

What I submitted:

**The Seventh
InterAmerican
Conference: Personal
Perspectives**

**Harry Manos
Gordon J. Aubrecht, II**

What's in the *Announcer*:

**In-service Teacher
Training in Rio
Grande do Norte,
Brazil, from VIII
IACPE, Porto Alegre,
Brazil**

**Harry Manos
Gordon J. Aubrecht, II**

My real title for this part of the talk:

What I did on my summer vacation

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The simple answer:

I attended

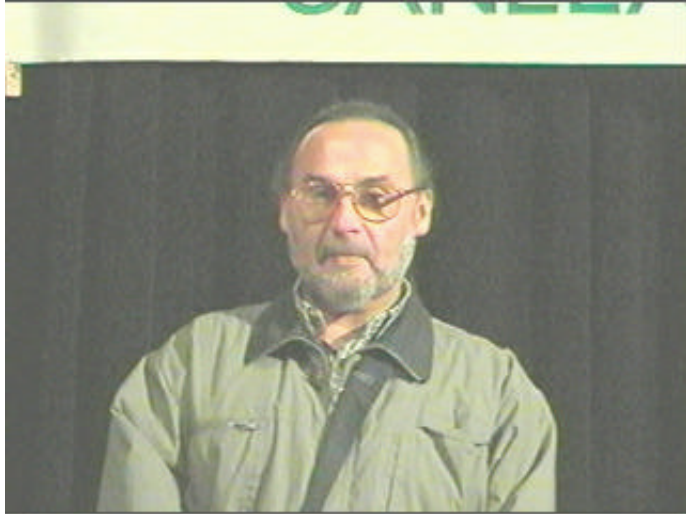
the Seventh InterAmerican Conference in Physics Education in Calela, Rio Grande do Sul, Brasil

I got roped in to becoming a **member of the InterAmerican Council**. And, as if that weren't enough, they made me **secretary**!



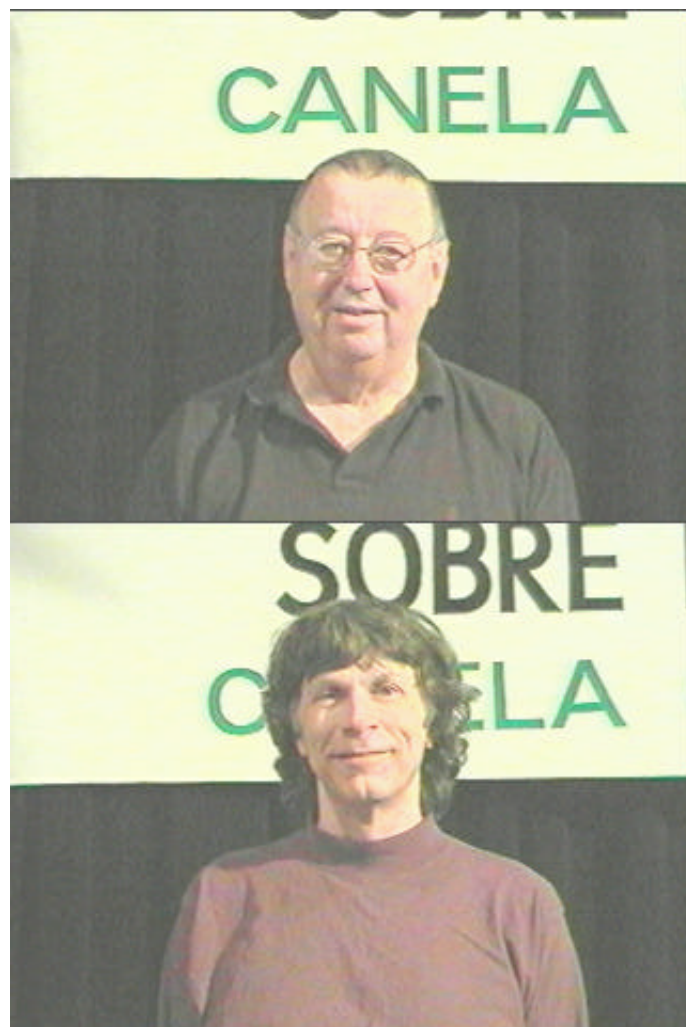






CANELA 03





VII Interamerican Conference on Physics Education in Canela, Brazil
Recommendations of Work-group 2 - July 7, 2000
The Preparation of Physicists
Physicists in a Changing World

Historically physicists have opened up several interdisciplinary areas such as biomechanics, geophysics and materials science, to name a few, as well as several aspects of science education.

In fact, Physics education has very often resulted in producing individuals able to recognize regularities, causes and symmetries that appear in complex events.

In recent times, external pressures have diverted physics faculty into specialized research fields, to the detriment of significant, quality teaching.

Thus, to the extent that this is true, physics is often presented as a “finished” and unexciting subject, without fostering understanding, reflection and discussion with little relevance to students’ lives.

Enrollment in physics courses has decreased worldwide and simultaneously the output of competent physicists and physics teachers has been insufficient.

Although the way physics is being taught is certainly not the only reason for this situation to exist, it certainly is an important contribution to the problem.

The VII IAC, taking into account the necessary competencies a physicist should have –as listed below (See 6)–recommends:

1. That physics departments should strongly support their faculty and students in the development of a strong, solid, flexible and open curriculum, capable of being adapted to fulfill the local needs of countries and, even, regions within countries.
2. That physics departments should transmit to all its members the importance of raising the interest in physics by the community, through the permanent participation at faculty and students alike.
3. That physics departments should strive to support the activities delineated in (2), above for the betterment of its students.
4. That physics departments foster the continuing education of their faculty by supporting activities such as attending workshops and conferences as well as hosting such types of events.
5. That departments of physics at Schools and Universities that offer Master and PhD degrees shall include, among its specialties, courses of study and projects in Physics Education. (Floor motion by Alejandro Gonzáles of Mexico)
6. That the documents presented by Marco Antonio Moreira of Brazil regarding General Skills, Essential Competencies and Experiences be considered as having general validity for the preparation of qualified physicists.

VII Interamerican Conference on Physics Education in Canela, Brazil Recommendations of Work-group 5 - July 7, 2000

Preservice education

- Education should be centered on the relation between teacher and student. It should be face to face with support of distance learning.
- Education should be of disciplinary character and should provide a solid base in Physics, Physics Education, and Education and an understanding of other areas (biology, chemistry, geology, etc.) in order for teachers to be able to exploit interdisciplinary opportunities in their future teaching.
- Future teachers should be exposed to interdisciplinary experiences as far as possible. This may include working as part of an interdisciplinary group.
- Students need exposure to three languages (Portuguese, Spanish, and English) in order to assure access to new bibliographical and technical literature.

Continuing education of physics teachers

- Teachers should have the opportunity to exchange ideas with peers and mentors. Universities should try to organize themselves to take into account access to information available to teachers.
- Education should be face to face with support of distance learning using available media.
- Classes should be content-specific in physics and include current pedagogical content.
- New programs in continuing education should take into account availability of resources and pay attention to what has been learned from experience.
- Teachers should evaluate the impact of their teaching in order to improve.
- Curricular structure should not rehash prior training and should build on teachers' professional experience.
- Continuing education should be rewarded in professional advancement.

Working conditions

- Good knowledge of the working conditions of teachers is required in order even to begin doing education research and in deciding what directions for change to suggest. These conditions include those for work and those for life.
- We recommend that ministries of education and professional organizations in each country study the working conditions of teachers. (An example is from Maite Andrés in Venezuela.) We need to make certain that economic conditions are a part of the study, because if the teacher struggles to support his or her family, he or she cannot give as much to students and also will not have the time to think that is necessary to do a responsible job. Governments need to commit the funds to collect these data. Once data are available, teachers need to be part of deciding what to do to make conditions better. The teachers are best represented through their professional societies.
- There should be a balance between the number of hours and the number of students and salaries so as to allow faculty to participate in continuing education activities as well as to reflect on their professional activities.
- Governments should support participation of teachers in professional meetings, and not demand they pay for these experiences themselves.

General recommendations

- There should be a central web-based archive of the recommendations of the working groups from all InterAmerican conferences. Working group members should be aware of prior recommendations as they participate in the working groups.
- Language specific (Spanish and Portuguese) versions of listserves such as PHYS-L and PHYS-Irn should be established. This is a way to create dialogs about physics education among all members of the listserve.

And I attended

GIREP: Physics Education beyond 2000