



Administration

CET was renewed at the 2011 General Assembly under chairmanship of Dr David Fraser (Australia). Vice-chair Dr David Fairbairn (UK) succeeded as Chair in July 2012, Prof Necla Ulugtekin (Turkey) becoming new vice-Chair.

Approved Terms of Reference (ToR) collectively addressed the three basic functions of the Commission on Education & Training (CET): to monitor educational provision in the field of cartography; to advise on and to deliver educational material in varying arenas; and to consider the impact of generic research and experiences in education at all levels.

CET (2011-2015) has addressed its ToR by maintaining an overview of cartographic education worldwide; by delivering presentations, papers, workshops and contributions to other programmes, which focus on educational material in the subject of cartography; and by investigating and reporting on technologies, concepts and methods of educational and training courses. Specifically, CET has advanced during 2011-2015 by presenting views and experiences on novel topics (e.g. Massive Open Online Courses, manpower planning), maintaining a global overview of educational initiatives (e.g. new MSC courses), contributing to novel projects (e.g. IMY), and highlighting cartographic education, and giving advice, to associated groups.

Outputs

Presentations by members of CET have been delivered at the 25th and 26th International Cartographic Conferences (ICC) in Paris (July 2011) and Dresden (Aug 2013), each including several sessions devoted to education at all levels, from kindergarten to CPD, and moderated by the CET. The 2015 ICC in Rio de Janeiro will also include four education sessions. A keynote at the ICA-supported GeoCart2012 conference in Auckland, New Zealand (Sept 2012) addressed broad educational issues. Commission members have delivered presentations on educational content and methods of delivery to international meetings organised by

- sister societies e.g. International Society of Photogrammetry and Remote Sensing (ISPRS)
- ICA member nations e.g. the Bulgarian Cartographic Association
- commercial affiliate members e.g. ESRI

Many of these presentations have been worked up into **Papers**, published in conference proceedings (e.g. *Advances in Cartography and GIScience Vol 2* from Paris; *Cartography from Pole to Pole* from Dresden).

Meetings

CET has engaged in several **Symposia**:

- pre-conference 'Sharing Knowledge', Dresden, Germany (Aug 2013), with other ICA Commissions: Cartography & Children, Maps & Graphics for Blind & Partially Sighted People, and Planetary Cartography (*Proceedings* available)
- joint symposium with ISPRS Commission VI, Wuhan, China (May 2014), which addressed topics related to education in the geo-spatial sciences (*Proceedings* available in ISPRS *Archives* and *Annals* series)
- CET participated in special sessions on education, and meetings on renewing the Body of Knowledge, at the Association of American Geographers, Chicago, USA (April 2015) (reported in forthcoming issue of *Cartographic Perspectives*, guest-edited by the Commission chair)
- a pre-conference (ICC) event in Curitiba, Brasil (Aug 2015), with the ICA Commission on Maps & the Internet, will incorporate a workshop on Mapping in the Cloud (Prof Michael Peterson, USA), and a range of presentations on common topics related to the web and education.



Prof Jorge Rocha at the joint workshop, Wuhan University

Formal knowledge transfer in the form of **Workshops** is an important ToR of CET. In Wuhan, China, in May 2014, a 5 day practical hands-on workshop was delivered, in conjunction with the ICA Commission on OpenSource Geospatial Technologies. Prof Jorge Rocha (Portugal), assisted by Dr Zhijie Zhang (China), and the CET Chair, delivered a well-received set of integrated exercises to over 35 students from China, Russia, India and the Philippines.

Developments

In terms of further **Projects**, CET is intimately involved in the roll-out of the UN-endorsed, and ICA-managed, International Map Year (IMY). The Chair of CET is on the IMY Working Group, and has contributed a chapter, with exercises, on 'Education in cartography' in the online textbook *The World of Maps* (also translated into French, Spanish and, soon, Chinese) (www.mapyear.org). CET was consulted (2014) on planned curricula for the African GeoSpatial Sciences Institute (Tunisia).

Communication

The activities of the Commission have been reported regularly in *ICA News* and in the ICA page of *GIM International* magazine.

Reporting of issues related to education and training is also evident in the monthly editions of *eCarto News*, prepared by David Fraser and incorporating items trawled from the web, of general interest to all cartographers around the world. *eCarto News*, available on the main ICA website (www.icaci.org), grew out of the regular newsletter about educational and associated topics which David compiled during his chairmanship of CET 2007-2012 (available on the Commission's website). Our outreach is enhanced by the website (<http://lazarus.elte.hu/cet/>), still maintained by Prof Laszlo Zentai (Hungary), previous Chair of the Commission, and now Secretary-General of ICA.



CET business meeting, ICC Dresden

The biennial **Business meeting** of CET, at the ICC in Dresden, was a valuable 'mid-term' check on progress. This meeting, attended by many Commission members, included open discussion on

- further capacity building in developing countries
- sources for online materials
- Commission website and publications
- inter-society collaboration
- cartography in high schools
- emerging technologies
- mapping competitions
- membership of the Commission

These topics helped inform **Future plans** for the Commission, with modified ToR (2015-2019) addressing these fundamental topics, along with

- curriculum development, including developments in determining a specific 'Body of Knowledge' for cartography
- accreditation of educational programmes
- research training in cartography
- best practice in promoting cartography in universities
- development of online courses

The Commission seeks engagement from all cartographers to address these issues.