

GREETINGS

There is lots of news for the International Division as we close down this calendar year and look forward to our future as the International Section (See "Hot Topics"). We hope that the "International Year of Planet Earth" has been a good one for you and yours and that 2009 will bring peace, joy, and happiness.

CHANGING OF THE GUARD

The Nominating Committee proposed that we keep the same management board for this transition period from Division to Section. This was voted on and unanimously accepted at our Annual International Division business meeting. We are hoping that international members will show their enthusiasm for participating in the new International Section and we can start including them in our planning efforts.

ACTIVITY HIGHLIGHTS

The International Division provided financial assistance through the **award of travel grants** to eight professionals to attend the 2008 GSA Annual Meeting. These colleagues represented five countries including Bangladesh, India, Israel, Italy, and the United Kingdom. A letter from one of the awardees is presented in the "Why Participate" section.

The International Division 2008 Distinguished Career Award was presented by Paul Robinson, International Division President, to Dr. Rolf Emmerman at our annual business meeting. The nomination and acceptance speeches are printed below for those who missed this event.

Nomination Presentation, by Paul Robinson

It is my pleasure to introduce Professor Rolf Emmermann, of Potsdam, Germany, the winner of the 2008 GSA International Division Distinguished Career Award. Prof. Emmermann is a leading international scientist who has made extraordinary contributions to the geosciences in several roles. He served for 15 years as Director of the GeoForschungsZentrum (GFZ), Potsdam, Germany, a national geoscience research center set up in 1991, following German reunification. Professor Emmermann was the first Director of the Institute and has been responsible for its direction and accomplishments since its inception. During his 15 years as Director, the GFZ grew to include a staff of nearly 700 and gained international recognition for its innovative science, particularly in the fields of mineralogy, geochemistry, geophysics and remote sensing. The GFZ is currently the leading geoscience institute in Germany and one of the most prominent in

Europe. It is famous not only for cutting-edge scientific research, but also for responding to the needs of society.

For example, immediately after the deadly earthquake and tsunami that struck Indonesia in 2004, Professor Emmermann sought funding from the German government to set up a tsunami early warning system, which is now in place. Under Professor Emmermann's direction, the GFZ also aids and mentors young scientists from developing countries, allowing them to use state-of-the-art analytical equipment and to interact with established scientists.

Professor Emmermann is one of the world's most effective supporters of scientific research drilling. He first became involved with research drilling as a participant on DSDP and ODP cruises in the Atlantic, Pacific and Indian Oceans. As a result of this experience, he became a strong advocate for continental drilling and in 1986 he became Coordinator of the German Continental Deep Drilling Project (KTB). The KTB sampled nearly 10 km of continental crust in southern Germany, providing new insights into the tectonic evolution of Europe, the 3-dimensional structure and composition of the crust and the relationship between geophysical data and crustal lithology. The scientific success of this project was due largely to Prof. Emmermann who served as the Scientific Director of the program from 1989-1995. Professor Emmermann led a team of over 150 scientists who collected a vast array of core and borehole data, all of which was carefully integrated with the local geology and regional structure.

The successful completion of this decade-long venture was a remarkable achievement in its own right but it had implications far beyond this one project. Building on the success of the KTB, Prof. Emmermann vigorously pursued establishment of the International Continental Drilling Program (ICDP). He organized a coordinating committee, held an international conference attended by 250 scientists from around the world, and in 1996 signed a MOU with Germany, China and the USA formally establishing the ICDP. The membership now stands at 17 countries and 2 corporate affiliates, and negotiations are underway with several additional countries that wish to join. The ICDP owes its existence to the vision, scientific knowledge, determination and political skills of Professor Emmermann. Headquartered at the GFZ since its inception, the ICDP has carried out a highly successful program of research drilling throughout the world. Working with a relatively small budget, the ICDP has produced vast amounts of valuable information on meteorite impact structures, ultrahigh pressure metamorphism and tectonics, volcanic and hydrothermal activity, fault characteristics, paleoclimates and natural resources. The success of this program is due

in large part to the scientific management and oversight provided by Prof. Emmermann.

Professor Emmermann was trained as a geochemist and his personal research has involved the study of igneous rocks in a number of different environments. He has focused on four main areas of research: study of Mesozoic igneous complexes in Namibia related to rifting of the African margin, investigation of oceanic seafloor basalts and gabbros utilizing the DSDP and ODP, as well as drilling projects in Iceland and Cyprus, study of Andean volcanism and investigation of continental crust utilizing deep drilling. In addition to carrying out personal studies, Professor Emmermann was typically the leader or coordinator of these projects, which involved graduate students, post-doctoral fellows and numerous colleagues.

Professor Emmermann has had a dramatic impact on international geoscience over a period of 30 years. His contributions extend from development of a new world-class scientific institute to establishment and direction of the International Crustal Drilling Program. His scientific knowledge, energy, enthusiasm and dedication have created new research opportunities for geoscientists from around the world. He is an ideal selection for the 2008 GSA International Division Distinguished Career Award.

Acceptance Speech by Dr. Rolf Emmermann I am very glad and deeply honored to receive this prestigious award from the International Division and the GSA Council.

Thank you, Paul, for your citation and your generous remarks. I have profited immensely from our long-term friendship and fruitful collaboration over the years. I also wish to extend my sincere thanks to my colleagues and friends Bill Fyfe and Marc Zoback for their continuing support and sage advice on so many occasions. And finally, my thanks to the GSA for this distinction.

The geosciences are progressing fast. I studied geology in pre-plate tectonic times, and during my professional career I have experienced two major revolutions that fundamentally changed our view on the nature and workings of planet Earth. The first, the plate tectonic revolution, still was essentially restricted to the solid Earth. But the second encompassed the entire Earth as a system, from the inner core of our planet to its outer magnetosphere. This System Earth is highly dynamic and subject to perpetual change. It is comprised of a multitude of subsystems which are linked by numerous complexly interwoven cycles. Processes operate on a vast range of spatial and temporal scales with intricate patterns of interaction that preclude simple predictability. Current research, therefore, is focussed on monitoring and modelling of key geological processes and on quantifying the interference of mankind with parts of System Earth.

The German poet Bertolt Brecht, in his play about the life of Galileo Galilei, captured the turning-point of astronomy in the words: "I tell you, astronomers did not progress for a thousand years because they did not have a telescope." In geology, scientific drilling has become our "telescope". The turning-point in our science was the proof of the Seafloor Spreading Hypothesis by a series of drillings into the ocean floor conducted by the famous Glomar Challenger in the early stages of the Deep Sea Drilling Project. Immediately after the internationalization of this US-American program, I had the opportunity as a young professor at the University of Karlsruhe to participate in this research frontier of the Earth Sciences. And it was this experience, the intense discussion about science goals, research strategies, drilling targets and site selection as well as the dependence on and need for appropriate technologies in order to achieve the scientific goals, that greatly influenced my later career.

With the progress of ocean drilling and the confirmation of the theory of plate tectonics it became evident that we had to reconsider all our views about the evolution and dynamics of the continents. Because our models on the architecture, properties and state of the continental crust at that time were mainly based on surface geology, geophysical deep sounding and laboratory experiments, "ground truth" was required and that could only mean direct observation and testing through drilling. All major industrialized nations, therefore, in the 1970's started initiatives for continental scientific drilling.

In Germany, we began development work for the concept of a national Continental Deep Drilling Program in the early 1980's. This concept from the very beginning was centred on a super deep borehole embedded in a large-scale R&D program. There were two reasons for this: First, we wanted to obtain fundamental data on the thermal structure of the crust and on the crustal stress field by drilling down to the present-day brittle/ductile transition; and second, we wanted to push the development of innovative methods and new technologies by advancing the frontiers of Earth drilling. Out of this effort came Germany's first "big research project" in the geosciences, the KTB. I had the good fortune to be intimately involved with the KTB from beginning to end, as scientific coordinator and director. The program achieved all its major goals and significantly enhanced our knowledge on the makeup and functioning of the continental crust in the context of System Earth.

The integrated scientific and technical approach of the KTB provided a completely new perspective on the role for scientific drilling in modern Earth System research and strongly promoted the establishment of the International Continental Scientific Drilling Program, the ICDP. This program, which was initiated at the 1st International Conference on Continental Scientific Drilling, held in Potsdam in 1993, is supported by 17 countries and has

executed a number of spectacular drilling projects all over the world.

In my country, the success of the KTB and a growing public awareness of the importance of geosciences for society and economy, led to the founding of the GeoForschungsZentrum Potsdam, the GFZ, as the German Federal Research Centre for Geosciences. This was in 1992, shortly after German unification. As founding Director, I had the challenging job to merge two different science systems and to form a modern research institution that could integrate all geoscientific disciplines – from geodesy to geoenvironment – in an interdisciplinary organizational structure. A major task of the GFZ, from the very beginning, has been to promote joint geoscientific research and to provide large-scale facilities for the participation of German geoscientists in major international programs. Today, the GFZ has, I think, made its mark in international geosciences as well.

A highly innovative and very promising new approach to gain deep and detailed insight into the properties of our planet, the state of System Earth and its ongoing processes is by probing System Earth from space, using near-Earth satellites and remote sensing technologies. This topic has become a focal point of research at the GFZ as a result of the successful realization of the concept of specialized Low-Earth Orbiting Geosatelites. Actually, the GFZ currently is operating three satellites and will be involved as a major partner in all upcoming satellite missions of the German and the European Earth Observation Programs, and we are very proud of closely collaborating with NASA in the joint twin-satellite mission GRACE – Gravity and Climate Experiment.

Due to the current climate debate, our national strategic Research Field “Earth and Environment” has gained a high political priority in Germany, which also means a high funding priority. Together with the German Aerospace Centre and the Alfred Wegener Institute for Marine and Polar Research we, therefore, have decided to combine our Earth observation capacities and to establish an “Earth System Monitoring Network”. This network integrates the relevant large-scale facilities of the three National Labs, which include satellites, airborne systems, research planes and vessels, geophysical and geodetic observatories as well as stationary and mobile instrument arrays. The goals of this collaboration are: (1) the documentation and long-term monitoring of the state of System Earth; (2) the assessment of fluctuations and changes; and (3) the identification of global, regional and local development trends. The vision is to derive critical tolerance limits and threshold values and to assess the extent of human impact on Earth. This knowledge is critically needed for orientation and policy recommendations aimed at the sustainable use of habitat Earth, for the wise management of the natural resources, and for the protection of our environment. These

are the “Grand Challenges” which both the geosciences and the society have to cope with in the next decades and which require a broad international cooperation and effort.

In closing I, therefore, would like to express my sincere hope that the geoscientists, in particular in the industrialized countries, are aware of their responsibility and take action to meet the grand challenges. A first step could be to link the existing expertise and large-scale facilities in various nations into an international, integrated Earth System Monitoring Network. Thank you.

HOT TOPICS

The International Division will become the International Section in 2009! GSA is expanding globally, and our transition is in alignment with this effort. Our international membership is growing. We have over 1700 members from about 100 countries outside of North America. During 2008, we added about 100 international members with seven new member countries being added to the mix.

There is lots of ongoing discussion on how to finance our international activities. No decisions have been finalized but here are some of the topics being discussed:

- A new GSA headquarters position (55% time for at least three years) will be funded to support the International Section activities.
- The GSA student research grant program will be expanded to include non-North American students starting in 2010. Grants will be in allotments of approximately \$500 for a total funding of \$25 k / year expanding to \$50 k / year in 2012.
- An International GSA Distinguished Lecture tour will begin in the 2010/2011 time frame. Preliminary funding for 1 year is \$US 10k and a process needs to be developed to identify our first speaker and outline a program.
- Continuation and expansion of our International Travel Grants program for the annual meeting. We want to grow the available monies from our current funding level of \$10 k / year to a target of \$35 k in 2012.

All of the International Division members and international members of GSA should have received a survey on this topic during the 4th quarter of 2008. We hope that you provided your input, but if you did not, we are looking for ideas and energy, so please let us know what you think.

Do you know someone who you think should be an Honorary Fellow of GSA?

GSA is actively soliciting Fellows nominations. Honorary Fellows are “individuals who have lived and developed their careers outside North America and have made outstanding and internationally recognized contributions to our science,

or in rare circumstances, provided notable service to the Society.”

GSA currently has sixty-two Honorary Fellows from twenty-three countries. Nominations are due 1 February 2009, and an online nomination form can be found at <http://rock.geosociety.org/members/fellow.htm>. For more information please go to the GSA website or contact the Committee on Honorary Fellows, the GSA Primary Contact is Diane Lorenz-Olsen dlorenz@geosociety.org.

BOARD MEMBER ACTIVITY

A meeting of the International Division Management Board was held during the GSA Annual Meeting. Most of our time was spent discussing our transition from a division to a section. We identified a number of items that would help us build a framework for our transition:

- Survey sent to international members of GSA and International Division members to gather input on the transition (mentioned above).
- Letter to GSA Honorary Fellows soliciting their ideas on how to structure and get value from the International Section.
- Gather ideas on how we can learn from other global organizations and how they have grown internationally and determine the value for GSA for the International Section to collaborate with global, regional, and local geological organizations.
- Draft Bylaws for new International Section to be a general, flexible framework until a more definitive framework is defined.
- Update International Division timeline to reflect roles and responsibilities for 2009 activity.

WHY PARTICIPATE?

The International Division helps facilitate scientific collaboration in a number of ways. One of these is through the awarding of travel grants to our international colleagues to attend the GSA annual meeting. This year we were able to provide eight travel grants to international professionals from Bangladesh, Israel, India, Italy, and the United Kingdom. Half of the awardees attended our International Division business meeting, and they all were pleased with the scientific discussions and networking opportunities that these grants enabled. The following is part of a letter from one of the awardees, Dr. K Balakrishana of Manipal University in India:

“I thank the Geological Society of America for selecting me for the travel support, which enabled me to attend and present my paper at the 2008 Joint Annual Meeting at Houston, TX, between October 5 and 9, 2008. It is normally difficult to get grants from Indian government funding bodies or my host institute to attend international conferences. Chances of getting the grants from the government / host institute will be very bright, if there is an assurance from the conference organizing agency or any other funding agency that they will provide partial travel support. GSA intimated to me on time of the travel support I received, and I immediately sent the copy of the email to the funding agencies. My institute immediately sanctioned me the balance travel support. On receipt of my email of receiving partial support, AICTE (All India Council for Technical Education) has also decided to provide me partial support. Therefore I have a choice now of accepting any one of them!

I am attending the conference in this region for the first time, and this allowed me the opportunity to meet several geoscientists in my area. This opportunity given to me has opened the doors for further interactions with the US geoscientists I have contacted. This should foster exchange of US and Indian students and faculty between the countries in the future, and I look forward to it.”

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