

Committee on International Scientific Affairs (CISA)

Annual Report

January – December 2002

Introduction

This has been a very active year for CISA with the dramatic events on the international scene motivating new but measured responses in the physics community along with a normal array of scientific and educational events to be addressed.

For the purposes of this report, the scope and character of the international activities which CISA addresses, can be broken down into the following categories:

- I. Interactions with National Physics Societies
- II. Science Policy and International Organizations
- III. Scientific Research, Personnel Exchange, and Conferences
- IV. Physics Education
- V. Physics-Based Needs of the International Community

Several international physics themes are included in this years activities including an APS initiative to build bridges and increase contacts with the Islamic scientific community. This is being pursued with respect to Iran and Pakistan and to some extent, Jordan, though jointly sponsored physics workshops/schools, exchange of envoys, and joint educational projects. In other projects, CISA has addressed the needs of the international community with respect to humanitarian de-mining techniques, aid for flood relief to the physics community in the Czech Republic, as well as supporting the organization of physics conferences in Cuba, Mexico, and Brazil. Other items included monitoring activities in IUPAP, ITEP, the convening of the IUPAP-sponsored International Conference on Women in Physics (and the empanelling of the Working Group on Women in Physics), among others. These activities are summarized in the following sections of this report.

For the 2002 year, the membership of the APS standing Committee on International Scientific Affairs, CISA, consisted of the ten individuals listed in the appendix A, including Peter D. Barnes as Chairman and Harry Swinney as Vice Chairman. CISA held public meetings, on April 21 and November 16, 2002. The agendas for these two events are provided in Appendix B and C of this report. Specific motions passed by CISA over the year are included in the official minutes of these two meetings.

The next CISA meeting is scheduled for April 5, 2003 under the chairmanship of Prof. Bruce Barrett, Univ. of Arizona.

I. Interactions with National Physical Societies

Following the initiative of APS President, William Brinkman, to increase contacts with the Islamic scientific community, CISA had direct and personal interactions with Iran and Pakistan together with progress reports on the Sesame Project in Jordan.

a. **Iran**

Over the past year, CISA has had communications with Prof. Reza Mansouri, the Iranian Deputy Minister of Science, Prof. Hessamaddin Arfaei, the President of the Physical Society of Iran, PSI, and his representative, Prof. Farhad Ardalan, Director of the Institute of Mathematics and Physics, IMP, in Tehran. Prof. Ardalan came to the APS offices on August 5 to meet with Peter Barnes and Irving Lerch (see Aide-Memoire signed by Judy Franz. Farhad Ardalan, Peter Barnes, and Irving Lerch on August 12, 2002) and on November 17 to meet with CISA in Washington D.C. Many possibilities for APS-PSI joint projects were discussed with action taken on the following two initiatives:

1. Exchange of APS and PSI representatives to speak at their respective national meetings. Invitations have now been extended to Prof. Hessamaddin Arfaei to give the Beller Lecture at the APS April, 2003 meeting in Philadelphia and to Peter Barnes of CISA to speak at the PSI August 25, 2003 national meeting in Tabriz, Iran. Plans for these visits and lectures are now in progress.
2. Joint APS /PSI sponsorship of a school/workshop on string theory in October 2003 in Tehran. This meeting has now been endorsed by the APS-DPF. The co-chairs of this workshop are, for the PSI, Prof. Ardalan, PSI and for the APS, Prof. Albion E Lawrence at Brandeis and Prof Vijay Balasubramanian at the Univ. of Penn. Funds to support the travel of US students to this school are now being requested.

Other actions discussed include a memo of understanding between the APS and the PSI, the development of a program in which US university professors come to universities in Iran to give extended courses on specialized subjects and possibly to serve as co-advisors on thesis projects. The possibility of joint APS and PSI sponsorship of a cosmology workshop in 2004 has also been suggested (and approved by the Division of Particles and Fields and the Board of APS— providing the workshop adheres to the principles of free circulation of scientists).

b. **Pakistan**

In its April, 2002 meeting, CISA had extensive discussions with Prof. Pervez Hoodbhoy, Quaid-i-Azam University, Islamabad regarding physics education and research in Pakistan. Prof. Hoodbhoy is author of the book “Education and the State – Fifty Years of Pakistan”. From the point of view of joint US- Pakistan initiatives, Prof. Hoodbhoy felt that the educational sector was the most critical and would have the highest long-term impact. Of particular concern is the physics training of junior faculty at universities and colleges in Pakistan. Prof. David Ernst of CISA is working with Prof. Hoodbhoy to develop a proposal to define and develop funding for such a project. The APPT has been contacted and funding requests for a joint pilot project are in progress.

c. **Jordan**

CISA has been following with interest the proposed development of a synchrotron light source near Amman, Jordan as a joint project of 14 countries in the Middle East, including Israel. Herman Winick made a report to CISA regarding the status of this

project, its search for funding from both the European Union and the US, and the development of beam lines and workshops. This project is now moving ahead. At a groundbreaking ceremony at the SESAME site in Alaan, Jordan on January 6, 2003, Koichiro Matsuura, the Director-General of UNESCO, announced that the SESAME project (Synchrotron-light for Experimental Science and Applications in the Middle East) is formally launched. He has received notice from seven countries and territorial authorities that they accept the statutes for the governance of the project. These Members of SESAME are Bahrain, Egypt, Iran, Israel, Jordan, the Palestinian Authority, and Turkey.

d. **Former Soviet Union and Central Asian Nations**

George Gamota reported to CISA on the development of a proposal to bring the US and Ukrainian physics communities together to formulate a plan to rejuvenate and reform science education in the primarily Islamic nations of this region. The immediate goal is to organize a meeting hosted by the Ukrainian Academy of Sciences and the Ukrainian Physical Society, to be held in Crimea or Kiev, to draft a plan of action for future workshops. Subsequently, the Civilian Research and Development Foundation invited APS to submit a proposal to fund a consultative meeting in the region with a view to developing a program of educational reform.

e. **Abdus Salam International Centre for Theoretical Physics (ICTP)**

Prof. Miguel Virasoro, retiring Director of ICTP met with CISA on April 21, 2002, to discuss the progress ICTP has made to promote and aid science in developing countries. This was of particular significance to the APS and CISA since ICTP has successfully created a center where Muslim/Arab colleagues can meet, discuss physics, and exchange information and contacts. Dr. Virasoro discussed the input and environment required to make this successful. Peter Barnes and Irving Lerch have now continued these discussions in a meeting with the new ICTP director, Prof. Katepalli Sreenivasan who started his appointment in March 2003.

European Scientific Community

Research and Education in the Czech Republic

As a result of flooding in Prague and Rez, the physics library at Charles University and the cyclotron facility at the Nuclear Physics Institute were severely damaged in August of 2002. To assess the situation, CISA chair, Peter Barnes, made contact with Dr. Zdenek Nemecek, Vice-Dean for the Faculty of Mathematics and Physics, Charles University and Prof. Jan Dobes, Director of the Nuclear Physics Institute ASCR. At their suggestion, Dr Jan Rak of the Nuclear Physics Institute, came to the CISA meeting of November 2002, gave a report on the damage, and made an assessment of the consequences. In response to the situation, CISA made a search for US financial aid to the Czech Republic including inquires to the offices of the US-AID. Although these were not successful, the APS has agreed to send CD versions of its journals to these institutions. This transfer has now happened.

II. Scientific Policy and International Organizations

a. **UNESCO-information item**

Lerch reported to CISA that the US has decided to rejoin UNESCO. This raises a number of issues regarding the UNESCO budget and the US contribution. The State Department

and the NAS have been meeting to discuss the consequences of this decision by the US. Lerch has prepared a position paper for the State Department on this subject and has attended a meeting in December 2002 at UNESCO headquarters.

b. IUPAP-information items

Reports by Pierre Hohenberg (chair of US Liaison Committee) in April, and by Irving Lerch (APS) in November.

Hohenberg reported on the activities of the US Liaison Committee and preparations for the General Assembly, which IUPAP has now held in Berlin in October 2002. Lerch, who attended, reported on action items which included election of a new President (Yves Petroff), President Designate (Alan Astbury), and Secretary General (Judy Franz), new rules for management of IUPAP sponsored international meetings, and the request that the UN declare that 2005 should be the INTERNATIONAL YEAR OF PHYSICS.

c. IUPAP International Conference on Women in Physics

Dr. Judy Franz reported to CISA about the very successful IUPAP Conference on Women in Physics held in Paris in March 2002. Over 300 individuals from 65 countries attended the conference. The career and personal issues faced by woman in physics appear to be the same across the international scene. A set of resolutions were prepared, discussed, and adopted by the Conference.

III. Scientific Research, Personnel Exchange, and Conferences

a. US Visa Application and Review

CISA continues to be very concerned about the US Visa application and review process, which continues to be of critical importance to the University and National Lab research communities. Currently all applications sent for additional review have to be vetted through the State Department, the CIA, the FBI, etc, which is causing approval delays which last months. Lerch points out that US science and technology is being negatively impacted by these visa problems and as a result is impacting national security. He is recommending that the APS bring this negative impact to the attention of the national security leadership. Talks are being conducted with administration and Congressional staff to seek legislative remedies.

b. Joint Conferences in Cuba

Over the past two years, CISA has been working with the Cuban Physical Society, CPS, on two joint meeting. The CPS proposed that two workshops be held on two topics of importance to their Society: medical physics and physics education. The International Workshop on Medical Physics was held in Havana in April 2002. It was organized in conjunction with the AAPM and had good attendance from Latin America and the US (about 30 Americans attended). The second conference, the VIII Inter-American Conference on Physics Education is in the planning stage. It will be held in Havana in July 2003 with IUPAP sponsorship. The APS has applied for NSF funding to support this meeting.

c. Canadian-American-Mexican, CAM, Meeting

There have been three CAM meetings held in the 1990's. At the meeting of the three national physics societies in Morelia in October 2001, plans were laid for a CAM meeting in Merida Mexico in October 2003 in which graduate students would play a strong organizational role. NSF and DOE funds have been requested to support the

participation of approximately 100 US participants.

d. **Inter-American workshop on the Use of Synchrotron Radiation**

This workshop was held in December 2002. This is the second in a series started in Campinas, Brazil in 2001 with the sponsorship of the APS and the NSF. Planning is underway to organize and Inter-American Council of Synchrotron Laboratories to pursue a multi-disciplinary series of workshops to be held in rotating venues.

IV. Physics Education

Initiatives related to Physics education in Pakistan are discussed in item I.

V. Physics-Based Needs of the International Community

-APS Study of Technologies for Land Mine Detection and De-activation.

Andrew Sessler gave reports at both CISA meetings regarding a proposal for an APS study on current technologies for humanitarian de-mining. This idea was triggered by an appeal from the Croatian Academy of Sciences to CISA asking for help to clear mines in Croatia. This, of course, is a worldwide problem looking for a technological solution. Profs Sessler and Surajit (SUNY Buffalo) propose that the APS undertake a directed study of this largely physics-based advanced technology issue. The APS Council has now recommended that this study be initiated if external funding can be found.

APPENDIX A: APS Committee on International Scientific Affairs (CISA)

CISA 2002

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APPENDIX B AGENDA FOR APRIL 21, 2002 MEETING

**Committee on International Scientific Affairs
Sunday, 21 April 2002**

**Hyatt Hotel, Fiesta Room 1
Albuquerque, NM**

	Topic	Discussants/Guests
2:00pm	1) Welcome and Introductions	Barnes
2:30pm	2) USLC Report on IUPAP and Preparations for IUPAP General Assembly	Pierre Hohenberg (by phone) Peoples/Lerch
3:00pm	3) Invigorating contacts with colleagues in Islamic Countries & APS Task Force on SESAME Project	William Brinkman Pervez Hoodbhoy Herman Winick Miguel Virasoro
4:15pm	4) APS Governance	Judy Franz
	5) IUPAP International Conference on Women in Physics	
4:45pm	6) The Abdus Salam International Centre for Theoretical Physics (ICTP)	Miguel Virasoro
5:15pm	7) Technologies for Land Mine Detection and Deactivation	Andrew Sessler
6:00pm	8) Cuba	
	a. Status report on planning for Physics Education Conference, July 2003	Fred Stein
	b. Report on Medical Physics Conference	Lerch
6:30pm	Dinner	
7:30pm	9) International Activities	Lerch
	a. Status report of CAM 2003	
	b. Relations with UNESCO and Preparations for Consultative Meeting	
	c. Congress of Physical Societies and International Year of Physics, 2005	
8:00pm	10) Science and National Security	Lerch
	a. Report on Center for Global Security Workshop	
	b. Science and Development Initiatives	
8:30pm	11) Visas and Freedom of Travel Issues	Lerch/Irwin
	a. Monitoring of students	
	b. APS policy regarding requests for assistance	

c. Visas and scientific manpower

9:00pm **12) Elect Vice Chair**

13) Pick Fall Meeting Date and Location

14) Approval of November Minutes

15) Any New Business

10:00pm Adjourn

Information Items

CIFS letters on behalf of Igor Sutyagin and Grigory Pasko

Information on Hungarian National R&D Programs

Access to APS Journals

AAAS Award for International Scientific Cooperation

Reciprocal Membership agreement sent to the Lithuanian Physical Society to sign

APPENDIX C AGENDA FOR NOVEMBER 16, 2002 MEETING

Committee on International Scientific Affairs

Saturday, 16 November 2002

Smithsonian Suite

Radisson Barcelo Hotel Washington

Washington, DC

8:30am Continental Breakfast

Topic

Discussants

9:00am **1) Welcome and Introductions**

Barnes

2) Approval of April Minutes

CISA

3) IUPAP General Assembly

Lerch

10:00am **4) Iran - APS-IPS Joint Projects**

a) Summary of the August meeting and goals for today's discussion

Barnes

	b) General discussion of physics research and education in Iran	Ardalan
	c) Identification and review of opportunities for physics exchange between the Physics Society of Iran & APS	Barnes/Ardalan
	d) Formulation of a recommendation to the APS Board	
		CISA
11:30am	5) Pakistan - Physics Education	Ernst/Lerch
	a) "US Involvement in Pakistan Science Faculty Training Program"	
	b) "A Preliminary Proposal for Science Faculty Training and Development of Prototype Teaching Laboratories"	
	6) Science Education in the FSU & Central Asian Nations	Gamota (by phone)/Lerch
12:30pm	Lunch	
1:00 pm	7) Aid to Prague Physics Community for Flood Damage	Rak/Barnes
	8) Latin America	Lerch/Ernst
	a) Physics Education Conference, Havana, July 2003	
	b) Status report on "CAM2003," Mexico, October 2003	
	c) 2nd Synchrotron Radiation Workshop, LNLS, Brazil, 12/02	
3:00pm	9) Update on De-mining Study	Sessler/Sen (both by phone)
	10) Relations with and involvement in UNESCO	Lerch
3:30pm	11) Visas and Freedom of Travel Issues	Lerch
	d. APS survey of physics PhD-granting departments	
	e. General visa problems	
4:00pm	12) CISA Chair and Vice Chair for 2003	Barnes/CISA
	13) Pick Spring Meeting Date and Location	
	14) Any New Business	
5:00pm	Adjourn	

