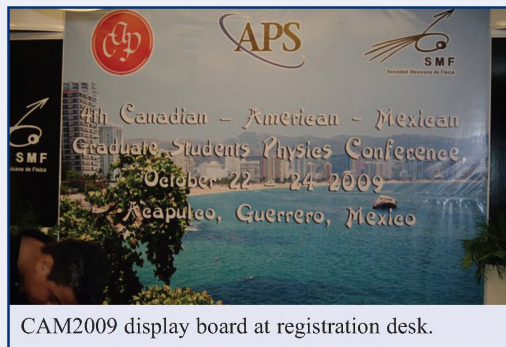


# CANADA-AMERICA-MEXICO 2009 PHYSICS GRADUATE STUDENT CONFERENCE

BY ADRIAN BUZATU, MCGILL UNIVERSITY

The fourth edition of the biannual North-American physics graduate student conference (Canada-America-Mexico 2009) took place from October 22 to October 24, 2009 in Acapulco, Guerrero, Mexico. The conference provided the opportunity for physics graduate students to share their work with fellow students from across North America, as well as network with them in a very attractive tropical environment. A total of 136 graduate students, post docs and professors attended the conference.



CAM2009 display board at registration desk.

This is the report on the CAM 09 conference that was prepared for the Council of the Canadian Association of Physicists by Adrian Buzatu <adrian.buzatu@mcgill.ca> from McGill University, who was the CAP's Graduate Student representative on the international organizing committee.

## CONFERENCE ORGANIZATION

As a real international conference, there was an international advisory committee, an international organizing committee, international invited speakers and international participants.

### International Advisory Committee

Canada was represented by Gordon W.F. Drake (University of Windsor, Director of International Affairs, Canadian Association of Physicists).

USA was represented by Dr. Amy K. Flatten (Director of International Affairs, the American Physical Society).

Mexico, the host country, was represented by Luis Felipe Rodríguez (President of the Mexican Physical Society, Mexico, Radio Astronomy and Astrophysical Center, Morelia, UNAM, Mexico), José Luis Rodríguez López (Director of International Affairs, Mexican Physical Society), Carmen Cisneros (Physical Science Institute, UNAM, Cuernavaca, Morelos, Mexico), Guillermo Espinosa (Physics Institute, UNAM, Mexico City), Octavio Costañón (Nuclear Sciences Institute, UNAM, Mexico City), Victor Romera Rochin (Physics Institute, UNAM, Mexico City) and José Luis Morán López (Faculty of Sciences, UNAM, Mexico City).

### International Organizing Committee

The General Chairman of the International Organizing Committee was José Luis Rodríguez López (Advanced Materials Department, IPICYT, San Luis Potosi, Mexico).

The Canadian Chairman and coordinator was Adrian Buzatu (McGill University, Councillor at Large (Graduate Students) for the Canadian Association of Physicists).

The American coordinators were Ivelisse M. Cabrera, Chairwoman and Coordinator (John Hopkins University, USA) and Benn A. Olsen, Coordinator (Princeton University).

Other Mexican coordinators were Ma. Luisa Marquina (Faculty of Sciences, UNAM, Mexico City), Heinrich Terborg (Physics Institute-UNAM, Mexico City), Brenda Carballo (Nuclear Sciences Institute-UNAM, Mexico City), Guadalupe Mendoza Uribe (Materials Department, IPICYT, San Luis Potosi, SLP, Mexico) and José Ramón Hernández Balanzar (Science and Technology Council of Guerrero, Mexico).

### International Invited Speakers

There were two invited speakers per country.

Canadian invited speakers were Prof. Adriana Predoi-Cross (University of Lethbridge, Alberta, Canada), "Molecular Spectroscopy Applied to Remote Sensing of Planetary Atmospheres" and Prof. Alex Vitkin (University of Toronto, Ontario, Canada), "Biophotonics: Medical Uses of Optical Technology to Diagnose and Treat Disease".

American invited speakers were Prof. Jaymant Kumar (Department of Physics, University of Massachusetts, Lowell, MA, USA), "Recent Developments in Organic Molecular and Polymeric Solar Cells" and Prof. Collin Broholm (Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, USA), "Science and Technology with Neutron Scattering".

Mexican invited speakers were Prof. Karo Michaelian (Physics Institute, Experimental Physics Department, UNAM, Mexico), "Thermodynamic Origin of Life" and Prof. Noel Carbajal (Applied Geoscience Department, IPICYT, San Luis Potosi, Mexico), "Numerical Modeling of Geophysical Fluids Dynamics Phenomena Impacting The Ecology of México".



Prof. Gordon Drake, Michael Steinitz, and Adriana Predoi-Cross pose with 23 of the 32 Canadian student delegates. All are wearing the t-shirts supplied by sponsor, Canberra Inc.

### International Participating Students

Oral presentations were given by 82 students (28 from Canada, 33 from USA and 21 from Mexico).

Poster presentations were given by 36 students (4 from Canada, 6 from USA and 26 from Mexico).

### Conference Program

The conference started on Thursday October 22nd with Welcoming Remarks offered by José Luis Rodríguez López (Mexico), Carmen Cisneros (Mexico), David Ernst (President of the Board of Directors for the National Society of Hispanic Physicists, member of the American Physical Society Executive Board, USA) and Gordon Drake (CAP, Canada).

There were usually three parallel sessions of oral talks. Here is the list of all the sessions in chronological order.

Thursday, Oct. 22, 10h00-10h45

1. Particle Physics I
2. Nanostructures - Electronic Properties, Calculations and Simulations
3. Astrophysics and Cosmology I

Thursday, Oct. 22, 11h00-12h00

1. Particle Physics II
2. Fundamental Physics Phenomena I
3. Astrophysics and Cosmology II

Thursday, Oct. 22, 15h00-16h45

1. Particle Physics III
2. Applied Physics I: Biology, Medicine and Technology
3. Astrophysics and Cosmology III

Friday, Oct. 23, 10h00-10h45

1. Fundamental Physics Phenomena II
2. Superconductivity I
3. Nanostructures - Synthesis and Characterization I

Friday, Oct. 23, 10h00-12h00

1. Fundamental Physics Phenomena III
2. Superconductivity II and Strongly Correlated Electron Systems
3. Nanostructures - Synthesis and Characterisation II

Saturday, Oct. 24, 09h00-10h45

1. Fundamental Physics Phenomena IV and Energy Conservation and Storage
2. Nuclear, Atomic and Molecular Physics
3. Applied Physics: Geosciences and Nanostructured Devices

Thursday night - a banquet was organized at the hotel.

Friday afternoon - the poster and international booths session was organized.

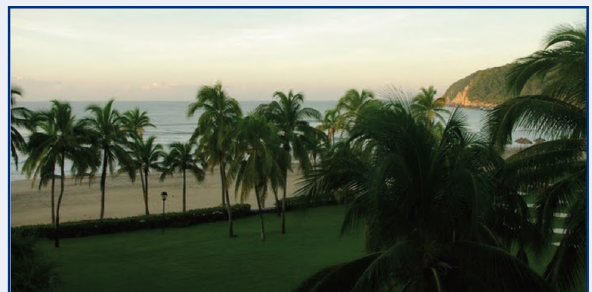
Friday night - a visit to the Acapulco Fortress Museum was organized.

Saturday morning there was a panel discussion with the title "New Frontiers in Physics: Interrelations of Physics and Other Disciplines (Medicine, Biology, Geosciences, Nanosciences, etc.)". The professors at the panel table were: David Ernst (USA), Gordon Drake (Canada), Luis Felipe Rodríguez (Mexico) and Michael Steinitz (Canada).

The panel discussion was followed by the closing remarks given by Luis Felipe Rodríguez (Mexico), José Luis Rodríguez-López (Mexico), Ivelisse Cabrera (USA) and Adrian Buzatu (Canada).

### Conference Venue

The accommodation and the conference were both hosted at the "Fairmont Pierres Marques" Hotel in Acapulco, Guerrero, Mexico, a tourist resort on the beach of the Atlantic Ocean. Situated in the tropical region, the temperatures were around 27 degrees Celsius. The hotel was located directly on the beach and provided three swimming pools. Everybody was more than enchanted by the atmosphere in Mexico and by the short escapades to the beach. A banquet at the hotel and a visit to downtown Acapulco and Acapulco Historic Museum (located at San Diego Fort) was also kindly provided by the local organizers.



A congress venue appreciated by all.

## CANADIAN PARTICIPATION

There were 32 students, 2 invited speakers, 2 other professors, and two booths promoting Canadian universities and the *Canadian Journal of Physics* at CAM 09. The Canadian participation at CAM09 was organized through the Canadian Association of Physicists.

### Canadian Students

Through the generosity of the sponsors, CAP was able to offer 30 scholarships to physics graduate students studying in Canada. A competition was organized. Students were asked to send a CV, a publication list and a letter of support from their supervisor. More than 30 students took part in the competition.

The best 30 applications were selected. Each of the students received a \$500 (CA) reimbursement towards their airfare cost thanks to our generous sponsors (details below), a paid registration fee (\$200 US) thanks to the contribution of CAP and three nights at the hotel (about \$225 US) thanks to the Mexican organizers.

It is to be noted that two other Canadian students attended on their own while paying their own expenses. There were, therefore, 32 Canadian students in total, out of which 28 offered oral talks and 4 poster presentations.

### Canadian Invited Speakers

Initially, the local organizers suggested that each country should nominate 3 names for invited speakers. The CAM09-CAP Committee organized a few phone conferences and came up with a plan to involve the Canadian physics community in the nomination of potential invited speakers. About a dozen names were submitted. Several groups of Canadian graduate students were asked to come up with an ordered list.

Later the local organizers decided to have only 2 invited speakers per country, as to allow more time for student talks. The Canadian organizers submitted the names of the top four recommended speakers and invited the international committee to select the two whom they felt best fit into the program. The international committee selected Prof. Adriana Predoi-Cross, from the University of Lethbridge, who gave a talk on "Molecular Spectroscopy Applied To Remote Sensing of Planetary Atmospheres" and Prof. Alex Vitkin, from the University of Toronto, who gave a talk on "Biophotonics: Medical Uses of Optical Technology to Diagnose and Treat Disease".

### Other Canadian Participants

Two other Canadian professors participated in the conference.

Prof. Gordon Drake participated in his capacity as Director of International Affairs for CAP and the Canadian participant in the International Advisory Committee for CAM09. He made a short presentation about CAP during his welcoming words at the beginning of the conference.

Prof. Michael Steinitz participated in his capacity as Editor of the *Canadian Journal of Physics*. He organized a booth to promote the journal during the conference.

They both participated as panelists in the "New Frontiers in Physics" Saturday morning panel session.

There was another Canadian booth dedicated to promoting Canadian physics graduate departments. CAP collected brochures and posters from the majority of Canadian Universities and they were displayed for the duration of the conference, adjacent to the poster panels. Canadian students offered information about Canadian universities at this booth throughout the conference.

### Sponsors for Canadian Participants

We are grateful to the following Canadian sponsors for their generous contributions: Canberra Inc, Institute of Quantum Computing, Perimeter Institute of Theoretical Physics, Atomic Energy of Canada Limited, Canadian Light Source, Nelson Education, and Plasmonique Inc. Many thanks are due to Francine Ford, Executive Director of CAP, who lead this successful fundraising effort. Thanks to it, 30 Canadian students were funded with \$500 CA each towards their travel expenses, thus making the conference more affordable to more Canadian students.

We are also grateful to the Canadian Association of Physicists who payed the conference registration fee for 30 Canadian students. Its value was \$200 US per person. Also, we appreciate the efforts of the Mexican organizers that made sure that each of the 30 scholarship-winning Canadian participants was provided with complimentary accommodation for three nights, including breakfasts. Through the generosity of the Mexican organizers, Adrian Buzatu, our Canadian student organizer, was provided with two extra days of accommodation to allow him to extend his stay to participate in additional pre and post conference meetings for the organizers. Furthermore, the Mexican organizers covered all of the local expenses for the two Canadian invited speakers, Prof. Adrian Predoi-Cross and Prof. Alex Vitkin (they only had to pay for the transportation to and from Acapulco). Many thanks to the Mexican organizers for this effort!

### CONCLUSIONS

In conclusion, the fourth Canada-America-Mexico Graduate Student Conference in 2009 has been a real success. There were 136 participants in total and they all enjoyed both the scientific environment and the tourist resort. As the Canadian student organizer, I felt honoured to work closely together with my Canadian CAP colleagues, especially Francine Ford, Carmen Harvey and Gordon Drake, as well as with our friends in USA and Mexico.

I encourage Canadian students to participate in the fifth CAM conference, that will be hosted two years from now (in 2011) in the USA.