

The 2nd Canadian-American-Mexican Physics Graduate Student Conference (CAM2005) Report from the Chair of the Organizing Committee

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Introduction

The CAM2005 Conference, jointly sponsored by the American Physical Society, Canadian Association of Physicists (CAP), and Sociedad Mexicana de Física (SMF), gave physics graduate students an opportunity to attend a unique conference planned by and for them, introduced them to recent findings in the various subfields of physics, and addressed concerns particular to physicists in the early stages of their careers. In addition, CAM2005 promoted international collaborations among the North American countries and allowed participants to develop an appreciation of the different experiences of graduate students from across North America. Through special topical and technical sessions, students had the opportunity to gain a broader view of physics beyond their own classrooms and research laboratories. This conference also featured sessions dedicated to exploring career options available to young physicists, along with a career fair for those seeking employment.

The CAM Conferences are bi-annual meetings with their primary focus upon the scientific accomplishments and professional goals of physics graduate students. The first CAM Conference was held in 2003 in Merida, Yucatan, Mexico, with the responsibilities for hosting subsequent conferences rotating among the three participating countries. Coinciding with the World Year of Physics, the CAM 2005 Conference was the premier event of 2005 for the American Physical Society's Forum on Graduate Student Affairs (FGSA). The conference was held from August 19th to the 21st, 2005, at the Horton Grand Hotel, an elegant Victorian hotel in the heart of San Diego, California. A brief description of the conference organizational process follows, along with a timeline of major organizational milestones. Brief highlights from the conference are provided, and we analyze both quantitative and qualitative results from post-conference feedback from participants. We conclude with important lessons learned that will be of benefit to the Organizing Committee for CAM2007.

Methodology

The original steps in planning CAM2005 were taken by the APS Forum on Graduate Student Affairs—in particular, those FGSA Executive Board Members who were involved in CAM2003 began forming a CAM2005 Organizing Committee in May 2004. Once an Organizing Committee Chair was chosen, the Committee Chair and the Executive Board together determined the conference venue, and the Executive Board

developed a funding proposal to be sent to the NSF. The Committee Chair then began recruiting graduate students from the University of California-San Diego and San Diego State University to form the Local Organizing Committee, as well as representatives from CAP and SMF to form the International Organizing Committee. The various tasks were then delegated to members of the Organizing Committees depending upon their interests, abilities, and location. The members of the Organizing Committees are listed in Appendix A, and a general timeline of organizational activities is given in Appendix B.

Results

This conference met all of the goals set out for it; most importantly, it gave graduate students from different countries the opportunity to gather for an international conference dedicated to their professional development. We had over 100 student participants from all three participating countries. Because of NSF support, we were able to award supplementary travel grants totaling over \$35,000 to 71 U.S. student participants. Additionally, we supported the attendance of 12 plenary and roundtable presenters. Among these presenters were the President of the University of California, Dr. Robert Dynes, as well as NSF Assistant Director for Mathematical and Physical Sciences, Dr. Michael Turner. The scientific program included plenary talks by professors in the areas of Astronomy & Astrophysics; Atomic, Molecular, and Optical Physics; Biophysics; Condensed Matter Physics; and Nuclear/Particle Physics, as well as a special “Interdisciplinary” Physics presentation. These plenary talks were followed by contributed talks from students in each of these research areas, and a student poster session rounded out the scientific portion of the program.

Additional sessions focused on scientific ethics, the graduate physics education systems of Canada, the U.S., and Mexico, and physics education research. There was also a session on pursuing various physics career options, along with a career fair, during which representatives from numerous government and private sector organizations sought to match their available job opportunities with the students seeking employment. Roundtable discussions were also held on scientific ethics, physics education, and careers for physicists; these roundtable discussions included professors from each of the three participating countries, along with a number of student panelists.

There were also numerous opportunities for professional networking among the international conference attendees, including catered coffee breaks between the sessions and an evening banquet aboard a San Diego Harbor cruise. The final conference program is enclosed, and an overview of the program is included in Appendix C.

A formal evaluation process was provided to all conference attendees by means of a survey distributed with the Welcome Package materials; after the conference, we received 41 survey responses. We sought feedback through these surveys on the usefulness of the individual segments of the conference, as well as the overall scientific and collegial atmosphere of the conference. We received significant qualitative comments from both the professors and the student participants (see Appendices D-H for quantitative survey data and qualitative comments). According to the survey responses, the conference was very well received. The collegial atmosphere in particular was of

great value to both the students and professors in attendance. The roundtable discussions accompanying the ethics, education, and careers sessions were not independently evaluated, but their impact was apparent in that the students appreciated the opportunity for feedback and discussion on these topics. While some sessions were of nearly universal appeal (e.g. the plenary sessions), others had a more limited, though still generally positive impact (e.g. the ethics session).

The scientific impact of CAM2005 was certainly very positive. The conference brought together international researchers from a myriad of different specializations, and provided an ideal venue for graduate students of all levels, especially those beginning graduate students seeking to present preliminary research results for the first time in a forum of their academic peers.

Finally, the goal of having significant diversity among the conference attendees was also accomplished. Among the registered student participants at CAM2005, approximately 1/3 (33/105) were women; additionally, there were 31 students from Canada or Mexico (or students of Canadian/Mexican origin attending U.S. institutions). Furthermore, shortly after the conference, several participants took the initiative to organize an online forum for students from all three countries to continue the dialogue begun at CAM2005. While it is hard to quantify the impact of “networking” on the careers of the student participants, it is obvious from the feedback received that the students were well aware of the opportunities afforded them by this conference. As the planning for CAM2007 proceeds, follow-up contacts will be pursued with all CAM2005 attendees in order to gauge the long-term impact of the conference.

Conclusions and Lessons Learned

CAM2005 certainly met its goals of creating an international scientific conference by graduate students by and for graduate students throughout North America, with opportunities for scientific discourse as well as discussion on many topics of interest to young researchers—such as careers, scientific ethics, and international physics education.

During the course of the planning and execution of this conference, several important lessons were learned that will be of benefit in the planning of CAM2007. The first is to ensure a flexible conference schedule, to accommodate last-minute changes. It is also important to have the poster session scheduled for an entire day, allowing people to view the posters at their leisure, rather than schedule only a few hours for poster viewing, which is susceptible to being reduced due to other changes. Second, it is extremely helpful to have commitments from sources of funding as early as possible in the conference planning process.

Third, it is also vital to ensure participation from all three countries as early in the organization as possible. CAP had a member dedicated to serving on the Organizing Committee, and one contact person in Mexico helped to distribute advertising and assist with other organizational activities, but more involvement from graduate students outside the host country would have been extremely beneficial at all stages of the planning. Fortunately, CAP has already begun planning the next CAM Conference—they have

selected one Conference Chair, and they have also begun the venue selection process. Most importantly, several additional members of the CAP are enthusiastic about hosting CAM2007, and at least one graduate student from Mexico who participated in CAM2005 is planning to assist in the organization of CAM2007. Furthermore, the APS Forum on Graduate Student Affairs has recently elected to its Executive Board an International Student Affairs Officer. One of the primary responsibilities of this position is to ensure continued U.S. participation in the organization and attendance of the CAM Conferences.

Another important lesson learned by the CAM2005 Organizing Committees regards the structure of the committees themselves. These committees collectively only had one official Chair; however, the conference has grown and gained sufficient momentum that it would be extremely helpful to appoint two Co-Chairs for CAM2007—ideally, one from the International Organizing Committee and one from the Local Organizing Committee.

Also, the importance of an overall organizational schedule (such as that given in Appendix B) is crucial to successful planning. Constant communication with funding organizations (e.g. NSF) will allow sufficient time for submission of supplemental information if necessary. Furthermore, it is important to be aware that student response is likely to coincide with the posted deadlines. It is estimated that 90% of the attendees submitted registration materials within the 24 hours prior to the submission deadline. Thus, early registration should be encouraged, and deadlines should be set far enough in advance to accommodate tardy responses from attendees.

Overall, the Conference planning proceeded very smoothly—in particular, all interactions with the outside agencies, such as the Conference and banquet venue staff and the graphic artist were very professional, and allowed for ease of decision-making with regards to advertising, website design, catering, A/V needs, meeting rooms, and more. Additionally, though the conference was held under the auspices of the APS FGSA, the larger APS organization provided an enormous amount of logistical and other support. Future Conference organizers should look to the APS for a fantastic model of involvement with the planning of CAM2005. And if the diligence and commitment shown by future organizers matches that of the CAM2005 organizers, then future CAM conferences will no doubt be spectacularly successful as well.

Appendix A. CAM2005 Organizing Committee Members

International Organizing Committee

Kyler Kuehn, University of California-Irvine (Chair)

Dan Beaton, University of British Columbia

Anne Catlla, Northwestern University

Amy Flatten, American Physical Society

Lisa Gerhardt, University of California-Irvine

Michele Irwin, American Physical Society

Kelly Korreck, Harvard-Smithsonian Center for Astrophysics

Trish Lettieri, American Physical Society

Carlos López-Mariscal, Instituto Tecnológico y de Estudios Superiores, Monterrey

Justin Stewart, American Physical Society

Tom Tierney, Los Alamos National Laboratory

Lindley Winslow, University of California, Berkeley

Local Organizing Committee

Debra Bomar, University of California, San Diego

Nicholas Butch, University of California, San Diego

Rae Robertson, University of California, San Diego

Matt Steiger, San Diego State University

Aleksandra Walczak, University of California, San Diego

Appendix B. CAM2005 Conference Planning Timeline

May 2004	Committee Chair Chosen, Funding Proposal Begun
June 2004	Venue Proposals Reviewed, Potential IOC & LOC Members Contacted
July 2004	Venue Chosen
August 2004	NSF Funding Proposal Submitted, Conference Date Chosen, Organizational Phone Conference Calls Begun
September 2004	Canadian IOC Representative Determined
October 2004	Conference Theme Chosen, General Conference Agenda Determined, Graphic Designer Proposals Accepted
November 2004	First Round of Plenary Speakers Contacted
December 2004	Conference Banquet Venue Chosen
January 2005	On-Site Organizational Meeting, Graphic Designer Chosen
February 2005	NSF Supplemental Request Submitted, Mexican IOC Representative Determined
March 2005	Additional Funding Sources Sought, Second Round of Plenary Speakers Contacted
April 2005	Majority of Speakers Confirmed, Conference Banquet Plans Finalized
May 2005	Conference A/V Package Finalized, Conference Publicity Begun, Conference Registration Opened
June 2005	Additional Speakers Chosen, Catering Package Finalized, Additional Sponsors Found, Program Design Begun
July 15 2005	Initial Registration/Abstract Submission Deadline

July 22 2005	Extended Registration Deadline, Letters of Invitation Sent to Foreign Attendees, Attendee Welcome Package Materials Collected
July 29 2005	Final Plenary Speaker Schedule Determined, Final Contributed Speaker Schedule Determined, Late Abstracts Deadline
August 2 2005	Conference Programs Printed, Attendee List Finalized
August 9 2005	Session Chairs Determined, Welcome Packages Finished, Panel Discussion Questions Finalized, Plenary Speaker Travel/Lodging Arranged
August 19 2005	Conference!

Appendix C. Conference Schedule Overview

Friday AM

Registration (with refreshments)

Welcome by Dr. Amy Flatten, APS Director of International Affairs and
Dr. Daniel Arovas, UCSD Department of Physics & Astronomy

Plenary Sessions: Biophysics and Atomic/Molecular/Optical Physics
Dr. Raymond Goldstein, University of Arizona Department of Physics
Dr. Carmen Cisneros, Facultad de Ciencias, UNAM

Coffee Break

Parallel Sessions: Biophysics and Atomic/Molecular/Optical Physics

Friday PM

Lunch

Education Plenary Sessions
Dr. Noah Finkelstein, Department of Physics, University of Colorado at Boulder
Dr. Robert Thompson, Department of Physics & Astronomy, University of Calgary
Dr. Arturo Menchaca-Rocha, Instituto de Física, UNAM

Coffee Break

Education Roundtable Discussion with Education Plenary Speakers

Interdisciplinary Physics Plenary Session
Dr. Arturo Menchaca-Rocha, Instituto de Física, UNAM

Saturday AM

Plenary Session: Nuclear/Particle Physics
Dr. Bonnie Fleming, Department of Physics, Yale University

Parallel Sessions: Nuclear/Particle Physics and Theoretical Physics

Coffee Break

Special Plenary Session: The Intersection of Research and Education
Dr. Robert Dynes, President of the University of California

Poster Session

Saturday PM

Lunch

Poster Session (continued)

Plenary Session: Astrophysics

Dr. Michael Turner, Assistant Director of Mathematical and Physical Sciences, NSF

Coffee Break

Parallel Sessions: Astrophysics and Condensed Matter

Conference Banquet and Harbor Cruise

Sunday AM

Plenary Session: Professional Ethics

Dr. Kate Kirby, Director of ITAMP, Harvard University

Professional Ethics Roundtable Discussion with Plenary Speaker and Additional Panelists

Coffee Break

Plenary Session: Career Options for Physicists

Dr. Matt Anderson, Department of Physics & Astronomy, San Diego State University

Dr. Michael Turner, Assistant Director of Mathematical and Physical Sciences, NSF

Dr. Anthony Smart, Consultant and Specialist in Optical Instrumentation

Dr. Thomas Tierney, Los Alamos National Laboratory

Career Options for Physicists Roundtable Discussion with Plenary Speakers and Additional Panelists

Sunday PM

Career Fair (with refreshments)

Sightseeing trip to Coronado Island (optional)

Appendix D. Survey Responses (Specific Conference Segment Quality):

Note that the sessions were very well received—both the topics chosen and the particular speakers seemed to engage the participants. Of most interest were the scientific plenary session and the education session; the careers session was also of great interest, but the session on scientific ethics was slightly less so.

Appeal/usefulness of plenary talks (41 responses):

Excellent: 23 Good: 13 OK: 5
(88% Excellent/Good)

Appeal/usefulness of education session (36 responses):

Excellent: 13 Good: 18 OK: 5
(86% Excellent/Good)

Appeal/usefulness of ethics session (30 responses):

Excellent: 11 Good: 11 OK: 7 Poor: 1
(73% Excellent/Good)

Appeal/usefulness of career session (34 responses):

Excellent: 18 Good: 10 OK: 5 Poor: 1
(82% Excellent/Good)

Appendix E. Survey Responses (Overall Conference Quality):

Note that the overall appeal of the conference was very high--35 out of 39 (or about 90%) rate the conference as Excellent or Good "overall", as well as with regards specifically to the "social atmosphere".

The scientific usefulness of CAM 2005 was (38 responses):

Excellent: 11 Good: 14 OK: 11 Poor: 1 Awful: 1

The social atmosphere of CAM 2005 was (39 responses):

Excellent: 24 Good: 11 OK: 3 Poor: 1

Overall, CAM 2005 was (39 responses):

Excellent: 18 Good: 17 OK: 3 Poor: 1

Appendix F. Representative Comments from Participating Professors:

"Seems like a huge success--primarily in two goals - creating a conference by + for graduate students, including the international perspective. This is a huge step in creating a community.- giving a broad perspective on physics + allowing for grad student voice in our community"

"Excellent + enjoyable--I have had many subsequent conversations with the other grads + faculty about issues raised in [my] talk"

"I thought this was an interesting and excellent conference, with interested and interesting student attendees. I especially enjoyed the discussions after the presentations and/or during the round table discussions. Attendance seemed to remain very high throughout this meeting, indicating that the students were very interested in the agenda/content."

"Scientifically, CAM2005's size & topical range is very useful to students in this age of increasing specialization of conferences. Socially, grad students from around North America learning about other institutions is certainly useful, especially w.r.t. future careers."

"I was impressed at the choice of the program, the quality of the student presentations, and the high degree of interactivity among all participants."

All respondents would be interested in participating in the next CAM Conference, and all would recommend attendance at CAM to graduate students whom they know.

Appendix G. General Comments from Student Participants

- "Overall, CAM has been the best conference I've ever attended. Nice work."
- "This was one of the best conferences I had the pleasure to attend in recent years."
- "I met many people, learned a lot through the talks, + overall had a very rewarding experience at CAM. I especially enjoyed the plenary talks, + I thought the speakers were well-chosen."
- "Overall, CAM 2005 was great! It's great to present to other graduate students. This was my first time giving an oral presentation and I was happy to have the opportunity. It's less intimidating to present at something like this."
- "I really appreciated that this conference addressed several very important issues that are often not addressed--careers in physics, physics education research and ethics in physics. These presentations were very valuable for me. I appreciated the large number of female participants and female presenters."

Appendix H. Some Student Responses to the Survey Question “What did you like most about CAM 2005?”

- "Exposure to other areas of research at a level I could understand, & absence of professors made it less intimidating to ask questions so it was possible to get more out of talks."
- "opportunity to learn what's not taught at school/other conferences"
- "The efforts taken by our peers to encourage and guide us with physics related career opportunities."
- "The chance to talk informally with great people like Michael Turner."
- "The plenary talks, social atmosphere"