Gordon Research Conferences: Winter Program, 1978

Alexander M. Cruickshank

The Winter Gordon Research Conferences will be held 2 January–10 February 1978 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 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 effort among labóratories.

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 provide 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

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the individual making the contribution, whether in formal presentation or in discussion. The recording of lectures by tapes, and so forth, and the photography of slides are prohibited. Scientific publications are not prepared as emanating from the Conferences.

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 completed on receipt of the card and the deposit of \$30. This advance deposit is not required from scientists arriving in the United States from foreign countries. 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 all participants (speakers, discussion leaders, 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, confer-

ence photograph, or any other personal expenses. The fixed fee was established to encourage attendance for the entire conference and to increase the Special Funtl which 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 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 PARTICIPANT (SPEAKERS, DISCUSSION LEADERS, CONFER-EES) ATTENDS THE CONFER-ENCE—THAT IS, FOR THE PERIOD OF FROM 1 TO 41/2 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 for 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 conference application is submitted. The charge for rooms and meals for guests 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 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.

Deformation Mechanisms and Failure in Polymers and Composites

S. S. Sternstein, chairman; K. L. DeVries, vice chairman.

16 January. Short fiber composites: J. Halpin, "The composite analogy for short fiber reinforcement and semi-crystalline polymers"; R. McCullough, "Constitutive relationships for short fiber systems"; L. Goettler, "Processing-property relationships in short fiber composites"; F. Ramsteiner, "Tensile and impact strength of thermoplastics uni-directionally reinforced with short glass fibers."

17 January. Short fiber composites (continued): R. Heimbuch, "Fatigue and creep of short fiber glass composites." Failure phenomena: R. Schapery, "Effect of moisture on flaw growth in viscoelastic composites"; R. B. Pipes, "Fracture of notched composite laminates"; I. Daniel, "Deformation and fracture in composite laminates with stress concentrations."

18 January. Failure phenomena (continued): T. Guess, "Deformation and failure of graphite-epoxy and Kevlar-epoxy laminates in biaxial stress states"; D. Roylance, "Mechanics of fracture in oriented polymers." Mechanics of composite materials: Z. Hashin, "Particulate composites"; J. Fitzgerald, "The rheology of metatropic materials—theory and observations."

19 January. Applications: J. D. Walter, "Compliant composite structures—the pneumatic tire"; P. Beardmore, "Automotive applications of graphite-epoxy composites." Open forum (R. J. Diefendorf, discussion moderator): short presentations.

20 January. Matrix properties: C. Browning, "Moisture effects in epoxy resins"; D. Katz, "Structure-property relationships in cross-linked polymers."

Electrochemistry

Royce W. Murray, chairman; Ralph J. Brodd, vice chairman.

23 January. Chemical and energy states at electrodes: S. F. Nelsen, "Alkyl group structural effects on the one electron oxidation of tetraalkylhydrazines"; Robert Gomer, "Absolute half-

cell Emfs and the air-water interface"; M. J. Weaver, "Co(III/II) redox couples as simple model systems for electrode surface catalysis"; C. Gabrielli, "Recent progress in electrochemical noise."

24 January. Chemical and energy states at electrodes: H. Gerischer, "Electronic energy states and surface reactions at semiconductor electrodes"; Steve Feldberg, "Energy transfer at lipid bilayer interfaces." Open session.

25 January. Chemical systems: T. J. Meyer, "Optical and thermal electron transfers of metal complexes"; D. W. Margerum, "Cu(III/II) and Ni(III/II) complexes"; R. J. Jasinksi, "Deposition of viologens onto solid electrodes"; F. B. Kaufman, "Cooperative electronic interactions in new TTF polymers and copolymers."

26 January. Spectroscopy applied to electrochemistry: N. Winograd, "Studies of electrode surface chemistry with electron and particle spectroscopy"; A. J. Bard, "Photo-acoustic and photo-thermal spectroscopy"; Richard P. Van Duyne, "Raman spectroscopy of the electrode/solution interface"; W. Heineman, "Thin-layer spectroelectrochemistry."

27 January. Electroanalysis: Stanley Bruckenstein, "Electrochemical gas sensors"; R. A. Osteryoung, "Some recent work in pulse voltammetry."

Hormone Action

Kevin J. Catt, chairman; Jack Gorski, co-chairman; Gerald Mueller, vice chairman

6 February. Hormonal regulation of gene transcription (J. Gorski, session chairman): B. O'Malley, "Regulation of gene expression"; R. Schimke, "Steroid hormones and protein synthesis in the oviduct"; K. Yamamoto, "Regulation of mammary tumor virus gene expression by glucocorticoids." Cell biology of hormone action (J. Baxter, session chairman): P. Seeburg, "Regulation of the growth hormone gene"; I. Edelman, "Mediating events in the action of aldosterone."

7 February. Plasma membrane structure and function (J. Roth, session chairman): G. Nicolson, "Structure of membrane proteins"; W. Wickner, "Biogenesis of cell membranes"; F. Fox, "Analysis of cell surface receptors." Mechanisms of androgen action (J. Wilson, session chairman): W. Bardin, "Androgen control of beta-glucoronidase and ABP synthesis"; S. Liao, "Factors regulating androgen action."

8 February. Mechanisms of receptor

regulation and turnover (K. Catt, session chairman): D. Fambrough, "Regulation and turnover of acetylcholine receptors"; J. Goldstein, "The LDL receptor and regulation of steroid metabolism"; P. Gorden, "Regulation of insulin receptors: a morphological approach." Interactions at the cell surface (J. Tata, session chairman): Z. Cohn, "The flow and turnover of plasma membrane"; J. Adler, "Mechanism of sensory transduction in bacterial chemotaxis: the role of protein methylation."

9 February. Hormonal regulation of protein kinase and cell responses (S. Korenman, session chairman): G. Gill, "Structure and function of cAMP- and a cGMP-dependent protein kinases"; M. Dufau, "Hormonal regulation of Leydig cell functions"; A Means, "Actions of FSH in cultured Sertoli cells." Chromatin structure and transcription (G. Mueller, session chairman): R. Axel, "Structure of the transcriptionally active ovalbumin gene in chromatin"; W. Rutter, "Eucaryotic genes and their transcription."

10 February. Functions of steroid hormone receptors (T. Hamilton, session chairman): E. Jensen, "Immunochemical studies with estrophilin"; J. Clark, "Heterogeneity of estrogen binding sites in the cytosol and nuclear fraction of the rat uterus"; D. Toft, "Enzymic functions related to progesterone receptor." Poster sessions will be held 4:00 to 6:00 p.m. on Monday, 6 February, and Tuesday, 7 February. Abstracts should be submitted with requests for membership in the conference.

Liquid Crystals

E. T. Samulski, chairman; M. M. Labes, vice-chairman.

2 January. N. Clark, "Liquid crystal free films"; J. Janik, "Dynamics of molecules in liquid crystals via neutron scattering"; W. J. A. Gossens, "Dielectric properties of liquid crystals"; Chia-Wei Woo, "Molecular theory of liquid crystals."

3 January. D. B. DuPré, "Structure and properties of polymeric liquid crystals"; P. Pincus, "Nematic polymers: theoretical models." Poster session.

4 January. S. Kobayashi, "Liquid crystal device research in Japan"; F. J. Kahn, "Liquid crystal display research in the United States; progress and prospects"; I. A. Shanks, "Recent materials and applications research on liquid crystals." Poster session.

5 January. D. Papahadjopoulos, "The nature of biological membranes"; S.

Marčelja, "Structural effects in membrane interactions"; G. Gregoriadis, "Drug carrier potential of liposomes (phospholipid vesicles) in medicine."

6 January. Z. Luz, "Magnetic resonance in smectics"; J. D. Litster, "High resolution x-ray scattering from smectic liquid crystals."

Metals in Biology

Thomas G. Spiro, chairman; James A. Fee, co-chairman.

23 January. Oxygen activation: G. Hamilton, " O_2 in biochemistry"; J. Halpern "Metal activation of O_2 "; J. Groves, "Oxidation mechanisms"; J. Valentine, "Superoxide." Oxygenase action: O. Hayaishi, "Oxygenases"; M. Coon, "Cytochrome P_{450} "; J. Collman, "Model systems."

24 January. Redox biochemistry: E. Stiefel, "Mo biochemistry"; D. Sawyer, "Mn biochemistry"; J. Fee, "Superoxide dismutases"; G. Schrauzer, "Se biochemistry." Copper and iron: B. Malmstrom, "Cytochrome oxidase"; H. Gray, "Cu biochemistry"; C. Walsh, "Ferritin iron mobilization"; P. Aisen, "Transferrin."

25 January. Zinc enzymes: J. Riordan, "Zinc in biochemistry"; E. T. Kaiser, "Enzyme mechanisms"; A. Sargeson, "Model systems"; A. Mildvan, "DNA polymerase." Metal-nucleic acid interactions: B. Rosenberg, "Pt anti-tumor drugs"; L. Loeb, "Metals and genetic miscoding"; S. Lippard, "Metal-nucleic acid chemistry."

26 January. Iron-sulfur proteins: L. Mortenson, "Hydrogenase"; W. Orme-Johnson, "Nitrogenase"; R. Holm, "Chemical analogs"; R. Shulman, "EXAFS studies." J. Wood, "Metal ions and the environment."

27 January. Physical probes: W. Horrocks, "Lanthanide probes"; J. Peisach, "New magnetic resonance probes"; C. Hutchinson, "ENDOR."

Orientational Disorder in Crystals

George W. Smith, chairman; Reuben Rudman, vice chairman.

9 January. (A. R. McGhie, discussion leader): R. Fort, "Heteroadamantanes, improved syntheses and plastic crystalline properties"; J. N. Sherwood, "The purification, growth, and perfection of single crystals of molecular solids." (M. Descamps, discussion leader): R. Rudman, "Structural relationships between tetrahedral molecules in the ordered and orientationally disordered phases"; R.

O. Simmons, "X-ray studies of phase transitions and thermal expansion of solid methanes"; J. M. Thomas, "Probing structural defects by electron microscopy."

10 January. (H. Chihara, discussion leader): C. W. Garland, "Order-disorder transitions in ammonium halides"; R. J. Meyer, "Landau theory approach to phase transitions in plastic crystals"; M. Blume (subject to be announced). (J. A. Morrison, discussion leader): L. A. K. Staveley, "Applications of accurate calorimetry to problems of orientational disorder"; E. F. Westrum, Jr., "Orientational disorders in condensed ring polyatomics via calorimetry."

11 January. (J. J. Rush, discussion leader): G. Dolling, "Orientational disorder near the phase transition in CBr₄"; A. J. Leadbetter (subject to be announced). (E. Courtens, discussion leader): W. Press, "Experiments on rotational motions in solids by neutron spectroscopy"; A. Hüller, "The theory of neutron scattering from rotational excitations in molecular crystals"; W. G. Rothschild, "Vibrational relaxation and orientational disorder in crystal neopentane"; C. H. Wand (subject to be announced).

12 January. (E. R. Andrew, discussion leader): J. H. Strange, "Mixed crystals and NMR"; F. A. Rushworth, "Molecular motion in some solid cycloalkanes"; J. Jonas, (subject to be announced); N. Boden, "NMR studies of rotational and translational motions in orientationally disordered molecular crystals"; J. D. Graham, "High resolution 13C and 1H relaxation measurements in plastic crystals." (K. Michel, discussion leader): J. C. Raich, "The determination of intermolecular potentials from solid state data"; T. Yamamoto, "Neutron scattering and temperature-dependent tunneling levels of solid CH4 in phase II"; M. Descamps, "Influence of orientational correlations on neutron scattering and dielectric constant."

13 January. (A. Bondi, discussion leader): L. Passell, "Using neutrons to study physisorbed monolayers"; H. Dachs, "Orientational disorder of the OH group in NaOH"; M. Klein, "Applications of computer simulation."

Chemistry and Biology of Peptides

Ralph Hischmann, co-chairman; Walter N. Scott, co-chairman.

30 January. Conformational analysis (Kenneth Kopple, discussion leader): Gerald Fasman, "The utility of the prediction of the secondary structure of

polypeptides"; Garland Marshall, "Discrepancies between theory and experimental observations of peptide conformations"; William Gibbons, "Multiple conformations of neuropeptides and peptide antibiotics." Conjugated peptides and proteins (Jesse Roth, discussion leader): Roger Jeanloz, "Chemistry of glycopeptides"; Antonio Gotto, Jr., "Peptide chemistry and the structure of the plasma lipoprotein."

31 January. Synthesis of Peptides I (Johannes Meienhofer, discussion leader): Robert Schwyzer, "Artificial amino acids and polypeptide hormone receptors"; Bruce Erickson, "Synthetic peptides related to serum complement"; Leo Benoiten, "Racemization and the individuality of amino acid residues during couplings." Synthesis of peptides II (David Coy, discussion leader): Raniero Rocchi, "Synthetic studies on protein protease inhibitors": Bruno Kamber, "Synthetic routes to cystine containing peptides."

I February. Peptides related to memory and learning (Dorothy Krieger, discussion leader): Abba Kastin, "CNS effects of hypothalmic peptides"; Curt Sandman, "Behavioral effects of MSH and related peptides"; W. H. Gispin, "Neurochemical mechanism of action of behaviorally active peptides." Peptides as substrates for proteases (Roderich Walter, discussion leader): Erhard Gross, "The action of proteases on unique peptide structures"; Günter Blobel, "Synthesis and processing of pre-secretory proteins."

2 February. γ -Carboxyglutamic acid (Craig Jackson, discussion leader): John Suttie, "Peptide substrates for the vitamin K-dependent carboxylase"; Richard Hiskey, "Studies on peptides containing γ -carboxyglutamic acid residues"; Gary Nelsestuen, "The interaction of γ -carboxyglutamic acid containing proteins with membranes." Miscellaneous subjects (Leonard Kohn, discussion leader): Anthony Pearse, "Peptides common to the brain and intestine"; Alan Schechter, "Immunochemical studies of the folding of peptides."

3 February. Endorphins and related compounds (Karl Folkers, discussion leader): Floyd Bloom, "β-Endorphine—cellular localization and effects"; Jack Morley, "Enkephalin-like peptides. Structure-activity relationships"; Nicholas Ling, "Structure-activity relationships of enkephalin and endorphin analogs." Special evening session (date to be decided): Kenneth Rinehart, "Structures of peptide antibiotics studied by field desorption and gas chromatographic-mass spectrometry."

Polymers

H. D. Keith, chairman; W. S. Zimmt, vice chairman.

9 January. (H. D. Keith, discussion leader): R. P. Wool, "Recovery mechanisms in polymers"; D. C. Bassett, "On lamellar organization in polyethylene spherulites." (S. Elaine B. Petrie, discussion leader): H. Höcker, "The active species in the anionic polymerization of MMA in polar solvents"; Morton Litt, "Structure and properties of dimethylsiloxane dizwitterionomer copolymers."

10 January. (J. M. O'Reilly, discussion leader): A. J. Kovacs, "Volume and enthalpy recovery in glasses: a transparent multiparameter theory and its comparison with experiment"; P. B. Macedo, "Viscoelasticity of monomers and polymers." (J. L. Koenig, discussion leader): J. D. Ferry, "Entanglement networks crosslinked in strained states"; B. J. Briscoe, "Friction, lubrication and wear of polymers."

11 January. (T. L. Smith, discussion leader): I. M. Ward, "Studies of structure and properties in oriented amorphous polymers"; J. A. Manson, "Fatigue crack propagation: effect of polymer structure, composition, and morphology." (W. R. McDonald, discussion leader): J. H. Weiner, "Computer simulation of conformational transitions in long chain molecules."

12 January. (J. D. Hoffman, discussion leader): W. H. Stockmayer, "Dielectric and NMR relaxation in polymer solutions"; J. H. Gibbs, "Theory of molecular weight distributions in condensation polymerizations." (J. R. Knox, discussion leader): John F. Lontz, "The role of polymers in restoration and rehabilitation of human functionality."

13 January. (W. S. Zimmt, discussion leader): D. W. Ovenall, "Microstructure of polymers by carbon-13 NMR spectroscopy"; F. A. Bovey, "Structure and mobility of polymer chains as observed by carbon-13 NMR spectroscopy."

Sensory Transduction of Microorganisms

Walter Shropshire, Jr., chairman; Kenneth Poff, vice chairman. 2 January. Sensory transduction (Walter Shropshire, discussion leader): Walter Shropshire, "Sensory transduction"; S. Luria, "Exploring the bacterial membrane with colicins"; E. Eisenstein, "Aneural organisms in neurobiology." Motor apparatus (L. Kuznicki and M. Feinleib, discussion leaders): I. Gibbons, "Sea urchin sperm"; R. M. McNab, "Bacterial motility"; Leonard Nelson, "Neurotransmitter substance control of spermatozoan motility."

3 January. Chemosensory I (H. Berg, discussion leader): J. Adler, "Mechanisms of sensory transduction in bacterial chemotaxis"; S. Clark, "Protein methylation in chemotaxis"; P. Matsumura, "Proteins of bacterial chemotaxis." Chemosensory II (J. Adler, discussion leader): G. Ordal, "Cytochrome reduction and proton fluxes in response to chemotactic attraction in Bacillus subtilis"; G. Gerisch, "Recognition and rhythmic generation of cyclic AMP signals in Dictyostelium"; A. MacInnis, "Chemosensory systems in parasitic platyhelminths"; R. Russell, "Sensory responses in nematodes."

4 January. Photosensory (W. Briggs, discussion leader): D. Presti, "Flavin nature of blue light receptor"; K. Foster, "Photoresponses in halobacteria"; D. Häder, "Photomotion." Thermosensory (K. Tawada, discussion leader): F. Oosawa, "Thermosensory mechanisms of motility in bacteria and protozoa"; K. Poff, "Thermosensory transduction in Dictyostelium." Geosensory (B. Diehn, discussion leader): J. Kessler, "Intracellular transport in zero gravity"; A. Roberts, "Geotaxis in motile microorganisms"; A. Sievers, "Perception of gravity in plant cells."

5 January. Bioelectric control of motion (C. Kung, discussion leader): Donata Oertel, "Voltage clamp studies of Paramecium tetraurelia"; David Nelson, "Biochemical studies of ciliary function"; Hans Machemer, "Membrane-controlled Ca⁺⁺ modifies ciliary movements"; K. Takashashi, "Bioelectric control of metazoan cilia." Poster sessions (participants are to be announced).

6 January. Membranes and receptor

localization (T. Tien, discussion leader): M. Blank, "Electrochemistry of membranes"; J. Schmidt, "Role of Ca⁺⁺ and surface membrane in photoresponses of flagellates"; R. Cone, "Rhodopsin and visual excitation." Summary—emerging themes: P.-S. Song. W. Haupt and V. Chen.

Tumor Immunology

Stewart Sell, chairman; Robert Schwartz, vice chairman.

16 January. Genetic aspects of the immune response to tumor antigens (Baruj Benacerraf, chairman): Frank Lilly, speaker; Rolf Zinkernagel, Ronald Germain, G. W. Schrader, D. Muello, discussants. Current concepts of carcinogenesis and tumor biology (Frederick F. Becker, chairman): G. Barry Pierce, speaker; Robert Baldwin, Margaret Kripke, discussants.

17 January. Cell mediated tumor immunity (Christopher S. Henney, chairman): Ronald B. Heberman, James Forman, Peter Doherty, Ingegerd Hellstrom, speakers and discussants. Antibody mediated tumor immunity (Tibor Borsos, chairman): Sarkis H. Ohanian, Ralph Reisfeld, Saldano Ferrone, Neil R. Cooper, T. Lint, speakers and discussants.

18 January. Oncodevelopmental tumor antigens (Karen Artzt, chairman): Edward Boyse, Dorothia Bennet, Stanley Chism, Garri Abelev, speakers. Immune surveillance of oncogenic viruses (James Ihle, chairman): Max Essex and Harvey Rabin, speakers; N. A. Mitchinson and Irving Weissman, discussants.

19 January. Control of immune responses to tumors (Richard Gershon, chairman): Richard Gershon, speaker; Edward Golub, Robert Rich, Susan Rich, Mark Greene, discussants. Open discussion: Peter Alexander, Richmond Prehn and Henry Winn, discussion lead-

20 January. Evidence for immune response to spontaneous tumors (William D. Terry, chairman): George Klein, speaker; Lloyd Old, H. B. Hewitt, Bernie Amos, discussants.

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GORDON RESEARCH CONFERENCES

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APPLICATION

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