L. V. Coulter, "Molecular motion of guest molecules in clathrates"; S. Seki, "Glassy crystals"; D. W. Pratt, "EPR and optical studies of free radicals in an adamantane matrix."

Polymers

N. W. Tschoegl, chairman; J. D. Hoffman, vice chairman.

12 January. (T. L. Smith, discussion leader): M. L. Huggins, "56 years of polymer research"; J. D. Ferry, "Viscoelastic properties of dilute polymer solutions." (A. J. Chompff, discussion leader): P. J. Flory, "Morphology of polymers in relation to molecular flexibility."

13 January. (R. F. Landel, discussion leader): G. Rehage, "Glass transition phenomena of atactic polystyrene under pressure"; A. J. Kovacs, "Isothermal growth, thickening and melting of low molecular weight poly(ethylene oxide) single crystals in the bulk." (J. Delmonte, discussion leader): F. Eirich, "The catalysis of polymers on clays and its possible role in the chemical evolution prior to life"; J. C. Randall, "Polymer sequences and configurational distribution as determined quantitatively with ^{13}C NMR."

14 January. (R. E. Cohen, discussion leader): J. B. Donnet, "Some fundamental and practical aspects of polymer adhesion"; D. Meier, "Solubilization of homopolymers by block copolymers." (R. K. Eby, discussion leader): Charles C. Han, "Conformation of block copolymers in dilute solutions by small angle neutron scattering"; R. Ullman, "Small angle neutron scattering of polymers."

15 January. (E. F. Oleynik, discussion leader): N. S. Enikolopian, "Kinetic and structural aspects of the formation of three-dimensional polymeric gels"; A. Malkin, "Limits of flow of polymers in shear and uniaxial extension." (J. R. Knox, discussion leader): D. T. Clark, "ESCA studies of structure, bonding and reactivity of polymeric systems"; E. P. Otocka, "Liquid chromatographic methods in polymer analysis."

16 January. (J. D. Hoffman, discussion leader): Bernhard Wunderlich, "Nucleation, crystallization and annealing of linear macromolecules"; P. Hendra, "Recent research into the crystallization of polyethylene."

Sensory Transduction in Microorganisms

Bodo Diehn, chairman; Yutaka Naitoh, vice chairman.

29 December–2 January. Instrumental methods for studying behavior (D. Davenport, discussion leader): J. Greaves and E. Lipson; F. Dahlquist, participant. Electrophysiological methods and mechanotransduction (L. Kuznicki, discussion leader): Y. Naitoh and D. Wood; S. Dryl, R. Eckert, T. Jahn and H. Machemer, participants. Habituation and protomemory (discussion leader to be announced): E. Eisenstein. Photomovement (W. Haupt, discussion leader): F. Lenci and W. Nultsch; M. Feinleib, R. Forward, D. Haeder, B. Wilson, and R. Ferrara, participants. Photoreceptors and phototransduction; thermoreception (P. Song, discussion leader): H. Berg and B. Diehn; G. Colombetti, A. Kivic, E. Mikolajczyk, F. Oosawa, K. Poff, K. Tawada, and J. Wolken, participants. Phototropism (W. Shropshire, discussion leader): D. Denison; W. Briggs, W. Butler, and M. Delbrück, participants. Chemoaccumulation and chemotransduction (B. Diehn, discussion leader): J. Adler and D. Koshland; R. Allen, R. Miller, R. Mitchell, and G. Ordal, participants. Genetics of stimulus transduction (E. Cerdá-Olmedo, discussion leader): C. Kung and S. Parkinson; G. Hazelbauer and G. Hudock, participants. Plenary session: evolutionary aspects of sensory transduction (Max Delbrück, discussion leader): S. Ward and W. Lowenstein.