



# GEMOC's international links



## BACKGROUND

**G**EMOC HAS STRONG INTERNATIONAL LINKS and these broadened through 2005. Active links include funded programs, but have since broadened to include substantial collaborative programs in France, Norway, Germany, United Kingdom, Canada, USA, Taiwan, Italy, South Africa, China, Brazil, Japan, Thailand and the former USSR.



*Sue, Bill and Ming visiting the MC-ICPMS lab of Dr Fuyuan Wu at the Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing.*

## EXAMPLES OF PROJECTS IN ASIA

- nature and geophysical signature of the lithosphere in southeastern China
- crust-mantle interaction in southeastern China: the origin of the Yanshanian Granites and evolution of southeastern China
- trace element and isotopic characteristics of zircon as indicators of granite magma evolution
- evolution of the lithosphere in northwestern China (Tianshan Mountains in Xinjian)
- metallogenesis of southeastern China
- crustal evolution, basaltic volcanism and basin development, north China
- mantle processes in the mantle wedge above the subduction zone in Japan
- thermal contrasts and paleogeotherms in Siberia, Mongolia, eastern China
- diamond exploration, tectonism, and geophysical nature of the lithosphere, Siberia and East Asia
- mantle terranes and tectonic analysis, Siberia
- lithosphere extension and geodynamic processes in east Asia (including the Taiwan region and Tibet)

## FUNDED COLLABORATIVE PROJECTS COMMENCED OR ONGOING IN 2005 INCLUDE:

- The time scales of magmatic and erosional cycles, with Professor C. Hawkesworth (Bristol University), Dr M. Reagan (University of Iowa) and Dr J. Kirchner (University of California).
- The nature of lithosphere extension in the Taiwan region and implications for geodynamics in eastern China, with Professor S-L Chung, National University of Taiwan, relevant to the research project of Dr Kuo-Lung Wang (Macquarie University Research Fellow).
- *TerraneChron*<sup>®</sup> studies to unravel the timing and tectonic history of regions in Tibet was initiated as a collaborative program with the National University of

Taiwan, and have expanded to include collaboration with Nanjing University.

- Collaboration with colleagues at the University of Jean Monnet, St Etienne, including Professor Jean-Yves Cottin and Dr Bertrand Moine (with reciprocal funding from both sides). A formal agreement between the two universities includes PhD exchange, academic exchange and research collaboration relevant to the nature of the lithosphere in the Kerguelen Archipelago, Crozet Islands and the Hoggar region of Algeria.
- The age of the Earth's core as estimated from  $^{182}\text{Hf}$ - $^{182}\text{W}$  and  $^{238,235}\text{U}$ - $^{206,207}\text{Pb}$  chronometers, a collaborative project with Professor A. Halliday (University of Oxford).
- A project on the geochemistry of amphiboles and metasomatic styles was commenced with Professor Massimo Coltorti and Dr Costanza Bonadiman from the University of Ferrara and Professor Coltorti visited GEMOC in early 2005, supported by a European Union Grant.
- Igneous rocks, mineral deposits, lithosphere structure and tectonic setting: southeastern China and eastern Australia. This collaboration with Nanjing University has expanded from an AusAID grant under the ACILP scheme and sponsored visits to GEMOC by Professors Xisheng Xu and planned visit by Dr Hu Xiumian in 2006.
- Lithosphere Mapping and crustal evolution in the Dharwar Craton, India with Dr E. Babu (funded by a Boyscast Fellowship from India) and Dr Bashkar Rao, both from the National Geophysical Research Institute, Hyderabad. Rio Tinto also contributed funding and samples.
- Studies with Professor Jianping Zheng (China University of Geosciences, Wuhan) continued on the evolution of the lithosphere beneath several parts of China, and the UHP metamorphism of Dabie-Sulu peridotites.
- Analysis of off-craton lithospheric mantle in the East Central Asia Orogenic Belt, with Dr V. Malkovets, Novosibirsk.
- *TerraneChron*<sup>®</sup> analysis of Proterozoic terrains in Africa, North America and Europe, with WMC Resources and BHP-Billiton.
- Tectonic domains in southern Norway and Mozambique using *TerraneChron*<sup>®</sup>, with Professor T. Andersen (University of Oslo) and Dr B. Bingen (Norwegian Geological Survey).
- Age and magma sources of Chilean Cu-porphyrries, with Codelco (Chile) and the CSIRO Division of Exploration and Mining (Perth)



*Sue O'Reilly, Jean-Yves Cottin (St Etienne) and Else-Ragnhild Neumann examining xenoliths from Algeria.*



**The French Connection** - GEMOC's PhDs and postdocs Guillaume Delpéch, Michel Grégoire, Stéphanie Touron, Olivier Alard and Bertrand Moine with Sue O'Reilly at Stéphanie's thesis defense.

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*Professors Xisheng Xu  
in Nanjing.*

- A new MOUs was negotiated with the United Arab Emirates University and it is anticipated that this will be signed off in early 2006, opening the way for funded collaborative projects.

*Refer to the Research Program and Postgraduate sections of this Report for details of other projects.*