

CSWP GAZETTE

A Newsletter of the Committee on the Status of Women
in Physics of the American Physical Society

December 1985

Volume 5, Issue 4

FOREWORD TO OUR READERS

An article in this issue by Peter Beckmann, Associate Professor of Physics, describes some of the growth and success of the physics department in the predominantly female liberal arts college, Bryn Mawr. I read Professor Beckmann's article after I read about a recent report of a four-year longitudinal study of college students at Stanford University titled *Careerism and Intellectualism Among College Students* by Herant A. Katchadourian and John Boli. The authors identified four distinct types of students—careerists, intellectuals, strivers, and the unconnected—and showed how each type looked at college, made career choices, and faced his or her own set of problems.

According to the authors, women students tended to be categorized as intellectuals more than men. Intellectuals pursued learning for its own sake, had strong high school academic records, and demonstrated high verbal and mathematical ability. Women also valued their undergraduate experience greatly. The authors found also that men and women were equally represented in the strivers' category—students who combined a strong interest in careers with an equal concern for general education. The other two groups—the careerists and the unconnected—were more likely to be male than female. By placing their findings in the context of other large-scale studies of college students, the authors claimed that their results were applicable far beyond Stanford University.

Peter Beckmann's description of the female students he has encountered at Bryn Mawr led me to conclude that the results of the study are applicable there. His article shows how a liberal arts college for women can alter American tradition in such a way that physics can become an attractive career for bright, young, energetic women. The Katchadourian-Boli report indicates that there is no reason why American tradition should not be altered to increase sharply the numbers of young women who enter the physics community.

Joan P. Sullivan Kowalski
Editor

FEATURE ARTICLE

Physics at Bryn Mawr

As a new faculty member several years ago, my first class to teach at Bryn Mawr was statistical mechanics. The four seniors in this class have many stories to tell concerning the education of a new faculty member. Perhaps the best was when I was politely told I was covering the material too slowly. It was to be the last time a class had to tell me that. The physics department at Bryn Mawr is indeed an exciting place to be these days. The friendly relaxed atmosphere is conducive to high quality education and research—two activities which are inexorably entwined at Bryn Mawr. At both the graduate and upper undergraduate level, formal classes and coffee breaks are often indistinguishable. Problem sessions are spontaneous, often drawing all four faculty members and all ten or so graduate students into one office. The number of women interested in physics continues to increase, our graduating seniors are going to the very best graduate schools, and our graduate program is healthy and growing.

Research in the department is stronger than ever. In theoretical physics there are several projects: among them the study of chaotic and fractal systems, the study of nonequilibrium statistical mechanics, the study of photon statistics, and the study of molecular motion in solids. In experimental physics there are two research groups; one doing nuclear magnetic resonance in condensed phases and the other doing laser physics and quantum optics. There are very strong ties with the departments of chemistry and mathematics, with several neighboring institutions, and with several research groups around the world. Undergraduate students, graduate students, and faculty all do research together.

The history of Bryn Mawr College and its physics department is a history of the progress made by women in education and research. The College was founded in 1885 at a time when attending university was part of the Victorian prescription for what women could not or should not do. In 1888, Bryn Mawr offered its first degrees to women; a Ph.D. and a handful of A.B.'s. The department and the institution have been gaining strength ever since. One notable graduate was Katharine Blodgett (A.B., 1917) who discovered the principle of anti-reflection coatings while she worked at General Electric. As of five years ago (which are the latest statistics I have), of all the women listed as members of The American Physical Society, more than 5% had received at least one degree from Bryn Mawr.

From the beginning, Bryn Mawr treated its women and men faculty equally. Today, this small collection of scholars and researchers in the wooded western suburbs of Philadelphia thrives. There are about 150 faculty, 1100 undergraduate women and 350 graduate men and women in the Undergraduate and Graduate Schools of Arts and Science. Of the 24 departments, 19 offer the Ph.D. Bryn Mawr has an unusual number of women in power. Sixty-seven percent of the senior administration is female, including the president of the College, the chief financial officer, the chairman of the board of trustees, and two of the three deans. Forty-three percent of the faculty is female, and women chair fourteen of the twenty-six departments.

Teaching at Bryn Mawr is fun. The students are bright and dedicated. The student-run Self-Government Association, formed in 1892, is the oldest student self-government system in the country. Autonomous from the beginning, its members serve as representatives to meetings of Bryn Mawr's Board of Trustees and Faculties and on all college-wide committees. The College has operated under an academic and social honor system since 1954 and the success of the Honor Code reflects the high standards which have remained intact throughout the history of the College.

In physics, the first year class is about 100 strong. The students range from potential physics majors to curious senior English majors who have been enchanted and captivated by Bryn Mawr's dedication to breadth. The faculty rotate the teaching of this class and everybody loves it. At the upper undergraduate level the classes are very small and there is a strong emphasis on laboratory experience, including machine shop and glassblowing. The letters coming "home" from alumnae doing graduate work elsewhere suggest that our philosophy of strength in the major within the confines of a broad liberal arts education is very effective and highly successful.

The physics department at Bryn Mawr has two inseparable histories: a commitment to raising the status of women and the progress women have made in research and education. With the foundation of the university firmly rooted, Bryn Mawr continues to provide undergraduate women with strength in the major coupled with a liberal arts education and graduate men and women with a sound and usable Ph.D. By maintaining high standards, combined with the necessary changes that keep the institution alive and contemporary, the department remains competitive at all levels of education and research.

Peter Beckmann

AWARD ANNOUNCEMENTS

Laura Eisenstein Award

The department of physics of the University of Illinois at Urbana-Champaign, in cooperation with The American Physical Society Committee on the Status of Women in Physics (CSWP), is proposing to establish an annual Laura Eisenstein Award. This award is established primarily to encourage women to undertake studies leading to a degree in Physics. To that end, we will recognize that woman who has achieved academic excellence in her undergraduate studies. However, the criteria are flexible in order to recognize alternatively a woman pursuing a graduate degree in physics who distinguishes herself in teaching or research.

The head of the department of physics, in cooperation with the then current chair of the Committee on the Status of Women in Physics, shall establish a committee to select the winner. The award will be presented at the first Department of Physics Colloquium in February with all relevant information forwarded to CSWP for publication.

The amount and term of this award will be based upon the donations received. If the total donations meet the University of Illinois Foundation's minimum of \$10,000 over a three- to five-year period an endowed fund will be established with the income to be used for an annual award.

Tax-deductible contributions should be made payable to UIF Excellence in Physics—Laura Eisenstein Award and sent to Steven M. Keen, Department of Physics, 203 Loomis Laboratory of Physics, University of Illinois at Urbana-Champaign, 1110 West Green Street, Urbana, IL 61801.

Science Scholars Fellowship Program

Radcliffe College has recently received a four-year renewal grant of \$467,295 from the Office of Naval Research to support the work of 16 science fellows beginning 1 July 1985, through the Science Scholars Fellowship Program of the Mary Ingraham Bunting Institute, established in 1960 as a multidisciplinary Institute for artists, scholars, writers, and scientists "to assist in the development and utilization of the highest capabilities of educated women." The Science Scholars Fellowship offers a yearly stipend of \$20,000 plus research expenses in addition to office space, auditing privileges, access to libraries and other resources of Radcliffe College and Harvard University, and informal association with other highly motivated professional women of varying disciplines. Tenure of the fellowship may be for one or two years depending on the nature of the proposed study and/or laboratory affiliation. Residence in the Boston area during the course of the Fellowship is required.

The Science Scholars Program is open to any woman in the physical, mathematical, environmental, engineering, biological, and

psychological sciences at any stage of her career provided she has received the doctorate at least two years prior to the Institute appointment. She may be a faculty member or researcher in an industrial or academic laboratory. Recipients of Science Scholars Fellowships commencing 1 July 1985 are:

Prof. Kay Kinoshita, Experimental Elementary Particle Physics,
Harvard University
Project Title: "Heavy Particles: Search and Study"

Prof. Marcia K. McNutt, Earth Science, Massachusetts Institute of
Technology
Project Title: "The Relationship Between the Mechanical Strength
of Continents and the Formation of Mountain Belts"

Prof. Barbara Peskin, Mathematics, Mount Holyoke College
Project Title: "An Examination of Quotient Singularities in
Characteristic p "

Prof. Llewellyn Hillis-Colinvaux, Marine Biology, Ohio State
University
Project Title: "Biogeography and Systematics of Calcareous Green
Reef-building Algae"

Dr. Sarah Damassa, Polynology, Polynology Consultant
Project Title: "The Early Fossil Record of Planckton"

Congratulations to all these women!

Applications for Fellowships to commence 1 July 1986 are currently being accepted. An application packet may be obtained by calling or writing:

Fellowship Program
The Bunting Institute of Radcliffe College
10 Garden Street, Cambridge, MA 02138
Telephone: (617) 495-8212

AWARD WINNERS

Sandra M. Faber Wins 1985 Dannie Heineman Prize for Astrophysics

New York, NY—Sandra M. Faber, an astronomer and professor at Lick Observatory, University of California, Santa Cruz, has won the 1985 Dannie Heineman Prize for Astrophysics. The joint American Institute of Physics (AIP)—American Astronomical Society (AAS) annual prize will be formally awarded to Professor Faber at the January 1986 meeting of the AAS to be held in Houston, Texas. The \$5000 prize will be presented along with a certificate that will bear the citation: "By her spirited observational approach Sandra Faber has much enriched our knowledge of the basic characteristics of galaxies. By the insight thus gained she has substantially advanced the theory of galaxy evolution."

Funding for this award has been provided by the Heineman Foundation for Research, Educational, Charitable, and Scientific Purposes. Dannie N. Heineman was an American engineer and philanthropist who spent most of his career in Belgium as head of SOFINA, an engineering management and holding company that played an important role in the development and management of public utilities in Europe, the Near East, and in Central South America.

Jenny Rosenthal Bramley Receives WISE Award

Jenny Rosenthal Bramley, an IEEE Fellow internationally recognized for her work in physics, has received the first Women in Sci-

ence and Engineering (WISE) Lifetime Achievement Award. Established by the National Science Foundation, the award recognizes scientific and technical contributions of women scientists and engineers in Federal service.

Throughout her 50-year career, Bramley has written 54 papers and received 18 patents. She is one of only 15 women to be named IEEE Fellows.

Bramley frequently attends Chapter meetings to encourage women to pursue careers in engineering and science.

She told The Institute, "I am pleased that the number of women entering the field continues to increase. I had terrible difficulty finding my first jobs. Companies told me they only hired women as secretaries. The University of Illinois would not let me teach there, since 90 percent of the students were men."

Bramley commented that both men and women engineers receive greater consideration now. However, she added, many families still discourage girls from pursuing technical careers.

FOR YOUR INFORMATION

A recent study by Stanford University's Institute for Research on Educational Finance and Governance reveals that men hold far more managerial and professional-technical positions in the high tech industry than women do. The study supports data from the University of Massachusetts which found that women in high tech jobs earn 55¢ for every dollar earned by men. Source: *The Bellwether Report*, August 1985

The following materials are available from the APS office. The first category is intended for junior high school, senior high school, and young college females. The second category is of interest to females preparing to enter a career in physics or already in the field.

- I. CSWP career materials available from APS office.
 1. *Physics in Your Future*. Our most recent publication. Still in print. Aimed at attracting junior high and early high school students to physics.
 2. *Women in Physics*. Out of print and outdated. Will be revised along the same lines with new personalities during the coming year. Addressed to high school and college women already considering the possibility of a career in physics.
 3. *Wanted: More Women in Science and Technology* (pamphlet). To be updated (primarily salary information) and reprinted immediately. To be made available in physics department offices and high school and college libraries.
 4. *Wanted: More Women in Science and Technology* (package). Aimed at students and their teachers and counsellors. A limited number of copies still available. A major revision will be undertaken in the summer of 1986, possibly combining the three booklets into one.
 5. Bibliography of Career Material. Recently updated. To be issued in printed form.
- II. Other materials.
 1. The tenure process for female and male physicists, I. Frieze *et al*.
 2. Letter from Prof. Margaret Cavanaugh together with tables and figures summarizing study of the tenure process for women and men in chemistry.
 3. Women in Science; the role of the Department Chair, R. M. Price.
 4. Letter from R. R. Wilson, President of the APS to Physics Department chairs. The analysis of responses to the questionnaire, together with summaries of items 1-3 above will be pub-

lished in a forthcoming issue of *Physics Today*. Please do not reproduce or quote from these items without permission of the authors.

5. Relevant issues of the Committee Newsletter, the *CSWP Gazette*, some of which summarize the above and earlier studies.

6. Report on Women in Scientific Careers at CERN, M. K. Gaillard. A comprehensive study of U.S. women in physics is currently being carried out by Dr. R. Genovese and Dr. S. Fava at CUNY.

In July 1985 Lawrence Livermore National Laboratory announced plans to offer a child care facility for children of its employees. Plans include locating the child care facility in two areas of a school presently leased from the Livermore School District and occupied by plant engineering employees. Although the Lab will provide the facility, and maintenance and operations costs, all other costs will be shared by participating parents. The child care center will be operated as a non-profit organization under the Laboratory's Recreation Association, and guided by an Advisory Board made up of 12 employee parents who were among 200 employee parents who volunteered to serve on the board. A survey was sent to employees to determine the interest in such a facility. Survey results showed that 69 percent of those who responded said they would enroll their children. Source: *Weekly Bulletin*, 17 July 1985, *Lawrence Livermore National Laboratory*

POSITION OPENINGS

Environment, Technology, and Society Clark University

We invite applications for a tenure track faculty position in the Program on Environment, Technology, and Society (ETS). The program has 11 faculty members appointed in ETS, Biology, Chemistry, Economics, Geography, and Physics; supports an undergraduate major; and offers an M.A. degree in either Environmental Affairs or Technology Assessment and Risk Analysis. To complement present strength, we seek applicants who have research interests and experience that include background in the physical or life sciences, or technology. Areas of special interest include environmental impact analysis, technological risk assessment, occupational health and safety, and technology assessment. Candidates from other closely related research areas will be considered. Promise of excellence in teaching and strong research performance are expected from the successful candidate. The rank of the position is Assistant or Associate Professor. Please send a resume, the names of three references, and a brief letter outlining research and teaching plans to Roger Kasperon, Chair, Search Committee, ETS Program, Clark University, Worcester, MA 01610. Clark is an affirmative action employer. Application deadline is 6 January 1986.

Assistant Professor of Physics Southern Connecticut State Univ.

PHYSICS, assistant professor. **QUALIFICATIONS**: Ph.D. in experimental physics, knowledge of computer-oriented applications, and an interest in teaching and developing undergraduate courses for physics majors and liberal arts students. Some research activity desirable. Position available September 1986. Send resume and names of references by 28 February 1986 to Dr. Eric V. Sandin, Chairman, Department of Physics, Southern Connecticut State University, 501 Crescent St., New Haven, Connecticut 06515, Attn: DEC. AA/EOE.

MARCH MEETING IN LAS VEGAS

After the largest March Meeting ever, last year in Baltimore, the 1986 March Meeting will go west to a first time destination, Las Vegas, Nevada. The meeting will run from 31 March—4 April 1986, and will be held at the MGM Grand Hotel.

The MGM will hold all of the technical sessions, as well as reserv-

ing sleeping rooms at the attractive rate of \$68 per night, single or double occupancy. These reduced rates are extended a few days before and after the meeting. The executive office of the APS has agreed to handle a Roommate Referral Service for the meeting on a trial basis. Information about hotel reservations is in the November *Bulletin*. Information about reduced airfares will be in the January *Bulletin*.

MARCH MEETING OF THE AMERICAN PHYSICAL SOCIETY

ROOMMATE REFERRAL FORM

Please print or type

Name: _____

Affiliation: _____

Address: _____

City: _____ State: _____ Zip: _____

Date of Arrival: _____ Date of Departure: _____

Please check where appropriate

- Smoker Male
- Non-Smoker Female
- Would Room with a Smoker

Please specify any special requests: _____

Please return this form no later than 21 February 1986 to: Mr. James Spellos, American Physical Society, 335 East 45th Street, New York, NY 10017.

**The American Physical Society
335 East 45th Street
New York, New York 10017**

