

**INTERNATIONAL GEOSCIENCE EDUCATION ORGANIZATION (IGEO)
NEWSLETTER 02-2 January 2002**

FROM THE EDITORS:

It has been gratifying to receive reports from around the world about the things that people are doing and the reports should give us all ideas about things that we can consider. You do not have to wait for a call to send information to the newsletter editors, send it when an event happens and we will save it for the next newsletter.

The plans for GeoSciEd IV are coming together. The conference will be held August 11 - 14, 2002 in Calgary, Alberta, Canada. Alan Morgan has provided a detailed report about what to expect and you can also visit the web site www.geoscied.org. Make plans to join us for what looks like an exciting meeting!

The Executive Committee also continues to develop our relationship with the International Union of Geological Sciences (IUGS). See the excerpt from our annual report to the IUGS by Chris King.

A preliminary compilation of the Global Survey of Geoscience Education has been completed and is being reviewed and analyzed. In general there is wide variation in educational systems and requirements around the world and although Earth Science Education is included in many places it never seems to be adequate. Teacher training in the earth sciences and funding for education appear to be a global concern. If you have not completed the Global Survey for your country we would welcome more additions. Request a copy of the survey via e-mail from Mary Dowse.

The newsletter ends with a request for any information anyone has about effects on students who participate in geologic presentations or workshops. Do you have any information that you can share.

Thanks, wishing you all well in your endeavors to help students, teachers, and the public learn more about the earth.

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ANNOUNCEMENTS:
GEOSCIED IV: *Earth Science for the Global Community*. Visit
www.geoscied.org

A Progress Report

Since my last commentary in the IGEO Newsletter, the Calgary Local Committee has held

meetings on 2 July, 19 August, 25 September and 30 October 2002. Monthly meetings are scheduled to the start of the conference in August 2003. Most of the pertinent information is now available (or will be very shortly) on the GEOSCIED IV website at: www.geoscied.org

The meeting will take place in Calgary, a dynamic city of 900,000 located on the Bow River at the junction of the foothills and prairies of Alberta. The city is the centre of Canada's oil industry and is the home of Canada's largest concentration of Earth Scientists. Most importantly for attending participants, the city is within easy reach of world-famous badlands to the east and the entrance to Banff National Park and the Rocky Mountains of southwestern Alberta and British Columbia to the west. A variety of field trips (see below) are being organized to take advantage of Calgary's excellent location.

The philosophy of this meeting is to provide a venue for Earth science and teaching professionals to meet and discuss matters of mutual interest. The conference will be of interest to those who teach Earth science at any level from primary to university and also to those who develop and deliver outreach programs in the Earth sciences. The program will embrace the entire learning community and will examine all aspects of Earth science education.

Sessions will be held at the University of Calgary and accommodation will be in the university residences as well as off-campus at the nearby Motel Village complex. The theme of the meeting will be *Earth Science for the Global Community*. The program for the meeting is currently under development and we invite you to review our current plans and suggest possibilities for specific themes that will be of broad national and international interest to educators at all levels, as well as to science communicators.

I am aware that many will be curious about the meeting schedule; costs, field trip venues, accommodation, aspects of the technical programme; social events, how to submit abstracts, even how to get to Calgary and I will provide some details below. Again I encourage you to look at the web site for most information.

Schedule: The conference will commence with an official opening ceremony on the morning of Monday 11 August 2003 and finish in the afternoon of Thursday 14 August 2003. A mid-conference excursion to the Royal Tyrrell Museum of Palaeontology is scheduled for all conference participants on Tuesday 12 August 2003. Pre-conference excursions will commence as early as 8 August 2003 and post-conference excursions will commence on 15 August and run until 17 August. Each trip will last **one day** with a return to Calgary each evening. Oral presentations in at least two concurrent sessions will be held daily on Monday 11, Wednesday 13 and Thursday 14 August. Special time is set aside on Wednesday and Thursday for the poster sessions and all posters will be up for those two days. Posters will be in the same area as the exhibits and refreshment breaks. A keynote talk will start the sessions each day. In summary:

Friday 8 August, Saturday 9 August. Pre-Conference Field Trips.

Sunday 10 August. Registration and Icebreaker Reception, Rosza Centre, University of Calgary

Monday 11 August. Morning Registration, Official Opening and Keynote, Oral Sessions, Panel Sessions. Evening Social Event: A Visit to the Calgary Zoo and Prehistoric Park

Tuesday 12 August. Dinosaurs and More - A trip to the Royal Tyrrell Museum of Palaeontology - All participants. Evening Barbecue in Drumheller

Wednesday 13 August. Keynote. General Oral Sessions, Panel Sessions, Poster Session Exhibits open.

Evening Social Event: Conference Dinner (downtown hotel).

Thursday 14 August. Keynote. Oral Sessions, Concurrent Workshops and Panel Sessions

Poster Session and Exhibits. Evening Event: Campus pub night
Friday 15 August. Post-Conference field trips. One-Day Workshops.
Saturday 16 August, Sunday 17 August. Post-conference Field Trips

Conference Costs: (Please note that all prices are quoted in \$Cdn. Currently this is about \$0.64 US In other words it is about 35% cheaper than the \$US, so \$300 Cdn = approximately \$200 US). A currency converter can be accessed at the website.

Registration fees: Before 18 April 2003

Participant \$350; Student or retired \$175; Accompanying person \$85; One day Registration \$100

After 18 April 2003

Participant \$420; Student or retired \$250; Accompanying person \$100; One day Registration \$100

Additional costs (ca. \$100) will apply to some workshops.

Note that the The single day registration does not include the conference abstract volume, any meals or social events.

Payment

All prices quoted are in Canadian dollars. Payments for registration and deposits for field trips and special workshops must be paid in this currency. Payment may be made with personal checks (drawn on Canadian banks only), bank draft, Visa or MasterCard. No other credit cards are accepted. Canadian value-added tax ("GST") extra, refundable for non-residents. Currently 7%. There is no provincial sales tax in Alberta. All those pre-registered can pick up their registration package prior to the icebreaker, on Sunday 10 August 2003 from 15:00 - 18:00 at the Rosza Centre.

Cancellation

Written notice of cancellation is required. A fee of \$50 will apply for cancellation of registration prior to 6 June 2003. From 7 June to 6 July a fee of \$50 will apply and only 50% of registration fee will be refunded. No refunds will be issued for cancellations made on or after 7 July 2003.

Registration at the Conference. Will be available, by credit card or cash only.

Letter of Invitation

An official letter of invitation will be sent to intending participants who require one. Please address your requests to the Chairman of the Organizing Committee. These invitations are issued solely to facilitate a participants travel or visa requirements (particularly important following the events of September 11, 2001) and in no way implies provision of any support, financial or otherwise.

Financial Assistance: Two categories of participant may be eligible for financial assistance to attend the meeting: those from developing countries and those who are primary or secondary school teachers. If you a intending participant from a developing country and can demonstrate that it would be impossible for you to attend this conference without financial assistance, please fill out the Developing Country Assistance form and e-mail or fax it to the Organizing Committee. If you are a primary or secondary level teacher and you can demonstrate that it would be impossible for you to attend this conference without financial assistance, please fill out the Teacher Assistance form and e-mail or fax it to the Organizing Committee. The Organizing Committee is striving hard to have funds available for both categories of participant!

These forms, together with supporting documentation, must be submitted to the Organizing

Committee by 1 March 2003. Successful applicants will be notified by or after 1 April 2003.

Field Trips

Southern Alberta and southeastern British Columbia have dozens of geological field trip options. As of September 2002, a number of field trips are being organized. Note: Trip #7 is **included** in your registration, and the conference will effectively be "on the road to Drumheller and the Badlands" Tuesday August 12!

Three World Heritage sites will be visited by the various field trips, and coverage includes environmental geology, stratigraphy, palaeontology, glacial geology and geomorphology and economic geology, all presented in a learning environment. For all field trips and costs please see the website.

Accommodation

1. University of Calgary Residences: It is expected that the majority of conference participants will be accommodated in the residences of the University of Calgary, which are about 10 minutes walk from the conference location. Room types are available ranging in price from about \$35-\$60. Breakfast passes for the Alberta Room in the Dining Centre (about \$6 per day, including taxes) can be purchased from Conference Housing when you check in. Parking passes (Lot 50) are available on a daily basis at a cost of \$2.50. These passes can be purchased at Conference Housing when you check in.

For additional details look at the website under accommodation.

2. Hotel/Motel Options

A number of rooms have been reserved at two area hotels that are within walking distance (> 30 minutes) or within one rail-stop (rapid transit) of the campus. For locations, contacts and procedures to follow see the web site. Costs for these close off-campus accommodations will be about \$100 - 120 per night, and a 15% tax is added to these costs. Downtown (Premium) Hotels (five-star internationals and independents) are also available and are on regular transit routes.

Social events are open to all registered participants of the conference, accompanying persons and trade exhibitors. These include the **Welcome Icebreaker**, free to all registrants at the Rozsa Centre, University of Calgary Campus. **Calgary Zoo and Prehistoric Park**. Monday 11 August 2003 (evening). Cost: to be determined. **Great Dinosaur Barbecue**. In Drumheller 130 km east of Calgary. Tuesday 12 August 2003. Cost: included in registration. **Conference Dinner**. Sponsored by **Encana**. Wednesday 13 August 2003

Sumptuous dinner in the Hyatt Regency Hotel (downtown Calgary), with native dancers and drummers. After-dinner speech. Presentation of Geoscience Education Awards. Cost to participants: estimated ~\$25.00

Campus Pub Night. Thursday 14 August 2003. Casual get-together - no structure - participants to arrange.

Cost: - whatever you spend! Location: University campus.

Commercial exhibits are available. For details, costs and deadlines please look at the website or contact:

Ken Drabinsky, Chair, Exhibits

Tel: 403.815.1482

Fax: 403.281.8807

kendrabinsky@geospiritconsulting.com

and/or

Jacque Martin, Vice Chair, Exhibits

Tel: 403.777.7290

Fax: 403.777.7293

jbmartin@email.cbe.ab.ca

The Technical Programme: is too long to be duplicated easily in a summary format. It is aimed at all education levels and all outreach endeavours. Please see the web site for complete details, and note that these will still change as the programme reaches its final format.

GeoSciEd IV will provide a forum for Earth scientists and teachers of Earth science to come together and share new ideas and concepts in science and education. The program, designed to be flexible in format, is aimed at promoting and supporting scientific understanding of the Earth. It will provide a unique opportunity for scientists to share their research and explanations about Earth's systems and for educators to describe their role in fostering the development of informed members of an increasingly integrated globe. The program will be of interest to those teaching at all levels and also to those who develop and deliver programs in public awareness of Earth science.

Oral Sessions

The most typical for scientific conferences, typically with 20 minute time slots, but we will encourage any use of time as long as it is done using 20 minutes units. For example, poster presenters for a given session might be given a couple of minutes to outline their posters just prior to commencement of the interactive poster sessions. Or perhaps the oral session might spend one hour of its time in a panel discussion.

Interactive Poster Sessions

Poster sessions will be run on specific days and a special time will be available solely for poster viewing. It is envisaged that the Poster Session area will also be the social area of the meeting for refreshment breaks.

Workshops

Hands-on, interactive workshops will be another format available for sessions.

Keynote Speakers

It is planned to start each day with a Keynote Speaker presenting on an idea or issue of wide interest to the Earth science education community.

Abstract submission.

The final abstract deadline is 15 March 2003. All abstracts must be submitted in either Microsoft Word (.doc) or Corel WordPerfect (.wpd). The preferred method of submission is as attachments in an e-mail message. Abstracts may also be submitted by mail, but the file should be included on an accompanying 3.5" DOS- formatted diskette or CD. Abstracts should be submitted to greggs@ucalgary.ca

The SUBJECT line of your message must include "GEOSCIED IV". Each contributor can present no more than two abstracts. You will receive confirmation of successful transmission in a day or two. PLEASE!!!: if your total file size is greater than 5MB - check those image files! Details on the abstract layout; length, format, font; columns; authors, title and address layout; information on included figures; whether you prefer poster or oral presentation; the requested session and the level of your presentation are provided at the website.

Abstracts will undergo editorial review and may be accepted or rejected. Contributors will be notified of acceptance or rejection as soon as possible after April 15, 2003. **Presenters must have registered in order for the abstract to be accepted.** If there is a problem with attendance because of uncertainty with respect to funding, please indicate this in the accompanying note.

In conclusion, the Calgary website provides many more details including a downloadable poster for the conference. If any delegates (particularly the national representatives) need multiple HARD COPIES of the poster, please contact me at avmorgan@uwaterloo.ca I hope

that this short summary provides some idea of what will be available at GEOSCIED IV. The National and Local Committees look forward to hosting you at this IGEO venue.

Alan V. Morgan.

National Convenor, GEOSCIED IV.

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GEOSCIED 2003 Home Page: <http://www.science.uwaterloo.ca/earth/geoscied/>

I Encuentro de Enseñanza de las Ciencias de la Tierra para América Latina y el Caribe

PRESENTACIÓN.

El 15 de Noviembre en la ciudad de Montevideo, Uruguay, en el marco del XI Congreso Latinoamericano de Geología, fue constituida la red GEOLAC (Red Latinoamericana y del Caribe de Facultades-Departamentos de Geociencias) por iniciativa de la División de las Ciencias de la Tierra de UNESCO en coordinación con universidades y organismos de las geociencias del área. Dentro de las actividades a realizar planteadas en dicho encuentro constitutivo, se aprobó efectuar eventos sobre la enseñanza de las Ciencias de la Tierra para el ámbito Latinoamericano y del Caribe.

El I Encuentro de Enseñanza de las Ciencias de la Tierra para América Latina y el Caribe se propone realizar en las instalaciones de la Universidad de Pinar del Río, Cuba, en los días comprendidos entre **18-22 de Febrero del 2003**. El Departamento de Geología y el comité ejecutivo de GEOLAC organizarán el mismo y tienen el gusto de invitar, a todos los profesores de las geociencias de cualquier nivel educativo así como a profesionales inclinados por dicha temática, a participar en este evento.

Comité Organizador:

I Encuentro de Enseñanza de las Ciencias de la Tierra
para América Latina y el Caribe.

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Sixth International Conference on Computer Based Learning in Science (CBLIS)

5-10 July 2003

University of Cyprus, Nicosia, Cyprus

<http://www.ucy.ac.cy/cblis2003>

cblis2003@ucy.ac.cy

Computer Based Learning (CBL) has great potential for enhancing the quality and effectiveness of physics and astronomy education. Computers have been employed in

teaching for over thirty years, but their use still plays only a minor role in most school science programs as well as in most undergraduate and postgraduate courses in mathematics, science and engineering. At present, there are many software packages available for simulation, intelligent tutoring, mathematical modeling, static and dynamic book emulation and visualization algorithms. There are also many web-based learning environments that make use of innovative technologies, which have the capability to revolutionize both the process of constructing meaning and the development of scientific thinking. The CBLIS community is committed to the promotion of innovative learning environments for the benefit of the wider scientific community. CBLIS conferences are organized on a biennial basis with the aim of showcasing current research trends in designing learning environments and benchmarking best practice.

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REPORTS

Extract from the report of the International Geoscience Education Organisation to the International Union of Geological Sciences (IUGS) to which IGEO is affiliated.

General Summary of Progress

The International Geoscience Education Organisation, (IGEO) an organisation affiliated to the International Union of Geological Sciences (IUGS) has now been in existence since January 2000. The Senior Officers of the Council are:

Chair	Chris King (UK)
Vice-Chair	Nir Orion (Israel)
Secretary/Treasurer	Ian Clark (Australia)
Newsletter Editors	Laure Wallace and Mary Dowse (USA)
Next Conference Convenor	Alan Morgan (Canada)

The Council currently comprises representatives from the 22 countries listed below:

Country	Representative
1. Argentina	Jose Selles-Martinez
2. Australia	Gary Lewis
3. Bangladesh	Afia Akhtar
4. Brazil	Celso Dal Re Carneiro
5. France	Jacqueline Rivault
6. Germany	Ludwig Stroink
7. Canada	John Clague
8. India	Shankar Rajasekharaiah
9. Indonesia	Dwikorita Karnawati
10. Israel	(Nir Orion)
11. Japan	Yoshisuki Kumano
12. Korea	Chan-Jong Kim

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| 13. Mozambique | Duad Jamal |
| 14. New Zealand | Glenn Vallender |
| 15. Norway | Merethe Froyland |
| 16. Philippines | Mike Cano |
| 17. Portugal | Luis Marques |
| 18. South Africa | Roger Gibson |
| 19. Spain | Emilio Pedrinaci |
| 20. Taiwan | Chun-Yen Chang |
| 21. USA | John Carpenter |
| 22. UK | (Chris King) |

However, Council is always keen to include representatives from countries not currently represented. Suitable individuals are highly regarded for their geoscience educational interests in their own countries and are supported by other geoscience educators there. When their names are put forward, providing there is no disagreement by other members of Council, they become Council members. Council members become involved in the regular Council email meetings, generally attend GeoSciEd Conferences, and represent their own countries and regions in IGEO discussions and projects, whilst representing the interests of IGEO (and IUGS) in their own countries and regions. Nominations should be put forward, in the first instance, to one of the Senior Officers (email addresses: c.j.h.king@educ.keele.ac.uk ; ntorion@wicmail.weizmann.ac.il; ian.clark@cosm.sc.edu ; lwallace@usgs.gov ; dowsem@silver.wnmu.edu ; avmorgan@uwaterloo.ca).

During the past year, initial funding of \$1000 has been received from IUGS and this is currently being used in the development of a website to be hosted by the Department of Earth Sciences at Keele University. The website brief currently envisages the following sections: IGEO Details; International Conferences; Newsletters; Website link page to Geoscience Educational websites in member countries; additional sections are being considered.

Meanwhile the GeoSciEd IV local and national Conference Committees have swung into action in making preparations for the IGEO International Conference, GeoSciEd IV, to be held in Calgary, Canada from August 10th to the 14th, 2003. Further details are available on the GeoSciEd IV website at: www.geosci.ed.org . The international advertising campaign is now underway, through the activities of IGEO Council members across the world.

Meanwhile, the ground has been prepared for a bid to be put to IUGS to enable delegates from developing countries to attend the conference. The conference committee is also hoping to have additional funding available for this purpose. The format and timing of future conferences is currently under discussion by IGEO Council members, meanwhile a bidding process is underway to find a venue for GeoSciEd V which is likely to be held 2006. Before then IGEO plans to have a significant presence at the forthcoming International Geological Congress (IGC), in Florence, Italy, 2004.

One of the major aims of IGEO remains to be to share expertise across the globe and we are pleased that our current and future activities are able to support geoscience educators worldwide in their endeavours and to raise the profile of geoscience education, wherever possible.

ARGENTINA

José Sellés Martínez

The third edition of the Earth Science Week celebrations at the Department of Geology of the Universidad de Buenos Aires (Argentina) has been a great success. An exhibiton on Geology, Palaeontology, Atmospheric Sciences and Oceanography occupied the inner court of the Facultad de Ciencias Exactas and Naturales. Institutions like the Geological, Antarctic, and

Meteorological Surveys, five petroleum companies participated. There were interactive moduli for the students to play and learn with, a three meters high volcano, fossils, a reproduction of a Critosaurus (natural size, sound track), posters, scale models, and tens of university students and faculty members explaining the joy of learning and researching. The exhibits covered more than 600 square meters and the event lasted three days. Additional activities that attracted interested people included a round table about "Water in the XXIst Century" and a workshop for teachers on "Geological Time." There were also more than 15 talks, among which a conference given by people participating in the recent rescue of the Magdalena Oldendorff ship, trapped in Antarctic ice this winter (southern hemisphere) was number one.

Images of how everything looked can be viewed at www.fcen.uba.ar/decaysec/secade/semanas

Next year issue will be devoted to the International Year of Fresh Water, don't miss it!!!

BRITAIN

Chris King

ESTA at BGS HQ

What do all these strange words mean? They mean that the Earth Science Teachers' Association (ESTA) held their annual conference at the headquarters (HQ) of the British Geological Survey (BGS). ESTA has an annual conference, held in September at a different venue every year and we normally go to a University. This was our first visit to the BGS HQ near Nottingham and was excellent. Not only could BGS offer several outstanding lecturers, but we were also able to tour the building to see the enormous core store, the map library that holds many items of great historical interest to geology and the BGS shop, full of interesting items of educational value.

The number of people attending the conference was greater than in recent years, probably because of the 'pull' of a visit to BGS HQ. Their evaluations showed that they thoroughly valued their visit and found the whole Conference to be a very motivating experience at the beginning of our academic year. The ESTA Conference will be held in Manchester from 12 – 14th September next year (2003), and we would be glad to welcome visitors from overseas, as we have in many previous years.

Chris King.

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The Earth Science Education Unit: today England – tomorrow, Wales and Scotland – after that, who knows!

In the first year of the Earth Science Education Unit's expansion to cover most of England, we have appointed 15 workshop facilitators across the country. We are now able to offer our free workshops to secondary schools and at conferences in most parts of England. Between us, this year we have presented 80 workshops at schools and conferences to more than 600 teachers and over 500 teachers in training.

Each of our workshops is 90 minutes long and is aimed at a certain Earth Science area and age group of our National Science Curriculum. Schools choose either one or several workshops in combination. The workshops are interactive, are practical hands-on based. They are intended to engage the teachers in thinking about Earth processes, to develop their background knowledge and to motivate and enthuse them. The participants are asked to

evaluate the workshops on a 1(high) to 5 (low) scale and the mean evaluation is 1.6. This is a very pleasing response from teachers who sometimes have not previously been enthusiastic about teaching the Earth science material in our National Science Curriculum.

We will soon be appointing facilitators in Wales and Scotland so that we can extend our offer of free workshops to schools there as well. Meanwhile, we have also visited Taiwan and Japan to present workshops this year and the note by Peter Kennett on his recent ESEU visit to Chile is below.

Chris King
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Earth Science Education Unit visit to Chile

The highlight of my year was undoubtedly a trip to Chile, at the invitation of the Association of British Schools in Chile, with all costs met! There are 17 of these schools, with 20000 pupils, nearly all Chilean. As well as leading INSET for teachers, I was faced with real live children in two schools and got them doing the ESEU Rock Cycle and Plate Tectonics workshops at one and Primary activities at the other! I was also asked to visit the Chilean Ministry of Education and talk to about a dozen civil servants about their science curriculum, mainly with a view to getting them to include much more practical work and to introduce investigations.

Having ended my tour at Punta Arenas, I decided to have a week's holiday in the Falkland Islands (apart from seeing the Director of Education to tell her about our work!). Even in winter, the islands were brilliant and I saw a lot of the countryside ("camp") which I had never visited before, and counted 34 species of birds, including the supposedly rare striated caracaras!

Peter Kennett

GERMANY

Ludwig Stroink

German contribution to the IGEO-Newsletter 2002



“2002 - Year of the Geosciences” – Germany continues a new tradition

The Year of Geosciences in Germany has been a smashing success. The idea was to get people of all ages interested in geosciences to show how scientists spend public money and help reverse the decline in the number of students in the natural sciences.

Since 2000 each year one discipline is selected in Germany as a thematic focus for intensive discussion with all segments of the population. Within the framework “Science in Dialog” this initiative was launched by the Federal Ministry of Education and Research (BMBF). 2002 was proclaimed the Year of the Geosciences under the slogan "planeterde – 2002 Year of the Geosciences" while the two preceding years had been devoted to physics and the life sciences respectively. Next year will be the year of Chemistry. The tremendous response of the population to the Year of the Geosciences 2002 has shown that the general public has a great interest in geoscience topics.

The philosophy throughout the year was based on a skeleton of four central events. These took place in Berlin (January), Leipzig (April), Cologne (June) and Bremen (August). They were managed, organized and advertised by a public relations agency. Other major events of national significance, located in Bremerhaven, Potsdam, Hannover, Munich, Halle and Frankfurt, accompanied the programme as well as numerous regional events. (www.planeterde.de)



GEOTECHNOLOGIEN - a R&D-Programme of a new dimension

GEOTECHNOLOGIEN is a new German R&D- Programme funded by the Federal Ministry for Education and Research (BMBF) and the German Research Council (DFG).

(www.geotechnologien.de). It comprises 13 thematic priority areas of major scientific, societal and economic significance and creates an interdisciplinary and integrative scientific network to understand the complex on-going processes of the system Earth. The principal scientific goal of **GEOTECHNOLOGIEN** is to contribute to the development of prevention strategies and negotiation options for a sustainable management of the Planet Earth. However, as a large scale national programme **GEOTECHNOLOGIEN** will also bring the goals and results of the scientific projects to the public and aims to enhance Earth science education at all levels.

PROMOTING GEOSCIENCES TO THE GENERAL PUBLIC

The main objective is to inform the general public about the development and the successes of the programme. The Year of the Geosciences 2002, initiated by the Federal Ministry of Education and Research, offers an outstanding platform for the effective public

presentation of research in the geosciences. One of the most important activities of **GEOTECHNOLOGIEN** Coordination office during the Year of the Geosciences was a series of presentations at the Year's various central events. The programme of presentations was designed to reflect the many facets of the geosciences. The tremendous spatial and temporal dimensions that the geological scientists deal with were one topic that

was highlighted. Other themes included the relevance of their research to everyday life, the breadth of their expertise and the high technological level of their work. A multimedia show and spectacular exhibits that gave viewers a glimpse of the researchers' daily activities turned out to be a magnet for younger members of the audience in particular. The multimedia presentation is available on a CD that can be ordered from the **GEOTECHNOLOGIES** coordination office.



SCIENCE INSTEAD OF SHOPPING:
GEOTECHNOLOGIEN IN THE ELEGANT
SHOPPING MALL »SCHADOW- ARKADEN« IN

Another attraction that was enjoyed by the viewers was the series of classroom experiments. They are developed at the *Institut für die Pädagogik der Naturwissenschaften (IPN)* in Kiel as part of the GEOTECHNOLOGIEN Project “System Earth: Earth Systems Education for Germany” (s. the contribution of H. *Bayrhuber* and S. *Hlawatsch*). The experiments made the geosciences a hands-on subject and helped viewers to literally “get a grasp of” the broad spectrum of work being done in these fields and its multiple applications. Not only children but adults as well were thrilled by the experiments. The visitors’ enthusiasm increased from one event to the next. Accompanied by a fiery background programme, the crowds of visitors coming to Cologne – more than 80,000, according to the organizers – exceeded all expectations. When it’s not



GETTING PUPILS INTERESTED IN THE NATURAL SCIENCES – FOR THESE FOUR GIRLS, THE PROJECT HAS OBVIOUSLY WORKED

taking part in one of the various central events of the Year of the Geosciences, the GEOTECHNOLOGIES presentation is on tour throughout Germany in the form of a travelling exhibition, setting up in shopping centres and savings banks as well as Ministry buildings and regional parliaments in order to increase public interest in its research programme and the geosciences in general.

In Germany passengers on long train journeys enjoy reading the “DB-mobil” magazine, published by the German national railway system, Deutsche Bahn AG. More than 500,000 copies are published every month. It’s clearly an ideal medium for acquainting interested non-scientists with the geosciences and the GEOTECHNOLOGIEN programme. Accordingly, the March 2002 issue of this magazine included eight pages of reports on the various topics GEOTECHNOLOGIEN deals with. Whether it’s satellite missions, early warning systems to help us deal with natural catastrophes, or state-of-the-art technologies for disposing of the dangerous greenhouse gas carbon dioxide — readers learned in an entertaining and easily comprehensible way about the tremendous relevance of geological research to our everyday life. The positive response to these pages, from the business sector as well as other categories of readers, testify to the success of this somewhat unusual way of publicizing science.

TEACHERS BECOME PUPILS

In co-operation with the education experts in Kiel, the GEOTECHNOLOGIEN co-ordination office is also conducting seminars in continuing education programmes for teachers throughout Germany. The aim is to reach as many pupils as possible in the target group. Participating teachers — consisting mainly of specialists in the fields of chemistry, physics, geography and biology — judged the introductory events held in Bavaria and North Rhine-Westphalia to have been a total success. They also awarded high marks to the concept behind the subjects dealt with in the seminars: a well-co-ordinated combination of lectures and presentations of simple experiments that can be carried out in the classroom.

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Projekt "System Earth":

Earth Systems Education for Germany

The recent shift in earth science research towards an interdisciplinary understanding of the Earth as a system has not been regarded in the German school education. Issues such as climate change, floods, hazards and sea level rise are dealt with individually and in a disciplinary manner in the biology, chemistry, physics and geography classes. This lack of a system oriented earth science education contrasts with the increasing demand of society to teach students about global earth science issues, their chances and dangers too.

Due to these shortcomings, in 2000 the Project "System Earth" started in Germany at the Leibniz-Institute for Science Education (IPN) as an effort to introduce Earth Systems Education to upper secondary and primary science education. The project is being funded by the German federal government for an initial five year period. It aims at developing teaching materials that focus on an understanding of the earth as a

system with its interacting subsystems. The educational argument is to stimulate a rational discourse on issues of planet earth and to provide the necessary well-founded scientific knowledge. The materials are developed in close cooperation with biology, chemistry, physics and geography teachers, science educators, earth scientists and



EVALUATION OF TEACHING MATERIALS ON THE ROCK CYCLE IN A BIOLOGY CLASS OF A NORTHERN GERMAN UPPER SECONDARY

foster an interdisciplinary approach for teaching and learning. However, integrated approaches are not common especially in German upper secondary science education. The teaching materials for this grade will be organised for biology, chemistry, geography and physics courses and aim at encouraging interdisciplinary cooperation between the science and geography teachers. As a basis of the development work research on students' preconceptions of the earth as a system and students' interests in earth science issues is being carried out. The teaching materials will be evaluated and revised. A strategy for nationwide implementation will be developed and evaluated too.

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Vulkaneifel European Geopark – geoscience & education within geotourism

The Region

Vulkaneifel is a territory of about 120.000 hectares. It lies between Coblenz and Trier, close to the Luxembourg border, north from the river Moselle. From the geological view it lies west from the Rhine, in the left Rhenish slate mountains. Its famous volcanism derives from maar eruptions which represent about 27% percent of the 250 volcanic eruption centers of the West Eifelian volcanic field. Volcanic activity is known from periods of about 800.000 before present up to 9.500 years before present. The youngest volcanic crater is the Ulmen Maar in the eastern part of this young, volcanic field of Quaternary age.

Beside volcanic witnesses a large variety of geological phenomena can be found in the relatively small area. These are on one side reef limestone of Devonian age around Gerolstein with a variety of fossil reef organisms as well as middle Devonian trilobites, well known by paleontologists in the world and in natural history museums. On the other side a tertiary lake filling with oil-shale in Eckfeld is extremely fossil rich. Additional erosion phenomena exist, as well as iron ore deposits and relicts of their former industrial use leading over to cultural history for the whole region. The geological variety, beauty and richness in volume indicate the value for different fundamental needs of human existence. Today the morphology of the Eifel landscape as well as mineral water resources and geotourism are a new basis for sustainable development.



Scientific courage, political support and time

Many efforts have been made during the last 15 years, since 1989 the first geo-trail in the village of Hillesheim was inaugurated to serve as the first example of a geoscientific public relations project. It was done by Prof. Dr. W. Kasig, Geological Institute of the Technical University of Aachen and Dr. I. Eschghi. This trail with about 32 outcrops and a length of about 132 kilometers gave a sign for the neighbourhood political units to establish other geo-trails. They grew up to

the year 2001 up to 14 units and form a basis for a new kind of environmentally friendly tourism: geotourism.

Focus in geotourism is layed on the geolocial development of the region as well as on the transfer of the world of geoscience and it's knowledge to the general public: visitors (FREY, SCHÄFER & BÜCHEL 2002). The extraordinary richness of geological heritage of the region and the responsibility to safe it by sustainable development are columns of geotourism.

After the first attempt up to 10 geological activity units grew up. Projects like a natural history museum in Gerolstein, an iron-museum in Jünkerath, the geo-route in Manderscheid, the geopark in Gerolstein and new interactive museums like the Eifel-Vulkanmuseum in Daun, the Maarmuseum in Manderscheid, a Historic Road in Kelberg and the volcano-house in Strohn were built up. Financial support was given by the European Union and by the local communities themselves. For the later it was an enormous effort and trust in scientific advice. The success of having a new, positive image for the region, bringing more guests into this part of Rhenania-Palatinat, confirmed investments of about 6 million Euro during 15 years.

Innovative geoscience transfer and touristic marketing – world's meet

Different concepts were developed for a transfer of geoscience knowledge to the general public. The trail concept by KASIG (1989) was done on the basis of individual visitors walking around and enjoying information about the geological formation of the Vulkaneifel area. The result of having the possibility to get information, and having a good working marketing company for the overregional publicity was a flood of groups asking for guided trips. This demand swept over the tourist informations as responsible booking agencies for all activities. Mainly school classes first asked for tours across the geo-trails.



For the Geopark Gerolstein a new concept was created. It bound the columns information/ education, tourism and regional research together to give a

sustainable development to the new activities (FREY 1994). A new guide or georanger education was established to have qualified guides on geological items for officially offered tours. Within the group of the later there are mainly non-geologists. The main focus for guide education was layed on introducing guests, showing and explaining the fascination of geology, landscape, human existence and use of this landscape as well as its necessity to protect it for future generations. From this basis educating young children and thinking of and producing education material for them was an important task. A volcanoefel family was created with figures referring to geological items like „Willi Basalt“ (FREY 2001). By him as guide figure the world of geological phenomena is opened to children.

European Geoparks Network – extraordinary collaboration in geotourism

Collaboration with tourism means marketing being done by professionals working on corporate identity, marketing plans for leaflets, brochures and collaborating with geologists on other public relation material about a geologically extraordinary landscape. By these activities Vulkaneifel has achieved a positive quality label on the german tourism market. Its former volcanism was promoted in combination with landscape and geological offers in different variations.

A new and good collaboration since 1994 between Geopark Gerolstein and the Réserve Géologique de Haute Provence was fundamental for a stable, common future development. The partners got to know each other, exchanged information and regional mentality of regional european thinking by visiting each other. They found an extraordinary similarity between the people of the regions even having different geology. This meant to be a good basis for further steps. The french colleagues had the vision to create a network of geological units working together in the field of geological heritage, geoscience education and rural economic development. They initiated the activity to build up a network of four partners which founded in June 2000 in Lesvos, Greece, the European Geopark Network to start officially the realisation of this vision.

Partners within this network are the Réserve Géologique de Haute Provence (France), the Petrified Forest of Lesvos (Greece), the Parc Cultural del Maestrazgo Terruell (Spain) and the Vulkaneifel Geopark (Germany). Beside the creation of this network main focus in lying on the touristic, economic and pedagogical input by having new products also for sale in shops and hotels etc..

This sustainable development will lead to a geo-identity for the people of the regions. It is expected that it will help them to give a higher value to their own region and integrate geological items back into their life and into handling geo-structures and processes of a landscape as important factors for daily life as well as for future human existence. The network is extending. The 3rd Conference on European Geoparks was held from 24th -27th October, 2002 in Kamptal, Austria. The European Geoparks network was enlarged up to 15 regions in 8 nations. Their aim is to collaborate on the above mentioned levels for a regional development within a Europe of regions.

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INDONESIA

Dwikorita Karnawati.

A brief report on the existing condition of geoscience education in Indonesia.

Geoscience education has been introduced in the fourth year of Primary School as a part of the Physical-Geography Subject. More detail will be provided in the Second Year of Junior and Senior School. The syllabus provided mainly emphasizes the types of rocks and volcanic processes. But still, there is some incorrect information about volcanic process in found in the textbook.

At the university level, there are ten universities that have special Department of Geology. Most of them only provide education for undergraduate level (with 9 semesters or four and a half year program). Only two of them have a master or doctoral program in Geology, i.e. Gadjah Mada University and Bandung Technology Institute. Current issues in higher education in Geology include establishing a more appropriate and effective curriculum. It is planned that the curriculum could be shortened into 8 semesters without reducing the quality of education and the graduate program. However, there is very limited discussion or consideration about the teaching methods.

Groups such as the Indonesian Geologist Association, Indonesian Geophysicist Association, Indonesian Petroleum Association and Indonesian Association of Geothermal Scientist periodically have annual meeting. Each Association also regularly provides Newsletter and publications.

We do have problems in that employment opportunities in the geoscience field are getting more and more limited. Thus, it is harder for the graduates to obtain appropriate jobs. Most of them lack entrepreneurial skills, indeed this kind of skill is not

accommodated by the curriculum or syllabi. Another problem is the poor-appreciation to Indonesian geologist. The salary for Indonesian geologists is much lower than those for non Indonesian Geologists. The salary of our geologists can be lower than one tenth of overseas geologists, despite having similar knowledge and skills.

Regards,
Dwikorita Karnawati.
Gadjah Mada University
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KOREA

Chan-Jong Kim

Advertising GeoSciEd IV in Korea

The Korean Earth Science Society agreed to advertise GeoSciEd IV to the members of the society. They have put the poster on the web page of the society (<http://earth.cnu.ac.kr/kess/>) and are going to send an e-mail to every member of the society. Many Korean earth scientists and earth science educators are expected to participate in the conference and interact with those from all over the world.

English Issues of the Journal of Korean Earth Science Society

Every year since 2002, The Korean Earth Science Society publishes English issues on earth science and earth science education to enhance academic and professional interactions and exchanges with international scholars and organizations. The English issues are part of the Journal of the Korean Earth Science Society published eight times annually. The Korean Earth Science Society welcomes your participation as authors of articles, members of the editorial board, or members of subscription. Those who are interested in participation, please contact Chan-Jong Kim (chajokim@cje.ac.kr). The next English issue will be published on January (Earth science) and March (Earth science education) of 2003.

Korean Earth Science Olympiad

The Korean Earth Science Society is planning to hold the First Korean Earth Science Olympiad in the year 2003. As many of you already know, there have been International olympiads in the area of physics, chemistry, biology, astronomy, information science, and geography. The effects of olympiads on the outstanding students in secondary school are growing in Korea as well as in the world. The Korean Earth Science Society tries to attract young students to our field, and at the same time increase the awareness of earth science of the general public. The Korean Earth Science Society also hopes very much to encourage the participation of Korean students in an international Earth science Olympiad soon. If anyone has information on international earth science Olympiad, please let me know (chajokim@cje.ac.kr). if there is not. I believe that IGEO might be an organization appropriate for hosting such an international competition.

RESEARCH QUESTION

Sylke Hlawatsch

Is anyone aware of any studies on the effect on pupils, when they visit geoscience research institutes for a day to attend a special course or listen to a talk?

Do you promote such thing in your work?

At the Geoday in August 700 pupils went to the geoinstitutes in Kiel and attended about 64 different courses. We gave out questionnaires and it would be interesting for us to compare our results with the experiences of others.

Best wishes

Dr. Sylke Hlawatsch (Diplom Geologin)

Projekt "System Erde"

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