

PHYSICS and SOCIETY

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PHYSICS AND SOCIETY is a quarterly newsletter of the Forum on Physics and Society, a division of the American Physical Society. The newsletter is distributed free to members of the Forum and also to physics libraries upon request. It presents news of the Forum and of the American Physical Society and provides a medium for Forum members to exchange ideas. PHYSICS AND SOCIETY also presents articles and letters on the scientific and economic health of the physics community; on the relations of physics and the physics community to government and to society, and the social responsibilities of scientists. Contributions should be sent to the Editor: John Dowling, Physics Department, Mansfield State College, Mansfield, PA 16933, 717-662-4275.

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**FORUM ON PHYSICS AND SOCIETY OFFICERS
AND EXECUTIVE COMMITTEE FOR 1983**

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Nina Byers (Jan. 1983-Jan. 1985)
Department of Physics
University of California at Los Angeles
Los Angeles, CA 90024 (213)-825-3588.

Elected To Executive Committee:

Bernard R. Cooper (Jan. 1982-Jan. 1984)
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Morgantown, WV 26506 (304)-293-3423.

Ernest C. Hammond, Jr. (Jan. 1982-Jan. 1984)
2514 North Longwood St.
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University)

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Natalia Meshkov (Jan. 1983-Jan. 1985)
Chemistry Department
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FORUM Representative to APS Committee on the Intellectual Freedom of Science

John Parmentola
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Cambridge, MA 02139 (617)-253-4801.

JOIN THE
FORUM
on physics and society
of the American Physical Society

Membership free to APS members,
Please write Dietrich Schroerer at the above indicated address.

MINUTES of the EXECUTIVE COMMITTEE Meeting FORUM on Physics and Society, January 25, 1983.

The Executive Committee meeting was called to order by Nina Byers at 3:30 p.m. on Tuesday, January 25, 1983 in Room 540 of the Hilton Hotel in New York, NY. Executive Committee members present were Nina Byers, Barry (Mike) Casper, William Chinowsky, John Dowling, Kenneth Ford, Ernest C. Hammond, Jr., Dietrich Schroeer, and Brian Schwartz. Other persons attending included V.A. Dulock, Jr., Theodore Kruse, Joseph Luch, Neal F. Lane, Mark Sakitt, Leo Sartori, and Peter Zimmerman.

1. Report of the Secretary

The minutes of the April 26, 1982 meeting of the FORUM Executive Committee were approved.

2. Announcements by the Chairman

(a) The new members of the Executive Committee were announced. On January 28, Leo Sartori becomes Vice Chairman, Caroline Crannell, Natalia Meshkov and Thomas Moss will become members of the Executive Committee, while Robert Adair became the second APS Council representative on January 1, 1983.

The Forum Award for 1983 goes to the *Bulletin of the Atomic Scientists*, Ruth Adams, Editor, while the Szilard Award goes to Andrei Sakharov. Ms. Adams has agreed to speak at the awards session at the April APS meeting in Baltimore; an invitation to speak at that session has been extended to Dr. Sakharov, if he cannot come then Andrew Sessler will honor him with a talk on "Sakharov and Society" while his daughter will accept the award on his behalf. John Dowling asked for clarification on whether the Forum Award must go to physicists or scientists; the next awards committee will be clearly instructed on this point.

(b) Neal Lane, the present chairman of the APS POPA committee, was asked to discuss links of POPA with the Forum. He reviewed the debate about a possible exchange of officers between these two committees to forge closer ties. The POPA steering committee indeed has approved an ex officio exchange of officers on the vice president level. Dietrich Schroeer moved and Ernest Hammond seconded:

Motion No.1: The FORUM Executive Committee approves that the POPA vice-president (or a representative) be accepted as an ex officio (non-voting) member of the FORUM committee, and in turn accepts the offer to send the FORUM Chairman (or a representative) to POPA meetings as an ex officio member.

This motion was unanimously approved.

(c) Nina reported that the APS Council has allocated up to \$2000 to cover expenses of the FORUM arms-control study groups. Further the Council has approved for fiscal 1982-83 (August 1982-August 1983) a one-time subsidy for the FORUM to help cover its extensive expenses for the FORUM newsletter and to make possible some travel subsidies. This subsidy is \$2000 more than the \$1500 allocated in FY 1981-82.

3. Program Report

Vice Chairman William Chinowsky reported on future FORUM sessions. Four programs are planned for the April meeting in Baltimore: the awards session chaired by Nina Byers, a session organized for the Committee on International Freedom of Science by John Parmentola, a session on Women and Minorities in Science organized by Ernest Hammond and Caroline Herzenberg, and contributed session chaired by Victor Teplitz. Two programs are planned for the March meeting on Education and on The Arms Race.

4. Treasurer's Report

With the \$3,500 subsidy by the APS Council for FY 1982-83, the FORUM has halted its slide toward "insolvency" and can consider some limited travel subsidies for speakers and for attendance of "vital FORUM executives" at committee meetings. Should clear and rigid policies be established? Ken Ford and Brian Schwartz favored overall limits on expenditures by categories, but felt that limits on individual trips are not desirable. The general consensus seemed to be against too much rigidity. Brian Schwartz reminded everyone that one can sometimes partially defray travel costs by having local FORUM members organize colloquia for one to present. William Chinowsky briefly raised the question whether a single Executive Committee meeting during the year, rather than the present two, might solve some of the travel-cost problems? Nina Byer moved, and Mike Casper seconded

Motion No.2: William Chinowsky (as FORUM Chairman), Leo Sartori (as Vice Chairman and Program Chairman), and Dietrich Schroeer (as Treasurer) should form an ad hoc committee to digest the discussion on possible travel funds, develop some policies, and report these policies to the Executive Committee.

The motion passed unanimously.

5. Second Short Course on the Arms Race

Dietrich Schroeer reported on the status of the FORUM's Second Short Course on the Arms Race for April 17, 1983 at the Baltimore meeting. The program is essentially set, and the advertising for it is in full swing. The program will be published as one of the series of AIP PROCEEDINGS.

6. Newsletter Editor's Report

John Dowling reported on his past year's activities as editor of the **FORUM** Newsletter. He called attention to the Treasurer's report that listed the cost of last year's four newsletters. All costs are going up even though we are trying to cut costs whenever possible. Brian Schwartz suggested asking all free subscribers (primarily libraries) for a donation. John will do this.

7. Publications Report

Ken Ford reported on publications by the **AAPT** of **FORUM** Proceedings. One has been done and has sold 200 copies so far, a second of Forum Awards talks is being completed, and a third on Alternative Energies from the San Francisco meeting may still be revised. Marketing problems were briefly discussed on how to bring the books to the attention of people teaching nuclear war courses. Mike Casper has such a list. William Chinowsky announced that the APS is recording sessions. Transcribing is difficult. Brian Schwartz, John Dowling, and Ken Ford should discuss this further with the AAPT. The **FORUM** could use more members; we are second to the Division on Condensed Matter.

8. Forum Councillor's Report

Mike Casper announced his resignation as Forum Councillor. He wrote his letter of resignation to Robert Marshak and gave copies to the Executive Committee (see page 6). He disagreed so strongly with the APS Council's statement on Nuclear Weapons and Nuclear War that he felt he had to resign. Mike's reasons for resignation were that although the preamble of the APS statement was very strong, the operative clauses were not. He read the APS statement and then his rejected substitutions. He thought the APS Council failed in its obligations and/or opportunities. Having failed to get the Council's attention, he wants to be replaced as he no longer wishes to serve on the Council.

Many Executive Committee members urged Mike to reconsider, stressing his value and particular contributions he has brought to the job. Several wished Mike had discussed the intent to resign with the Executive Committee before he actually resigned. There was some discussion as to whether this act reflected on the **FORUM**. William Chinowsky summarized the event as follows: Our **FORUM** Councillor, Barry (Mike) Casper, presented his resignation letter to the Executive Committee of the **FORUM** at the meeting of January 25th, 1983. Since it came rather late during the meeting and many members were not present, the letter is being circulated to the members.

9. Other Items

Nina Byers brought an International Call to Halt the Nuclear Arms Race to the attention of the **FORUM** and asked that it be placed in the **FORUM** Newsletter. Meeting adjourned at 6:40 p.m.

Submitted February 14, 1983

Dietrich Schroerer, Secretary/Treasurer APS FORUM, Department of Physics and Astronomy 039A, University of North Carolina, Chapel Hill, NC 27514.

P.S. Items 6-9 come to you courtesy of John Dowling.

NEWS OF THE FORUM

Forum Elections The Nomination Committee for Forum Elections for 1983 is chaired by Mike Casper, Physics Dept., Carleton College, Northfield, MN 55057. The committee wants input as soon as possible, but before May 31st. Please write Mike or call him at 507-663-4121 with any suggestions or nominations you may have (yourself included). More important, please vote in the Fall. Ballots are distributed with the October issue and should be returned by 1 November 1983. Last year about 25% of **Forum** members voted.

Forum Awards The Nomination Committee for Forum Awards for 1984 is chaired by Joe Lach, Fermilab, P. O. Box 500, Batavia, IL 60510. Please write him or call 312-840-4103 with your nominations. The Forum Award recognizes outstanding accomplishments in the endeavor to promote public understanding of issues involving the interface between physics and society. The Szilard Award recognizes outstanding accomplishments by a physicist in promoting the use of physics for the benefit of society in such areas as the environment, arms control and science policy.

Forum Sessions at Baltimore There is lots in store for the Spring 1983 Baltimore APS Meeting. First there is the Second Short Course on the Arms Race on Sunday, April 17th (see page 12 for full details). There will be a contributed papers session on Tuesday morning. Tuesday evening there will be the Forum Awards session.

The final session is the Forum Symposium on **Women and Minorities in Science: A Perspective**. 20 April 1983, 2 PM, session HD, Room 310, Baltimore Convention Center.

Lilli S. Horning, Executive Director of Higher Education Resource Services at Wellesley College, "Antecedents of Occupation Segregation in Science"

Representative Parren J. Mitchell of Maryland's 7th Congressional District, "Black Americans — The Untapped Resource for Scientific Progress"

Margaret W. Rossiter, Program Director of History and Philosophy of Science Program Division of Social and Economic Sciences, NSF, "What can the History of Women and Minorities in Science Tell Us?"

John B. Slaughter, Chancellor of University of Maryland College Park, "The Future of Women and Minorities in Science and Technology."

Executive Committee Meeting There will be an Executive Committee Meeting of the **Forum** immediately after the **Forum** contributed Paper Session on Monday morning. Time and place of this meeting will be announced at the Contributed Paper Session.

FORUM STUDIES ON NUCLEAR WEAPONS, ARMS CONTROL AND DISARMAMENT BY Leo Sartori, Univ. of Nebraska, Lincoln, NE 68588.

The July 1982 issue of **Physics and Society** contained a call for volunteers to participate in a **FORUM** sponsored program of studies related to nuclear weapons, arms control and disarmament. A similar letter appeared in **Physics Today** in August.

In response to these calls nearly 100 individuals have volunteered. The steering committee has organized five groups to carry out feasibility studies which will, we hope, lead to full fledged studies. The topics under consideration and the coordinators of corresponding study groups are as follows:

1. Vulnerability - this is a merger of the topic previously called "biased errors -window of vulnerability and reliability of large scale systems." Coordinator: Peter Zimmerman, Louisiana State University, Baton Rouge, LA 70803.

2. Verification - Coordinator - Dietrich Schroerer, University of North Carolina, Chapel Hill, NC 25714 (919-962-3019).

3. Proliferation - Coordinator - Dr. L. C. Hebel, Xerox, Palo Alto Research Center, Palo Alto, CA 94304.

4. Electromagnetic Pulse - Coordinator - B. R. Cooper, W. Virginia University, Morgantown, WV 26506 (304-293-3423).

5. Civil Defense - Coordinator - John Dowling, Mansfield State College, Mansfield, PA 16933 (717-662-4275).

Each of the five groups is at work and progress reports will be presented at the Baltimore Meeting in April. Following the reports there will be an open discussion on plans for a future course for the program, including a possible get-together during the summer. In addition to the five group studies, we have organized a working group on "international Physics and Arms Control" under the leadership of Eric Fawcett, University of Toronto, Toronto, Ontario M5N 1X5.

I am pleased to report the APS Council has expressed its strong support for our project and has allocated a small sum to cover incidental expenses for feasibility studies. It is not too late for interested individuals to join study groups. If you are seriously interested in participating, please contact the appropriate coordinator directly, with a copy to me.

If you responded to my initial call but have not been assigned to a study group, it is because the topics which you expressed interest in did not elicit sufficient response to constitute a "critical mass" in the judgment of the steering committee. You are welcome to join one of the existing groups if you wish.

APS Councillor's Report by Mike Casper, Carleton College, Northfield, MN 55057

Certainly the most important thing of interest to the **Forum** was the adoption by the APS Council of a statement about nuclear weapons and nuclear war (see page 8 of this newsletter). From one perspective the Council has come a very long way in issuing this statement, but I feel that the contents of the statement represent a lost opportunity. In fact I felt so strongly about this that I decided I must resign from the Council. I explain my reasons in the letter of resignation from Council, the text of which follows:

An Open letter to:
 Dr. Robert E. Marshak
 President, American Physical Society
 c/o American Physical Society
 335 E 45th Street
 New York, New York 10017

Dear Bob:

It is after much agonizing and with deep regret that I write this letter. As a matter of conscience I feel I must resign from the American Physical Society Council. Given the historical role of physicists in creating nuclear weapons, we, as physicists, have both the opportunity and the responsibility to assume leadership in seeking a way out of the dangerous predicament those weapons have produced. I believe our action at the January 23 Council meeting represents both a failure to appreciate our opportunity and a failure to assume our responsibility.

At the meeting I tried to explain why I believe what we physicists do about this issue at this time is so important. Perhaps my explanation was inadequate; let me try to elaborate. One cannot ignore the historical and political contexts in which we act. First the history: Physicists created the atomic and hydrogen bombs and staffed the nuclear weapons laboratories and our profession has clearly profitted from its association with those weapons. In the 1940's and 1950's, perhaps it was plausible for the physicists who built them to hope that nuclear weapons might be instruments of peace. In the 1960's and early 1970's, perhaps it was plausible for the physicists who advised the White House and the Pentagon to hope that "arms control" could stop the nuclear arms race and reduce the possibility of nuclear war. But it has not worked out the way we hoped.

That is clear from the preamble to our January 23 APS Council resolution, which does a very good job of describing how dangerous the world of the 1980's has become. It points out that the global stockpile of nuclear weapons today "contains the explosive power of more than one million Hiroshima bombs"; "a general nuclear war would kill hundred of millions of people"; and "the aftereffects of general nuclear war are certain to be catastrophic for the survivors and could destroy civilization." The preamble further notes that the "nuclear arsenals of the United States and the Soviet Union are more than adequate for deterrence; and moreover, the continuation of the nuclear arms race will not increase the security of either superpower."

Though eloquently stated in our preamble, this information will probably not be news to most citizens. Recognition of the danger of a nuclear holocaust that could destroy civilization and the futility of a nuclear arms buildup that does not advance security has

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already moved millions of Americans to act. A powerful social movement, dedicated to stopping the arms race and preventing nuclear war has emerged in the United States. As a minimal first step, this movement is calling for a halt to the arms race through a mutual, verifiable nuclear weapons freeze. In view of the facts presented in our preamble, this hardly seems a radical proposal.

The Reagan Administration has responded with a proposal to the Soviet Union at the Strategic Arms Reduction Talks (START) that ostensibly calls for a reduction in nuclear arms, not just a freeze. However, as many strategic analysts have pointed out, the Reagan proposal is not really a serious negotiating position at Geneva; rather it is an attempt to counter the growing popularity of the freeze movement in the United States. Although it masquerades as a call for reduction in nuclear arms, the current Reagan proposal is really a prescription for continuing the arms race and building new strategic weapons and delivery systems that the freeze proposal would stop.

This is the political context in which our resolution will be received. For the first time since nuclear weapons were built in World War II, there is a serious possibility that the nuclear arms race can be blunted and reversed. The anti-nuclear war movement has already received critically-needed authoritative support from several quarters, most notably from the medical community and from church leaders. The Catholic bishops' statement next May is likely to be very influential. Because of the close and continuing association of the physics fraternity with nuclear weapons since their creation, if we were to speak out with wisdom, people would listen.

That was the opportunity we had in endorsing a resolution about nuclear war at our meeting last Sunday. But we did not speak with wisdom; we did not

provide leadership. For instance, we refused to speak directly to the freeze proposal, a measure which I am confident a substantial majority of the physics community supports. Instead we waffled, calling urgently for an intensification of efforts, without preconditions, "to achieve an equitable and verifiable agreement between the United States and the Soviet Union to limit nuclear arms and to reduce significantly the number of such weapons and delivery systems."

I personally have no quarrel with that laudable goal, but in the present political context such a statement is at best irrelevant--it provides no real guidance (aside from the subtle phrase, "without preconditions") for people concerned with the policy choices we face. At worst, such a statement could even be claimed to be supportive of those who would continue the arms race behind the smokescreen of the Reagan strategic arms reduction proposal.

Just as this first operative clause in our resolution was an empty substitute for the freeze, the second clause seems to aim at the general direction of another important issue in the public debate, a "no-first-use" declaration. That proposal is for the U.S. and the Soviet Union each to declare that it will not be the first to use nuclear weapons. Redeployment of battlefield and intermediate-range nuclear weapons would naturally follow in the wake of these declarations. But again our resolution does not help to inform the public debate by clearly stating how we stand on this issue.

In short, the most striking thing about our resolution is the contrast between its precise, powerful preamble that describes what a dangerous fix we are in and what problems previous approaches to deal with these issues have encountered and its imprecise, equivocal operative clauses that fail to address clearly and directly the policy choice we face. Why is that? My own theory is this:

In recognition of the overriding importance of the nuclear war issue, with this resolution we have ventured out of our normal technical confines into the political arena. That was not an easy step, but we have taken it. But once there we feel unsteady and uncertain--our natural inclination is to try to speak technically, but this is not a technical issue basically--it is a political issue. It is the issue of our time. We have a responsibility to speak clearly and unequivocally about this political issue.

If the Council feels uneasy about speaking for the APS membership on this issue, I would respectfully suggest and approach other than equivocating in our pronouncements or retreating from the political arena:

I believe physicists have a special opportunity and a special responsibility to speak out now about what once was our issue that has now become the issue of our time.

I propose that the APS membership be polled about the nuclear weapons freeze and the no-first-use declaration. That way the physics community can speak directly to these key policy choices. The language of the resolutions might be something like:

1. We call upon the President and the Congress of the United States and their counterparts in the Soviet Union to pursue, without preconditions, and with a sense of urgency, efforts to achieve a mutual, verifiable freeze on the testing, production and deployment of nuclear weapons and nuclear weapons delivery systems.
2. We call upon the President and the Congress of the United States and their counterparts in the Soviet Union each to declare that their country will not be the first to use nuclear weapons.

This poll would invite physicists individually and voluntarily to speak out on these issues and to amplify their voices collectively so that they might be heard.

I submit this proposal in the spirit of a constructive suggestion; I respectfully request that you consider it seriously. I am resigning because in its resolution of January 23, the Council failed to respond to the threat of nuclear war with much more than lip-service and because I came away from that meeting sadly, with the sense that the Council will not act in a manner commensurate with the danger we face. I hope you will prove me wrong.

In closing, I would like to say I have enjoyed serving on the Council. The issue that has separated us is on new ground for the APS and I appreciate that over the past few months I have been asking the Council to move further and more rapidly on this issue than many members feel comfortable doing. I do feel a sense of urgency and, as I have explained in this letter, I believe physicists have a special opportunity and a special responsibility to speak out now about what once was our issue that has now become the issue of our time.

THE AMERICAN PHYSICAL SOCIETY ISSUES STATEMENT ON NUCLEAR ARMS LIMITATION

Moved by a sense of urgency, the American Physical Society, through its elected Council, adopted the following resolution concerning nuclear warfare. The Society's resolution calls on the President and the Congress of the United States and their counterparts in the Soviet Union and other countries to intensify efforts to reduce the risk of nuclear war.

The initial draft of this resolution was prepared by a panel of distinguished physicists who are recognized experts in nuclear arms control: Hans Bethe, Sidney Drell, Marvin Goldberger, Wolfgang Panofsky, and Herbert York.

In addition to this formal expression of concern, the American Physical Society will continue to organize public educational activities such as symposia, technical studies, and workshops in the area of nuclear arms control.

STATEMENT OF THE AMERICAN PHYSICAL SOCIETY

—Whereas nuclear war is an unprecedented threat to humanity;

—Whereas the stockpile of nuclear weapons distributed around the globe contains the explosive power of more than one million Hiroshima bombs;

—Whereas a general nuclear war will kill hundreds of millions of people;

—Whereas the aftereffects of general nuclear war are certain to be catastrophic for the survivors and could destroy civilization;

—Whereas any use of nuclear weapons, including use in so-called "limited wars," would bring with it substantial risk of escalation to general nuclear war;

—Whereas thirty years of vigorous research and development have produced no serious prospect of effective defense against nuclear attack;

—Whereas nuclear arsenals of the United States and the Soviet Union are more than adequate for deterrence;

—Whereas the continuation of the nuclear arms race will not increase the security of either superpower;

—Whereas the proliferation of nuclear weapons to additional countries, especially in areas of high tension, would substantially increase the risk of nuclear war;

—Whereas there has been no progress for several years now toward achieving limitations and reductions in strategic arms, either through ratification of SALT II or the negotiation of a replacement for it;

—Whereas negotiations intended to achieve a comprehensive nuclear test ban have been indefinitely adjourned; and

—Whereas negotiations intended to prevent or inhibit the spread of nuclear warfare to outer space have been suspended;

Be it therefore resolved that the American Physical Society, through its elected Council, calls on the President and the Congress of the United States, and their counterparts in the Soviet Union and other countries:

—to intensify substantially, without preconditions and with a sense of urgency, efforts to achieve an equitable and verifiable agreement between the United States and the Soviet Union to limit strategic nuclear arms and to reduce significantly the number of such weapons and delivery systems;

—to conduct, in a similar spirit, negotiations to restrict the use and limit the deployment of battlefield and intermediate range nuclear weapons;

—to resume negotiations to prevent the spread of nuclear weapons to outer space;

—to take all practical measures to inhibit the further proliferation of nuclear weapons to additional countries;

—to take all practical actions that would reduce the risk of nuclear war by accident or miscalculation;

—to continue to observe all existing arms control agreements, as well as SALT II;

—to avoid military doctrines and deployments that treat nuclear explosives as ordinary weapons of war;

and

—to initiate serious negotiations to ban the testing of nuclear weapons in all environments for all time as called for in the Non-Proliferation Treaty.

APS COMMITTEE ON OPPORTUNITIES IN PHYSICS: A REPORT ON THE COPS MEETING, NEW YORK -- October 2, 1982, by Earl Callen, Physics Dept., American University, Washington, D.C. 20016.

Immigration reform: A bill to curtail immigration into the U.S. contained features of minor impact on total immigration but of serious concern to the scholarly and skilled professions and to educators. The bill enunciated an exceedingly restrictive definition of "exceptional ability" as an admissions criterion for immigrants and for labor certification. It also required that **all** foreign students return to their home country for two years, upon completion of their studies in the United States, before becoming eligible as United States immigrants. The APS, other professional societies, the Association of American Universities have commented on these features and others. The Immigration Reform and Control Act of 1982, passed by the Senate, died in the House in the rush of business at the end of the last Congress. But it will be introduced again in the 98th Congress, probably in March. The COPS urge that inquiries be made as to changes in the legislation, and that representations be made now to the Congressional sponsors.

Attendance by NASA personnel at APS committee meetings: NASA interprets its conflict of interest and ethics rules more narrowly than do other government agencies (and fails to recognize that it does so). The result is that NASA physicists have difficulty in accepting reimbursement from APS to attend committee meetings. It has been a small but stubborn problem. We are trying to show them how other agencies handle the problem.

We note with approval the appointment of an APS Washington representative. This is not yet the full-scale educational program we envisage, but it is a good first step. The COPS (along with the **Forum**; both groups called for this action two years ago) take pride in having stimulated this development. The Washington representative (Robert Park of the University of Maryland, an appointment we hail with joy) will no doubt have looked into the immigration bill by the time you read this.

There will be a COPS short course on Business for Enterprising Physicists at the Baltimore meeting. Dates are April 16, 17 (see page 9 for more details).

Not everything the COPS do can be publicly reported. We seem to have served a useful role as ombudsman in the case of a grievance by a physicist against a publisher, for failure to credit authorship and to pay royalties for a film.

High school physics teaching project: Here there is potential for a great success. The education committee picked up on this idea, first broached by the COPS, and it has been a joint effort. The need for qualified physics teaching in the high schools is great. The pool of talent exists in the APS membership to aid existing school programs. We are confident that this project will have impact.

Other problems: Do age cut-offs by award-granting foundations discriminate unfairly? Is an age criterion **per se** unfair? Does it invidiously discriminate against women, who raise families and enter the race late? What does the future hold for American science and technology? CERN found the W particle. The Japanese, who know how to make cars that don't break down, have agreed to share their military technology with us. Jan Sengers of Maryland tells us that most of the new data we use in the United States on the thermodynamic properties of liquids now come from the Soviet Union. And now what is going to happen to Bell Labs with the AT&T split up? Is Bell Labs secure? It would be nice to be reassured.

There will be a report at the April meeting in Baltimore, an invited talk, on secrecy, technology transfer, the Commerce Department regulations, and what happened at the SPIE Conference (under government threat, 100 unclassified papers were withdrawn).

Ralph Alpher, long time Chairman of the COPS, able spokesman before the APS Executive Committee and Council, ardent supporter, hard worker, originator of many COPS projects, has retired from the Committee. Who else can fill his shoes (or his ample pants)?

ANNOUNCEMENTS:

APS COMMITTEES ON EDUCATION AND OPPORTUNITIES IN PHYSICS SHORT COURSE: Starting and Managing a Business -- for Enterprising Physicists. Organized by Charles C. Foster and William L. Haeberle.

The APS Committees on Education and on Opportunities in Physics will offer a short course on **Starting and Managing a Business -- for Enterprising Physicists** on April 16 and 17, 1983, the weekend before the April APS Baltimore meeting. The course deals with aspects of business concepts, practices, procedures, attitudes, organization and management necessary to

realize profit from technical ideas and expertise through normal business activities. The course is organized around three elements: (1) a comprehensive prearrival package of selected reading materials, (2) lectures on selected topics by three practicing entrepreneurs, and (3) discussions over lunch each day with faculty and fellow participants. Topics and lecturers include William L. Haeberle: **The Entrepreneurial Life Style and Opportunities, Risks and Planning, Getting In and Getting Started, Organizational Arrangements, Problems of Growth and Consulting as a Business**; Stephen Easthan: **Legal Organizational Form, Agreements and Contracts, and Finance and Accounting**; and Robert Shumate: **A Living Case Study of a Company, Patents and Licenses and Implementing the Marketing and Production Plan**. The prearrival package (course outline, selected reading materials, and reference list) may be purchased by non-participants for \$50.00 while copies are available. Course activities are scheduled from 8:30-4:30 each day. Course cost is \$200.00. There is a possibility that late enrollees can be accepted. For more information, call Charles C. Foster, Cyclotron Facility/Physics Department, Indiana University, Bloomington, IN 47405, (812) 335-9365.

JOURNAL OF PHYSICS AND SOCIETY There has been much talk over the years about a **Journal of Physics and Society** to deal with physics-societal issues. This includes topics which involve physics in such areas as energy, arms race, environment, weapons research, employment, etc. The journal is to provide a home for articles that are not "technical" enough for the more research-oriented journals. It would be a fully refereed journal.

I am interested in knowing your opinions about whether such a journal is needed. If you think it is needed then tell me whether you have articles that are ready, or could be ready for submission. Also, what format do you think the journal should be - normal or electronic; quarterly or monthly; etc. Please send your comments to John Dowling, Physics Department, Mansfield State College, Mansfield, PA 16933.

INTERNATIONAL FREEZE APPEAL There is an international freeze appeal which is being distributed among physicists of all nations. It has already been endorsed by more than 50 Nobel Prize winners and other distinguished physicists ranging from H. Alfvén to A. Zichichi. Other signers include Bethe, Casimir, Kapitza, M. Rosenbluth, J. Steinberger, and S. Weinberg.

The statement of the appeal is "we call for an agreement to halt the testing, production, and deployment of nuclear weapons and nuclear weapons delivery systems. Meanwhile, no further nuclear weapons or delivery systems should be deployed anywhere."

The distributors have said "at the end of this campaign the appeal, with the signatures, will be presented to the concerned governments, to international organizations, and made public through the press and other forums. If we physicists unite our worried voices, irrespective of political differences, our appeals should have considerable impact."

The organizers hope that other groups will aid in their efforts to cause this International Freeze Appeal to snowball into a movement that has worldwide impact. Those people who wish to help in the distribution of this appeal should contact Nina Byers at UCLA or Daniele Amati, Theory Division CERN.

**A Scientists' Moratorium by Derrick P. Grimmer, 1938
Hano Rd., Santa Fe, NM 87501.**

I am a physicist at Los Alamos National Laboratory, a major center for nuclear weapons development in this country. Speaking as a private citizen, I am personally in favor of an immediate bilateral and verifiable nuclear weapons freeze between the United States and the Soviet Union, like a majority of U.S. citizens. Although I do not work in the weapons field, I know a number of people who do or have done so. These are reasonable sorts of folks who for one reason or another find themselves as "weaponers." In a survey recently conducted in Los Alamos County, New Mexico, a statistically meaningful number of voters were polled on a number of local and national issues and candidates, including an immediate bilateral and verifiable nuclear weapons freeze. The voters were evenly divided (within the error margin) on the freeze question. Furthermore, the survey revealed that Los Alamos National Laboratory employees, including those in weapons research, responded similarly to the overall population of Los Alamos County. The main concern regarding the freeze was the verifiability aspect, and rightly so. In retrospect, these poll results aren't so surprising: people are people everywhere.

After mulling all this over, searching for a way to bring the arms race to a halt, yet making sure a freeze in nuclear weapons development is mutually verifiable, and avoiding drastic unemployment among nuclear weapons researchers, I have come to some conclusions. An immediate bilateral verifiable freeze

is possible only if physical scientists in the United States and the Soviet Union declare among themselves an immediate bilateral and verifiable moratorium on nuclear weapons research. This is the only way new nuclear warheads, missiles and other delivery systems can be avoided. Only scientists can build new weapons, and without scientists willing to do so, no new weapons will be built. A moratorium on weapons work might enable scientists to develop necessary sensitivity, through intense peer pressure, to the real effects of new, destabilizing nuclear weapons systems: a lot of dead people and a subsistence life for the survivors.

What shall the former "weaponers" do for a living? Work on the technology of verification and on stabilizing defensive weapons technologies that make it too expensive for the other side to wage offensive war. **This letter is a call to scientists in the United States and the Soviet Union to join in an immediate, bilateral and verifiable moratorium on nuclear weapons research**, and to devote their creative talents instead on the stabilizing technologies of verification and defensive weapons. If we stay in our present mental rut, it looks like we are in for big trouble. The change to sanity must start at the beginning of the problem, with us scientists. (Reprinted with permission from the Bulletin of the Atomic Scientists, 39 (2), 54 (1983).)

The objective of the **FORUM** is the advancement and diffusion of knowledge regarding the inter relation of physics, physicists and society.

The **FORUM** is charged with providing for all members of the Society an opportunity for discussion of an involvement with such matters.

The **FORUM** sponsors symposia at the general meetings of the Society, publishes a quarterly Newsletter, appoints committees or study groups to conduct studies, may sponsor Topical Conferences and short course on topics of interest.

WHY JOIN?

- 1) Membership is free to APS members.
- 2) Members receive the Newsletter.
- 3) Members may be appointed to committees, study groups, and may be elected officers.

APS members can join by writing:

**DIETRICH SCHROEER
DEPT. OF PHYSICS AND ASTRONOMY 039A
UNIVERSITY OF NORTH CAROLINA
CHAPEL HILL, NC 27514**

THE SECOND SHORT COURSE ON THE ARMS RACE

A Topical Meeting sponsored by
The APS Forum on Physics and Society and the
American Association of Physics Teachers

Sunday, April 17, 1983
(The day before the Spring APS Meeting)
Baltimore Convention Center Room 307

The Forum and the AAPT will host the Second Short Course on the Arms Race at the Baltimore spring APS meeting. This should be a significant event for physicists who are considering teaching on the arms race, or who are interested in participating in the Forum study on the arms race. The talks will be directed towards a physics audience by well-known participants. The APS/AIP will publish the proceedings in the AIP conference series under the title, PHYSICS AND THE ARMS RACE.

Morning Session (9:30 AM to 12:30 PM)

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| "The Effects of Nuclear War": | Frank von Hippel (Princeton University) |
| "Physics & Technology of the Arms Race": | Richard Garwin (IBM Research Center) |
| "New Technologies of the Arms Race": | Kosta Tsipis (M.I.T.) |

Afternoon Session (2:00 to 5:30 PM)

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| "Enhancement of Imagery by Digital Computers": | Robert Hunt (U. of Arizona) |
| "Verification of Nuclear Test Bans by Seismic Methods": | Lynne Sykes (Columbia U.) |
| "Teaching about Physics and the Arms Race" | |
| "Courses on the Arms Race": | Dietrich Schroeer (Univ. of No. Carolina) |
| "Films on the Arms Race": | John Dowling (Mansfield State College) |
| "The FAS Nuclear War Education Project": | Barry M. Casper (Carleton College) |
| "Interactive Computer Graphics": | David Hafemeister (Cal. Polytech St. U.) |

Evening Session (7:00 to 10:00 PM)

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| "On Limiting Technology by Negotiated Agreement": | Albert Carnesale (Harvard Univ.) |
| "Congress and National Security": | Peter Sharfman (OTA) |
| "Salt Process: Past and Future": | Ralph Earle II (Salt II) |

Films, Videotapes, and Slide Shows

The latest films on the arms race and nuclear war will be shown between sessions.

Registration

1983 Spring APS Meeting
Second Short Course on the Arms Race
17 April 1983

- I shall attend the Second Arms Race Short Course
- I hope to attend the Second Arms Race Short Course

(Name)

(Mailing Address)

(City) (State) (Zip)

- Enclosed is \$40 to cover course costs (including PROCEEDINGS)
- Enclosed is \$25 for registration, sorry I can't afford the PROCEEDINGS
- Enclosed is \$10 for registration, I am a graduate student.

Return this form to: Dietrich Schroeer
Department of Physics and Astronomy 039A
University of North Carolina
Chapel Hill, NC 27514