

The American Physical Society

Division of Electron and Atomic Physics

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TO MEMBERS OF THE DEAP FROM PAT DEHMER

I. DEAP ELECTION RESULTS

We congratulate Richard Freeman of Bell Laboratories who was elected to a three-year term on the Executive Committee in the November 1981 DEAP election in what turned out to be an extremely close race. Of the 377 ballots cast, only 7 votes separated the winner from the runner up. We would like to thank all those who voted in this election and remind the 83% of you who did not vote (yes, over 1,800 DEAP members did not return their ballots) that nearly all DEAP elections are close.

II. DEAP MEMBERS ADVANCED TO APS FELLOW

We are pleased to announce that the following DEAP members were elected APS Fellows at the 22 November 1981 APS Council Meeting:

Girish Agarwal	(University of Hyderabad, India)
Michel Barat	(University of Paris, France)
Walter Johnson	(Notre Dame University)
Brian Judd	(Johns Hopkins University)
Howard Taylor	(University of Southern California)
George Victor	(Harvard-Smithsonian Center for Astrophysics)
Daniel Walls	(University of Waikato, New Zealand)
Francois Wulleumier	(University of Paris, France)

III. REPORT ON THE 1981 DEAP MEETING IN NEW YORK CITY

The annual meeting, held at the Roosevelt Hotel in New York City, was a great success. There were 396 registrants, with 215 contributed papers and 22 invited papers. The banquet at New York University was attended by 196 persons. We are all grateful to Henry Stroke of New York University who acted as local chairman of this meeting and to the representatives of more than a dozen local research institutions for agreeing to arrange tours of their facilities. Thanks also go to Ben Bederson of New York University who arranged an excellent Chinese banquet on the last night of the meeting. This banquet was attended by nearly 100 persons and served as a fitting close to the 1981 meeting.

IV. DEAP COMMITTEES FOR 1982

The membership of the various DEAP committees for 1982 has been finalized and is given below. In each case the name of the chairperson is underlined and his address is given in parentheses. The Executive, Program, Publications, and Fellowship Committees will each meet at the APS Spring Meeting in Washington, D.C. (26-29 April 1982). DEAP members are encouraged to write to the Program Committee chairperson with suggestions for symposia topics for both the general APS meetings in January, March, April, and November 1983 and the DEAP annual meeting in May 1983. The Fellowship Committee will begin preparing a list of DEAP members to be nominated for APS Fellow, and suggestions should be sent to the chairman of that committee.

- Executive Committee: Alexander Dalgarno (Center for Astrophysics, 60 Garden Street, Cambridge, Massachusetts 02138), Daniel Kleppner (Vice-Chairperson), Patricia Dehmer (Secretary-Treasurer), Ivan Sellin (Division Councillor), Richard Freeman, Thomas Gallagher, David Golden, Ronald Henry, and Winthrop Smith
- Program Committee: Daniel Kleppner (Massachusetts Institute of Technology, 26-231, Cambridge, Massachusetts 02139), C. F. Barnett, Anthony Bernhardt, Gary Bjorklund, Robert Celotta, C. Lewis Cocke, William Cooke, Alexander Dalgarno, Patricia Dehmer, David Herrick, Robert Hill, Albert Lau, William Lichten, Stephen Lundeen, Daniel Murnick, Russel Pack, Thomas Rescigno, John Stoner, Aaron Temkin, and David Wineland
- Nominating Committee: Ronald Stebbings (Department of Space Physics, Rice University, Box 1892, Houston, Texas 77001), Roy Champion, Walter Johnson, and Ivan Sellin
- Fellowship Committee: Ronald Henry (Department of Physics and Astronomy, Louisiana State University, Baton Rouge, Louisiana 70803), Stuart Crampton, Joseph Eberly, Hugh Kelly, and Stephen Smith
- Publications Committee: Eugen Merzbacher (Department of Physics and Astronomy, University of North Carolina, Chapel Hill, North Carolina 27514), John Bjorkholm, C. Lewis Cocke, Edward Fry, Thomas Green, Marvin Mittleman, and David Pritchard

V. CAMS SURVEY OF ATOMIC AND MOLECULAR SCIENCE IN THE UNITED STATES

The report "Survey of Atomic and Molecular Science in the United States 1980-81" describes results of a study by a subcommittee of the Committee on Atomic and Molecular Science (CAMS) of the National Academy of Sciences-National Research Council. The purpose of the study is to establish a quantitative basis for describing the national research effort in atomic and molecular science. The report, based on a comprehensive survey of over 2000

scientists who claim association with the field, outlines the methodology of the survey and summarizes demographic statistics obtained on research discipline (physics, chemistry, engineering, etc.), type of employing organization (academic, government, corporate, etc.), emphasis of research (experimental or theoretical), topic of research specialty, and distribution of time to various professional responsibilities. It reports findings on employment patterns and sources of funding external to the employing organization. The report also includes a qualitative picture of the field which summarizes attitudes concerning its health and concerns expressed by the respondents.

A preliminary draft of the report has been completed and submitted to CAMS for approval. Those who are interested can obtain copies from Jean W. Gallagher, JILA, Campus Box 440, University of Colorado, Boulder, Colorado 80309.

VI. AN INVITATION FROM THE NAS-NRC COMMITTEE ON ATOMIC AND MOLECULAR SCIENCE

As discussed in the October 1981 Newsletter, the NAS-NRC Committee on Atomic and Molecular Science (CAMS) is preparing a report entitled "Opportunities in Atomic and Molecular Physics." CAMS is producing this report to highlight current scientific achievements and future opportunities in the field. The report's primary purpose is educational. CAMS hopes it will be useful and interesting to members of the atomic and molecular science community and to our colleagues in related areas of science, industry, and government. The goal is to portray the variety and vitality of the field and, as the title suggests, its opportunities. The report will not set priorities, nor is it intended to have any direct impact on federal science policy.

In order to obtain as broad a coverage as possible, CAMS seeks help from colleagues in the field. The report will consist of two sections, and DEAP members are encouraged to contribute to either or both.

The first part is to provide a general description of the field, its intellectual challenges, its goals and strengths, and its special contributions. CAMS welcomes your input into this section in the form of written comments. Alternatively, you may wish to contact directly a member of the editorial board to discuss your views. The second, and larger, part provides for a series of short essays on various topics drawn from the field. The success of this part will depend on the quality of these essays, and we earnestly solicit contributions from members of the community.

A number of people have graciously responded to a request to serve on an editorial board to rewrite, condense, and unify the most interesting contributions received. These are Eugene Commins (University of California at Berkeley), Alexander Dalgarno (Harvard), Sheldon Datz (Oak Ridge National Laboratory), Joseph Dehmer (Argonne National Laboratory), Gordon Drake (University of Windsor, Ontario), Joseph Eberly (University of Rochester), Richard Freeman (Bell Laboratories), Jan Hall (JILA), Hugh Kelly (University of Virginia), Daniel Kleppner (MIT), Neal Lane (Rice University), Yuan Lee (University of California at Berkeley), Joseph Macek (University of Nebraska), Frank Pipkin (Harvard), Robert Poe (University of California at Riverside), and Ivan Sellin (Oak Ridge National Laboratory).

Please write or contact any of these individuals you care to concerning the report, preferably with a copy to Ivan Sellin (Building 5500, P.O. Box X, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830). It is our earnest intention to involve as broad a constituency as possible.

A timetable for writing the report is as follows. Between now and the APS Spring Meeting in Washington, members of the editorial board will collect and edit contributions, integrating them with their own. Two two-day writing sessions are planned, one for 29-30 April in Washington and a second for 22-23 May at Williamsburg. It is hoped that final editing of a report in draft form will be complete by the late fall of 1982. Publication and distribution by NAS-NRC is hoped for as soon as practicable thereafter.

VII. DIVISION COUNCILLOR'S REPORT

Ivan Sellin reports the following information of interest to DEAP members from the November 1981 and the January 1982 APS Council meetings.

(1) The prizewinners for the various APS prizes were announced. Those of special interest to members of the DEAP include the following. L. H. Thomas was awarded the Davisson-Germer Prize and was specifically cited for his contributions to the understanding of the spin-orbit interaction in atoms. DEAP members may recall the session of papers held in honor of his work, attended by Thomas himself, at the APS Spring Meeting in 1980. Takeshi Oka of the University of Chicago was awarded the Plyler Prize and was specifically cited for his contributions to experimental spectroscopy, for his contributions to our knowledge of molecules in interstellar space, and for the observation of the infrared spectrum of the H_3^+ molecule. The biennial Broida Prize was not awarded this year.

(2) The results of recent APS elections and committee appointments include the following:

- (a) Mildred Dresselhaus was elected Vice President.
- (b) Ernest Henley was elected chairman of the Nominating Committee.
- (c) Neal Lane was elected Vice Chairman of the Panel on Public Affairs (POPA)
- (d) Robert Poe and Ivan Sellin were elected to three year terms on POPA.
- (e) Ivan Sellin will chair the APS Committee on the Constitution and Bylaws.

(3) A number of changes in the constitution and the bylaws are being considered, some substantive. It is possible the Society may examine options for changing the way in which the Executive Committee is chosen, and may even consider moves to reduce the overall size of the Council, which has grown extremely large owing to the constitutional requirement to appoint a new divisional councillor and a new councillor-at-large every time a new division is formed. DEAP members who have suggestions concerning ways to make such changes are encouraged to write to Ivan Sellin.

(4) A number of financial problems continue. Owing to the high number of non-registrants attending sessions at APS meetings, a preregistration procedure and a fee are being considered. In the meantime, all divisions are

requested to insist on member registration fee payments at all Society meetings.

5) Concerning publication matters, Editor-in-Chief David Lazarus brought up several items. Approximately two-thirds of the Rapid Communications currently being published in the various sections of the Physical Review are originally submitted there. He found this statistic encouraging, inasmuch as it had been feared that too many papers might have appeared there following rejection from Physical Review Letters. Continuing budgetary problems have required the increase of member subscription prices from \$30 to \$37 for Physical Review and from \$35 to \$45 for Physical Review Letters. Increases in member dues and the voluntary contributions are also expected.

VIII. DEAP-SPONSORED SYMPOSIA AT FORTHCOMING APS MEETINGS

APS MARCH MEETING IN DALLAS, TEXAS, 8-12 MARCH 1982

- A. THE NEWEST QUANTUM FLUIDS: SPIN-POLARIZED ATOMS, W. C. Stwalley, organizer (joint with the Division of Chemical Physics).

J. Walraven, "Experiments on Spin-Polarized Hydrogen"

R. Cline, "Recent Advances in Spin-Polarized Hydrogen"

W. Hardy, "Low-Temperature Hydrogen Atom-Surface Interactions"

M. Leduc, "Spin-Polarized ^3He "

- B. SMALL METAL CLUSTERS, J. L. Gole, organizer (joint with the Division of Chemical Physics).

D. M. Lindsay, "Bonding Trends in Matrix Isolated Alkali Metal Clusters"

V. E. Bondebey, "Cryogenic Spectra of Refractory Species: Laser Induced Fluorescence of Small Metal Clusters"

W. H. Gerber, "Theory of Alkali Trimers and Interpretation of Spectroscopic Data"

J. L. Gole, "Photodissociation and Oxidation of Small Metal Clusters"

APS SPRING MEETING IN WASHINGTON, D.C., 26-29 APRIL 1982

- A. SHORT-WAVELENGTH LASERS, J. C. Weisheit, organizer.

R. C. Elton, "Gain Measurements in Plasmas at Short Wavelengths"

C. K. Rhodes, "Direct Generation of XUV Radiation"

S. Suckewer, "Experiments on Soft X-Ray Lasers in PPPL"

J. P. Hannon, "Mossbauer Filtering of Synchrotron Radiation"

APS FALL MEETING IN PHILADELPHIA, PENNSYLVANIA, 3-5 NOVEMBER 1982

- A. ATOMIC AND MOLECULAR ASPECTS OF COMBUSTION RESEARCH, F. J. Kaufmann, organizer.

IX. NATO SUMMER SCHOOL ON ENERGETIC ATOMIC COLLISIONS

There will be a NATO Advanced Study Institute on the topic "Fundamental Processes in Energetic Atomic Collisions" in Maratea, Italy from 20 September to 1 October 1982. The meeting will cover fundamental aspects of atomic collisions, with emphasis on interactions involving eV to MeV energies. The program will include talks on collision theory, atomic photoionization, coherence and correlation effects, decay processes, electron and positron scattering, coupling of the scattered electron and the photon field, Coulomb ionization, excitation by electron capture, quasimolecular processes in ion-atom collisions, spin-dependent interactions, and new trends in atomic collisions. Application for participation should be submitted not later than 15 May 1982 to Professor Hans O. Lutz, Fakultät für Physik, Universität Bielefeld, D-4800 Bielefeld 1, West Germany.