



XXXIII Antarctic Treaty Consultative Meeting
3rd to 14th May, 2010

Punta del Este - Uruguay

IP 28

Agenda Item: ATCM 15

Presented by: SCAR

Original: English

The Association of Polar Early Career Scientists (APECS): Shaping the Future of Polar Research

The Association of Polar Early Career Scientists (APECS): Shaping the Future of Polar Research

Background

Established in 2006 during the planning stages of the International Polar Year, the Association of Polar Early Career Scientists (APECS) has evolved into the pre-eminent international organization supporting polar researchers in the beginning or early stages of their careers.

APECS represents an international and interdisciplinary body of undergraduate and graduate students, postdoctoral researchers, early faculty members, educators and others with interests in Polar Regions and the wider cryosphere.

APECS' mission is *“to raise the profile of polar research by providing a continuum of leadership that is both international and interdisciplinary in focus, and to stimulate collaborative projects in research and outreach.”*

APECS provides a strong voice for young researchers, enabling information sharing between early-career and more established professionals, promoting and organizing science, education and outreach events, and being actively involved with other polar organizations in the support of polar research.

APECS pursues three overarching goals:

- Facilitate international and interdisciplinary networking to share ideas and experiences and to develop new research directions and collaborations;
- Provide opportunities for professional career development; and
- Promote education and outreach as integral components of polar research and to stimulate future generations of polar researchers.

The Structure of APECS

APECS is governed through democratically elected officers working together in an Executive Committee and an open Council and a directorate similar to an organizational secretariat that is responsible for day-to-day operations, sustaining continuity and strategic planning. Furthermore, professional advice and support from senior colleagues is provided through an Advisory Committee.

Council

The APECS Council, guided by a Council Charter, is composed of individual members who are (self-) nominated and approved by the Executive Committee. Council members contribute to the smooth implementation of APECS activities and contribute regularly to the monthly newsletter, job postings and website content.

Executive Committee

Annually elected by the Council, the Executive Committee manages the organization and approves major decisions, in consultation with the Council. The Executive Committee facilitates project development and works closely with the Council, Committees and Working Groups to implement new initiatives and assure information exchange and oversees the Directorate.

Directorate

The APECS Directorate represents the physical secretariat of APECS and is located in Tromsø, Norway. Providing continuity and serving as the main point of contact for the organization, the Directorate is critical

to the success of APECS and ensures the transfer of institutional knowledge which is critical for an early-career organization whose members and leaders turn over quickly. The Directorate is currently sponsored by the University of Tromsø, the Norwegian Polar Institute, the Norwegian Research Council and the Tromsø Kommune with funding confirmed until June 2011. APECS is seeking additional funding to maintain its Directorate beyond June 2011 and is working to develop a sustainable funding plan.

Standing Committees

Research Activities Committee

The Research Activities Committee links APECS and international scientific groups such as the Permafrost Young Researchers Network. Structured by research disciplines with an overarching, cross-disciplinary leadership, the Research Activities Committee ensures the sharing of information from various disciplines with the entire APECS membership and encourages cross-disciplinary and interdisciplinary cooperation.

Education and Outreach Committee

The Education and Outreach Committee is responsible for helping APECS disseminate information to wide audiences of all ages and provide support to national education and outreach programmes. One key activity of the Education and Outreach Committee has been the creation of the IPY book: Polar Science and Global Climate: An International Resource for Education and Outreach to be released in June 2010.

National Committees

APECS encourages and supports the formation of national chapters which facilitate the strengthening of national networks of early-career polar researchers and coordinate polar career development, education and outreach activities on a national level. Active national committees exist in Brazil, Chile, Germany, Italy, Norway, Portugal, Russia, South Africa, Sweden, and the United Kingdom.

Working Groups

Working groups typically consist of 3-10 individuals cooperating on a clearly outlined project. They enable individual APECS members, or groups of members, to focus on an activity or projects related to the polar regions or the wider cryosphere and develop a process and timeline for implementation. Currently, working groups exist for APECS' mentoring programme, field sites initiative, establishing an acronym definitions database and climate change education in various languages.

Partnerships and collaborations

Since its inception, APECS has strived to develop a strong network of partnerships with international polar organizations and scientific bodies. In 2008, APECS signed a Memorandum of Understanding (MoU) with the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC). As a result of the MoU, APECS was invited to nominate delegates for all SCAR standing scientific groups, research projects and conference planning committees. The APECS representatives on SCAR committees serve as a valuable link between both organizations. In addition to close partnerships with SCAR and IASC, APECS works with a number of other polar and scientific organizations in various capacities, examples of which are listed in Appendix A.

Capacity building, education and outreach

The core of APECS' work focuses on capacity building aimed at students and early-career researchers as well as education and outreach regarding polar research. Capacity building takes various forms – from the organization of field schools to participation in international conferences (as detailed in Appendix B) to a dedicated mentorship programme, career development workshops and virtual poster sessions.

Career development workshops

APECS has initiated a number of interdisciplinary career development workshops, which SCAR and other organisations often co-sponsor. The workshops encourage the sharing of ideas, concerns and expectations and, through a series of devoted presentations and practical sessions, help early-career researchers gain valuable insight from more experienced colleagues (see Appendix C).

Field schools

APECS has participated in the organization of various polar field schools and plays an active role in helping members find funding to attend these programmes. The APECS Field School Network, linked via the APECS website, is a community of connected field schools concerned with the polar regions, the cryosphere and climate change. APECS co-organised an APECS/IARC International Field School at Bellingshausen Station, Antarctica in January 2010 and an APECS/UNIS/UArctic Interdisciplinary IPY Polar Field School in Svalbard (June – July 2009). Two more Arctic field schools are planned for 2010 and 2011. APECS is also working with *Students On Ice* to create additional opportunities for young researchers to learn about and experience the polar regions.

Mentorship programme

Launched in February 2010, this initiative is an extension of the mentor panels that APECS runs at major conferences. The mentorship programme provides an unprecedented opportunity for more experienced polar researchers and professionals to network with early-career researchers and share their experience and advice. As part of this programme, APECS has created an online database of mentors (<http://apecs.is/mentors>) who are willing to share their knowledge with and offer guidance to talented early-career researchers.

Virtual poster session

Sponsored by a grant from the Nordic Council of Ministers, the virtual poster session is an initiative aimed at bringing the poster presentation beyond the walls of the conference hall and creating an online database of polar research poster publications open to the public. It enables APECS members to discuss their results in a collegial fashion during conference calls, receive feedback from peers, improve their presentation skills and establish new collaborations. Visit <http://apecs.is/virtual-poster-session> for more information.

Education and outreach

APECS provides regular updates about its activities through a monthly newsletter, emails and its website (<http://apecs.is>), which also serves as a platform for community outreach and communication. Individual APECS members contribute to outreach activities by giving talks to schools and the wider public and by contributing to initiatives such as the IPY Polar Resource Book, which has been developed in collaboration between the APECS and IPY Education and Outreach Committees. Further projects such as an APECS Polar Policy Essay Contest, coordinated in collaboration with the Antarctic Treaty Summit International Board, and Frost Bytes, an initiative by APECS and US National Science Foundation's Arctic System Science Thermakarst (ARCSS TK) research project, are actively reaching out to the community by engaging elementary, high-school and tertiary students and the wider public. Frost Bytes, for instance, involves the creation of a series of short audio and video messages from researchers working to help understand the coldest regions of our planet.

Sustaining APECS into the future

The International Polar Year has encouraged many new enthusiastic and talented young researchers to commit to polar research pathways in order to help better understand the world's polar systems. This motivation and momentum needs to be retained by

- securing funding for research in polar regions;
- an adaptation of academia to changing societal needs and education and outreach activities; and
- maintaining and expanding joint efforts to develop leadership and career skills.

The APECS membership body is eager to make lasting and committed contributions in pursuit of these goals, but to achieve extensive societal benefits and sustained success requires strong national and international partnerships.

Appendix A. Partners and Collaborators

APECS fosters and honours its working relationships with numerous international organisations, such as:

- Antarctic Geologic Drilling Programme (ANDRILL)
- Arctic Portal
- Arctic Research Consortium of the US (ARCUS)
- European Polar Board
- International Antarctic Institute (IAI)
- International Arctic Research Center, University of Alaska Fairbanks
- International Arctic Social Sciences Association (IASSA)
- International Association of Cryospheric Sciences (IACS)
- International Arctic Science Committee (IASC)
- International Council for Science (ICSU)
- International Polar Year (IPY) International Programme Office (IPO)
- International Permafrost Association and the Permafrost Young Researchers Network (PYRN)
- Scientific Committee on Antarctic Research (SCAR)
- Social Sciences and Humanities Antarctic Research Exchange (SHARE)
- Students on Ice
- UK Polar Network (UKPN)
- University of the Arctic (UArctic)
- University of Tromsø, Norwegian Polar Institute, Research Council of Norway, Tromsø Kommune
- US Arctic Research Commission
- US National Science Foundation (NSF)
- World Academy of Young Scientists (WAYS)
- World Climate Research Programme's Climate and the Cryosphere (CliC) Project
- World Meteorological Organization (WMO)
- World Wildlife Fund (WWF)

Appendix B. APECS participation in organizing major conferences

APECS participation in steering, science or planning committees or responsible for organizing early-career research activities at international conferences in alphabetical order (past and planned):

- 11th International Symposium on Antarctic Earth Sciences (ISAES) in 2011
- Antarctic Treaty Summit (Washington DC, USA, 30 November – 3 December 2009)
- Arctic Science Summit Week (2011 in Seoul, Korea; 2010 in Nuuk, Greenland; 2009 in Bergen, Norway; 2008 in Syktyvkar, Komi Republic, Russia; and 2007 in, Hanover, New Hampshire)
- First World Young Earth Scientists (YES) Congress (Beijing, China, 25 – 28 October 2009)
- International Polar Year Oslo Science Conference (Oslo, Norway, 8 – 12 June 2010)
- International Union of Geodesy and Geophysics (IUGG) XXV General Assembly (Melbourne, Australia, 28 June – 7 July 2011) (though cooperation with IASC)
- SCAR Open Science Conference (Buenos Aires, Argentina, 30 July – 11 August 2010; St. Petersburg, Russia, 8 – 11 July 2008)
- US National Science Foundation: Planning meeting for Antarctic Integrated Systems Science Program (13 – 15 June 2007)

APECS panel discussions at major conferences in alphabetical order (past and planned):

- 5th Northern Research Forum (NRF) Open Assembly – Seeking Balance in a Changing North Anchorage, USA, 24 – 27 September 2008. Also planning for October 2010 in Oslo
- 6th International Congress on Arctic Social Sciences (ICASS) (Organized with the Northern Research Forum)
Nuuk, Greenland, 22 – 26 August 2008
- 10th International Symposium on Antarctic Earth Sciences (ISAES)
Santa Barbara, California, 26 – 31 August 2007
- 11th International Circumpolar Remote Sensing Symposium
Cambridge, England, 20 – 24 September 2010
- American Geophysical Union (AGU) Fall Meeting
San Francisco, USA: 13 – 17 December 2010; 14 – 18 December 2009; 15 – 19 December 2008; 10 – 14 December 2007; 11 – 16 December 2006
- American Geophysical Union/American Society of Limnology and Oceanography (ASLO)
Portland, Oregon, USA, 22 – 26 February 2010
Nice, France, January 2009
Newfoundland, Canada, 8 – 13 June 2008
Florida, USA, 2 – 7 March 2008
- American Meteorological Society's 10th Polar Conference on Meteorology and Oceanography
Madison, Wisconsin, USA, 18 – 21 May 2009
- Annual Antarctic Conference
Christchurch, N.Z., 8 – 9 July 2010
Auckland, N.Z., 1 – 3 July 2009
Dunedin, N.Z. 30 June – 2 July 2008
- Antarctic Climate Evolution Conference
Granada, Spain, 7 – 11 September 2009
- Antarctic Treaty Summit: Science-Policy Interactions in International Governance
Washington, DC, USA, 30 November – 3 December 2009
- Arctic Forum Young Investigator Luncheon (Organized by ARCUS and APECS)
Washington DC, 13 – 15 May 2008
- Arctic Frontiers Conference
Tromsø, Norway, 18 – 23 January 2009 and 24 – 29 January 2010

- Arctic Science Summit Week
Bergen, Norway, 23 – 28 March 2009
Syktyvkar, Russia, 14 – 20 March 2008
Hanover, New Hampshire, USA, 14 – 20 March 2007
- Challenger Conference for Marine Science: Advances during IPY and future challenges for early-career scientists: Discussion and inspiration session for early-career scientists. Organized in association with the British Antarctic Survey and the UKPN
Bangor, India, 8 – 11 September 2008
- European Geosciences Union
Vienna, Austria, 19 – 21 April 2009
- European Science Open Forum (ESOF)
Torino, Italy, 2 – 7 July 2010
- Gordon Conference on Polar Marine Science
Tuscany, Italy, 15 – 20 March 2009
- Ice and Climate Change: A View from the South (VICC 2010)
Valdivia, Chile, 13 – 15 February 2010
- International Science Conference: Marine research in polar areas of the Earth in IPY 2007-2008
St. Petersburg, Russia, April 21 – 12, 2010
- International Symposium on Sea Ice in the Physical and Biogeochemical System
Tromsø, Norway, May 31 – June 4, 2010
- Jokkmokk Winter Conference
Jokkmokk, Sweden, 1 – 4 February 2009 and 2010
- MOCA-09 - IAMAS, IAPSO and IACS Joint Assembly
Montreal, Canada, 19 – 29 July 2009
- Polar Law Symposium
Akureyri, Iceland, , 10 – 12 September 2009
- SCAR Biology Symposium
Sapporo, Japan, 1 – 3 July 2009
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS): Careers in Polar Research: Conversations with Scientists
Salt Lake City, Utah, USA, 9 – 12 October 2008
- State of the Arctic
Miami, Florida, USA, 16 – 19 March 2010
- Swedish Polar Week, Ånn, Sweden
19 – 24 April 2010

Appendix C. APECS career development workshops over the last three years

- 9th Annual ACUNS International Student Conference on Northern Studies (Whitehorse, Canada, 2 – 5 October 2009)
A panel/workshop at this conference was hosted by APECS together with The Association of Canadian Universities for Northern Studies (ACUNS) and Yukon College and attended by approximately 250 delegates (including students, postdoctoral scholars, young faculty, government and non-governmental representatives as well as a dynamic roster of speakers and panellists from around the world).
- 11th International Circumpolar Remote Sensing Symposium
Scott Polar Research Institute, Cambridge, England, 20 – 24 September 2010
A one-day workshop at the beginning of the conference included an APECS mentor panel.
- APECS IPY Oslo Science Conference Career Development Workshop
University of Oslo, Oslo, Norway, 5-7 June 2010.
Sponsored by the Research Council of Norway
- APECS Sweden Career Day
Stockholm, Sweden, 20 January 2010
Hosted by APECS Sweden and attended by approximately 35 graduate students from Stockholm University.
- APECS Sweden: Interdisciplinary Science Workshop for Early Career Polar Scientists
7 – 9 May 2008, Stockholm Archipelago
Organized by APECS Sweden and attended by 25 early-career Arctic and Antarctic researchers from a range of disciplines and 13 nationalities, all of whom had ties to research institutions in Sweden.
- Arctic in Rapid Transition Initiation Workshop (ICARP II) (Fairbanks, Alaska, 7 – 9 November 2009)
A workshop co-sponsored by APECS and initiated and run by APECS members.
- IMPETUS 2008 – Polar Ocean Observation and Monitoring (St. Petersburg, Russia, 19 – 22 November 2008)
Jointly organised by the Otto-Schmidt Laboratory for Polar and Marine Research in Saint-Petersburg (OSL), APECS and the Permafrost Young Researchers Network (PYRN) and attended by 85 young researchers from 20 countries. Financial support was received from the German Federal Ministry of Education and Research, the Arctic Ocean Science Board (AOSB), the U.S. Arctic Research Commission (USARC), the Gordon & Betty Moore Foundation (GBMF), the British Antarctic Survey (BAS), the Leibniz Institute for Marine Science (IFM-GEOMAR), Alfred-Wegener-Institute for Polar and Marine Research, the Integrated School of Ocean Sciences (ISOS), IASC, SCAR, CliC, and Aanderaa Instruments.
- International Planning Workshop for IPY Youth and Early-career scientists (Stockholm, Sweden, 26 – 30 September 2007)
The first international meeting by the International Youth Steering Committee and APECS funded by the IPY International Programme Office (IPO), with additional support from the Norwegian and UK National IPY Committees, the Arctic Research Consortium of the US (ARCUS), and New Generation of Polar Researchers (NGPR).
- IPY International Early-career Researcher Symposium (Victoria, BC, Canada, 4 – 8 December 2009):
Hosted by APECS together with the Northern Research Forum, ArcticNet, and the Canadian Polar Commission (thanks to the generous support of the Canadian Federal IPY Programme) and attended by 70 international young researchers. (See www.apecs.is/victoria09 for more information.)
- New Generation of Polar Researchers Symposium (Colorado Springs, CO, USA, 4 – 11 May 2008)
Organized by Susan Weiler, Sheldon Drobot, and Jenny Baeseman, and funded by the US National Science Foundation (NSF), this workshop brought together advanced graduate students and recent Ph.D. graduates conducting independent research during the 2008/09 IPY.
- SCAR/IASC IPY Open Science Conference: Polar Research – Arctic and Antarctic Perspectives in the International Polar Year (St Petersburg, Russia, 8 – 11 July 2008)
Hosted by APECS in collaboration with SCAR and the International Arctic Science Committee (IASC) and attended by more than 100 APECS members and representatives from funding agencies and research

councils. Travel funding for 16 young researchers was provided by the International Glaciological Society (IGS), the World Meteorological Organization (WMO) and IASC.

- UK Polar Network (UKPN, a national committee affiliated with APECS) Career Skills Workshop series: Hosted by UKPN members and institutions across the UK with 30-60 participants at each event (See the events section on www.polarnetwork.org for more information).
Science Communication (January 2011, Aberdeen, Scotland)
Physical Evidence of Polar Environmental Change (November 2010, Loughborough, England)
Variability in Polar Climates: Past, Present, and Future (April 2010, Leeds, England)
Cryospheric Sciences (November 2009, Sheffield, England)
Arctic Marine Sciences (October 2009, Plymouth, England)
Polar Atmospheric Sciences (April 2009, Cambridge, England)