

state & society

Scientist-Congressman studies priorities for energy R&D

In mid-May six days of hearings on energy research and development were held before the House Subcommittee on Science, Research and Development, headed by John W. Davis (D-Ga.). Those testifying included energy experts from industry, government and universities. Leading off the testimony was former Presidential Science Adviser James Killian (MIT). Other academic speakers were David C. White, David Rose and Manson Benedict (all of MIT), Bernd Matthias (University of California at La Jolla) and Chauncey Starr (UCLA).

The Davis Subcommittee had become immersed in the subject of energy R&D last year when a Task Force on Energy was created by George P. Miller (D-Calif.), chairman of the parent Committee on Science and Astronautics. Heading the Task Force is Mike McCormack (D-Wash.), the only scientist in Congress.

Recently we visited McCormack in his office in the Longworth Building. We discussed the activities of the Task Force, a timetable for energy innovation, and the need for a national energy agency.

Although a freshman Congressman, McCormack's twenty years as a chemist at AEC's Hanford, Washington installation (working on separations chemistry and fission gas isolation in high-level radiation systems) makes him uniquely qualified to head the Task Force. Assisting him are two physicists, J. Thomas Ratchford, who is science consultant for the parent committee and has worked in solid state, and John Andelin who has worked in low temperatures.

Since last August the Task Force members have met almost weekly and received briefings from energy R&D experts from the Federal Government, scientific organizations, professional societies, university research groups and industry. Recently the Task Force published an *Inventory of Energy Research*, which McCormack characterizes as incomplete in many ways, but nonetheless the most comprehensive available guide to the energy research being carried out in the US.

In the 91st Congress responsibility for energy legislation was spread among two Joint Committees, seven Senate Committees and five House Committees. Within the Executive branch, the Office of Science and Technology, the Federal Power Commission, the Office of Emergency Preparedness, the Department of Interior, NSF, NASA, TVA, AEC and Bonneville Power Administration all have some responsibility in energy-related matters.

When the Task Force started its work, McCormack said, there was a certain apprehension in the minds of some Congressional leaders about how much they would upset the status quo. "By maintaining a rather low profile and doing our homework and working ten times as hard as anybody else we have gained credibility and acceptance."

Through the Subcommittee hearings McCormack hopes to be able to awaken the consciousness of Congress and the public to the energy crisis, which

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McCORMACK

Discrimination against women in physics

Women physicists experience discrimination, and steps should be taken to end this, concludes a report just published by the APS Committee on Women in Physics in the June issue of the *APS Bulletin*.

Upon recommendation of the committee, the APS Council has agreed to send a letter about women to 182 PhD-granting departments, 141 departments with a major ending with the master's degree, 69 technical institutes, 112 industrial firms and 42 government laboratories (see box).

The committee has also compiled a roster of women physicists, which has 1127 individuals. Of them 451 have PhD's; this can be compared with 347 PhD's out of the 1354 women physicists in the 1970 National Register of Scientific and Technical Manpower. The roster is available for \$5.00 per

copy from the Placement Service, American Institute of Physics, 335 E. 45th St., New York, N.Y. 10017.

Chairwoman Vera Kistiakowsky (MIT) divided the 15-member committee into working groups on colleges, government and national laboratories, industry, universities, roster and recommendations. These groups conducted their own surveys and in addition consulted sources such as the National Research Council's Doctorate Records File. In addition special computer runs were conducted on the data in the National Register. All of this work was made possible by a \$10,000 grant from the Sloan Foundation.

One of the questions asked by the committee was what percentage of PhD women left physics. By comparing the National Register and the NRC Doctorate Records File for persons with 2-35

APS Council Letter on Women

TO: Employers of Physicists
FROM: The Council of the American Physical Society

The Council of the American Physical Society, at its meeting, April 1971, established a Committee on Women in Physics to consider the problems particular to women physicists and to submit a report by February 1972. In this report, the Committee gave evidence of discriminatory practices against women; for instance, lower salaries for comparable jobs and experience, slower promotion rate, and almost complete absence from high-level positions, whether faculty, administrative or managerial. On the basis of this report, at its February 1972 meeting, the Council endorsed the following recommendation:

"The Council of the American Physical Society urges all physicists to press for equal acceptance, equal recognition, equal employment opportunity, equal advancement and equal salaries for physicists of equal ability and accomplishment, without regard to sex. Furthermore, the Council urges that physicists in academic institutions encourage qualified women students to continue in physics, grant them financial assistance on the basis of ability, and recommend them for postdoctoral employment. Finally, the Council urges that all physicists support the implementation of solutions to the practical problems unique to women physicists."

We urge you to do all in your power to help implement this resolution.

We ask that you examine whether or not your Organization has established an effective, active program to insure that the policies and attitudes regarding the hiring of women physicists, their subsequent treatment, and their promotion to senior and managerial positions are in accord with the principles stated above. If not, we urge that your Organization establish such a plan.

We urge you to consult the recently compiled Roster of Women Physicists when seeking qualified employees. It is available on request from the AIP Placement Service.

We wish to bring to your attention several wide-spread employment practices which the Committee's report shows many women physicists find discriminatory. It is clearly proper that organizations set reasonable restrictions on the possibility of an individual functioning as judge or advocate in the hiring or promotion of members of his family, but we believe a blanket administrative rule that forbids two members of the same family to serve as colleagues is unnecessary and discriminatory. We ask that you examine whether or not your Organization has anti-nepotism rules. If it does, we urge that your Organization replace them by Conflict of Interest rules.

The report indicates that many women physicists desire more flexible attitudes on the part of employers to ease the combination of family responsibilities and professional commitments. We urge that your Organization make senior appointments and tenure available to persons other than those giving full-time service and that both men and women be eligible for such appointments. We urge, further, that a reasonable amount of maternity or paternity leave be granted without loss of employment, fringe benefits or seniority.

On the recommendation of the report of the original committee, the Council voted to establish a Committee on the Status of Women in Physics for 1972. We urge you to address any questions or problems concerned with this issue to this Committee.

years of experience, they found that 94% of the men remained in physics and 80% of the women; this is considered a lower limit for the women because the Register does not contain at least 15% of the women that are in the roster.

From the roster the committee learned that 11% of the PhD women were unemployed and seeking employment. Among those women employed, more are in educational institutions and a significantly lower percentage are in industry. As far as salaries, women earned less for all degree levels and all types of employers.

One of the Committee's recommendations was that the roster be used by the officers and divisions of APS to identify qualified women for committee membership, presenting invited papers, chairing sessions, nomination for division and society elective offices, selection for division and society appointive

offices, and advancement to fellow. The council approved this recommendation, and it appears to be showing its effectiveness already.

The Committee also recommended that when its term ended, at the annual meeting in San Francisco, that a Committee on the Status of Women be established. This three-member committee, headed by Elizabeth Baranger (MIT), is continuing the work of the Kistakowsky group.

—GBL

Kitt Peak rocket program for outside scientists

The Kitt Peak National Observatory's 170 Aerobee rocket program is open to scientists outside of the observatory. The observatory provides the rocket, auxiliary systems, launch support and the help of the engineering staff. Sci-

entists interested in using these facilities are encouraged to submit a research proposal, allowing for a lead of 12 months. Further information may be obtained from Leo Goldberg, director, Kitt Peak National Observatory, 950 North Cherry Ave, P. O. Box 4130, Tucson, Ariz. 85717.

Energy R & D

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he says "is deeply intertwined with such problems as the avoidance of a major war, of population control and the protection of our environment."

He notes that there is a tendency to evade the question of cost for energy R&D. Total energy production, transmission and utilization is a \$100 billion/year industry. The Electric Research Council estimates that the R&D needed over the next 30 years for the electric utility industry is more than \$30 billion, which represents about 1% of the industry's projected revenue in that period. By comparison McCormack cites the aerospace industry, which spends about 16% of its sales on R&D.

Although McCormack would like to see an official governmental energy policy, in the meantime he is enunciating one himself, laying out a list of priorities. Right now we must rely on existing conventional sources until nuclear power becomes more prevalent, he says. At the same time we might be able to develop geothermal energy regionally. In 1980 he expects coal gasification to be available. By 1985 he envisions the breeder reactor coming in. He also expects terrestrial solar energy to be important by 1985 or 1990. In the distant future, say the year 2000, he expects satellite solar power and fusion reactors.

McCormack would like to see an energy agency, which would contain those components of the AEC that relate to energy. We asked how McCormack expects the Joint Committee on Atomic Energy or any of the other 14 Congressional committees to give up its power. He doesn't know, but he feels it must be done. The Department of Natural Resources proposed by President Nixon would probably receive Congressional acceptance if it were separated from the other proposed reorganizational changes, he believes.

Throughout the interview McCormack demonstrated a detailed, informed knowledge of technical matters. He proudly showed us a nuclear-driven clock, which is fueled with a promethium-147 beta cell; beta particles from the decay help to drive an Accutron clock. McCormack says he probably helped purify the promethium