



# IAMG Newsletter

No. 75 December 2007

*Official Newsletter of the International Association for Mathematical Geology*

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### IAMG AWARDS 2008

## URGENT AND IMPORTANT !!!

The IAMG AWARDS COMMITTEE invites nominations for the following awards:-

### John Cedric Griffiths Teaching Award.

The John Cedric Griffiths Teaching Award shall be presented to honor outstanding teaching, with preference for teaching that involves application of mathematics or informatics to the Earth's nonrenewable natural resources or to sedimentary geology. Age or academic status are not conditions for the award. (IAMG By-Law 14)

### William Christian Krumbein Medal.

The William Christian Krumbein Medal is the highest award given by the Association and the recipient shall be so honored and acknowledged. The Krumbein Medal is awarded to senior scientists for career achievement, which includes (a) distinction in application of mathematics or informatics in the earth sciences, (b) service to the IAMG, and (c) support to professions involved in the earth sciences. There is no stipulated preference for fields of application within the earth sciences. (IAMG By-Law 12)

For further information on both awards, please visit <http://iamg.org>

The deadline for nominations is **31st January 2008** - but please don't wait until the last minute !

**Please send nominations and supporting documents to:-**

**Dr Stephen Henley - Chairman, IAMG Awards Committee**  
Resources Computing International Ltd  
185 Starkholmes Road, Matlock DE4 5JA, Derbyshire, UK  
E-mail: [stephen.henley@btconnect.com](mailto:stephen.henley@btconnect.com)

**I**t's about time! We finally will have a female president: Vera Pawlowsky-Glahn from the University of Girona in Spain will take over as IAMG president in 2008. As Frits points out in the President's Forum she is well qualified for the job, and we look forward to her "reign". This is a first for the IAMG, but other organizations have preceded us in electing female presidents. The largest one, AAPG, has had only one, Robbie Gries, in 2001. At SEPM Mary Kraus will take over the presidency in the coming year. A cursory survey of a few other associations with easily accessible data shows three female presidents in SPE (DeAnn Creig in 1998, Kate H. Baker in 2004, and Eve Sprunt in 2006), four in GSA (1999 Gail

From the Editor  
From the Editor  
From the Editor

M. Ashley, 2000 Mary Lou Zoback, 2001 Sharon Mosher, 1991 Doris Malkin Curtis), AGU with two (1994-1996 Marcia Neugebauer, 2000-2002 Marcia K. McNutt), and Mercedes Muñoz García (1992-1994) in the Sociedad Geológica de España. By contrast IUGS, AIME and GV (in Germany) so far had none, and the Royal Society of course had only male nobility for the presidency. Vera is the first European IAMG president after a run of eight North American presidents over the last 32 years - following in the footsteps of the first two presidents of IAMG who were from Europe, Andrei B. Vistelius from the USSR and Richard A. Reymont from Sweden.



2008 will mark the 40th year of IAMG's existence. The anniversary will be celebrated at the IGC in Oslo in August with special sessions, and Dan Merriam has started to contribute a series of short portraits of the founders of the Association who were present at the ICG meeting in Prague in 1968 (see p. 11, and NL74, p. 7). Fittingly, 2008 will be the International Year of Planet Earth, as proclaimed by the UN General Assembly. The UN sees the Year as a contribution to their sustainable development targets as it promotes wise (sustainable) use of Earth materials and encourages better planning and management to reduce risks for the world's inhabitants. This enterprise aims to ensure greater and more effective use by society of the knowledge accumulated by the world's 400,000 Earth scientists. Various programs, many involving young people, have been initiated by Geological Societies around the world, and the Oslo IGC meeting will put special emphasis on this theme. Read more about it at <http://yearofplanetearth.org/>. This should give us as geoscientists and as IAMG a chance to enhance the public awareness of geology and its importance for dealing with many common problem affecting society. Ian Jackson with his One Geology presentation has been working in that direction and so have many others, especially in the field of GIS. We hope that making people aware of geologic principles, experience, and data could introduce some reason into overheated debates, such as climate change, and cool down some of the unnecessary media frenzy in the future.

*Harald S. Poelchau*

## *International Association for Mathematical Geology*

**IAMG Office**  
4 Catarqui St., Suite 310  
Kingston ON K7K 1Z7  
CANADA  
E-mail: [office@iamg.org](mailto:office@iamg.org)  
FAX: (613) 531-0626  
Tel: (613) 544-6878

### **Officers**

**President: Frits P. Agterberg**,  
Geological Survey of Canada, 601 Booth St., Ottawa,  
Ontario K1A 0E8, Canada, Tel: +1 613 996-2374,  
Fax: +1 613 996-3726, E-mail: [agterber@nrcan.gc.ca](mailto:agterber@nrcan.gc.ca)

**Vice President: Nick Fisher**, ValueMetrics, Suite 251,  
184 Blues Point Road, McMahon's Point, NSW 2060, Australia,  
Tel: +61 2 9922 1623 / +61 407 017 016, Fax: +61 2 9922 1635,  
E-mail: [nif@valuemetrics.com.au](mailto:nif@valuemetrics.com.au)

**Secretary General: Clayton V. Deutsch**, University of Alberta,  
204C Civil/Electrical Eng. Bldg, Edmonton, Alberta T6G 2G7,  
Canada,  
Tel: +1 780 492 9916, Fax: +1 780 492 0249,  
E-mail: [cdeutsch@ualberta.ca](mailto:cdeutsch@ualberta.ca)

**Treasurer: Gina A. Ross**, IAMG, c/o Gina Ross, PO Box 442504,  
Lawrence, KS 66044-8939, USA, Tel: +1 785 842 6092,  
E-mail: [gr\\_iamg@hotmail.com](mailto:gr_iamg@hotmail.com)

**Past President: Graeme F. Bonham-Carter**,  
Geological Survey of Canada, 601 Booth St., Ottawa, Ontario  
K1A 0E8, Canada, Tel: +1 613 996 3387, Fax: +1 613 996 3726,  
E-mail: [bonham-carter@nrcan.gc.ca](mailto:bonham-carter@nrcan.gc.ca)

### **Councilors**

**Antonella Buccianti**, Dipartimento di Scienze della Terra,  
Università di Firenze, Via La Pira 4 - 50121, Firenze, Italy,  
Tel: +39 055 2757496, Fax: +39 055 284571,  
E-mail: [buccianti@unifi.it](mailto:buccianti@unifi.it)

**Qiuming Cheng**, Dept. of Earth and Space Science and Engineering,  
York University, 4700 Keele Street, Toronto, Ontario M3J 1P3,  
Canada, Tel: +1 416 736 2100 (Ext: 22842), Fax: +1 416 736 5817,  
E-mail: [qiuming@yorku.ca](mailto:qiuming@yorku.ca)

**Roussos Dimitrakopoulos**, Department of Mining, Metals and Materials Engineering,  
McGill University, Montreal H3A 2A7, Canada,  
Tel: +1 514 398-4986, E-mail: [roussos.di@mcgill.ca](mailto:roussos.di@mcgill.ca)

**Brigitte Doligez**, Institut Français du Pétrole, 1 et 4 avenue de Bois  
Preau, 92506 Rueil-Malmaison, Cedex, France, Tel: +33 1 4752 7211,  
Fax: +33 1 4752 7067, E-mail: [Brigitte.Doligez@ifp.fr](mailto:Brigitte.Doligez@ifp.fr)

**Ian Jackson**, British Geological Survey, Kingsley Dunham Centre,  
Keyworth, Nottingham, U.K. NG12 5GG, Tel: +44 115 936 3214,  
Fax: +44 115 936 3269, E-mail: [ij@bgs.ac.uk](mailto:ij@bgs.ac.uk)

**Maria João Pereira**, Instituto Superior Técnico - CMRP,  
Av. Rovisco Pais, 1049-001 Lisboa, Portugal, Tel: +351 2184 17831,  
Fax: +351 2184 17389, E-mail: [maria.pereira@ist.utl.pt](mailto:maria.pereira@ist.utl.pt)

**Special IGC Councilor: Felix Gradstein**,  
Geological and Paleontological Museum, University of Oslo,  
Sars'gate 1, N-0562 Oslo, Norway, Tel: +47 22 851 663, Fax: +47 22  
851 832,  
E-mail: [felix.gradstein@nhm.uio.no](mailto:felix.gradstein@nhm.uio.no)

### **Committee Chairs**

**Awards Committee: Stephen Henley**  
Resources Computing International Ltd, 185 Starkholmes Road,  
Matlock, Derbyshire, United Kingdom DE4 5JA,  
E-mail: [stephen.henley@btconnect.com](mailto:stephen.henley@btconnect.com)

**Distinguished Lecturer Committee: Sean McKenna**  
Technical Staff, Geohydrology Department, Sandia National  
Laboratories, P.O. Box 5800 MS0735, Albuquerque,  
NM 87185-0735, USA,  
Tel: 505-844-2450, Fax: 505-844-7354,  
E-mail: [samcken@sandia.gov](mailto:samcken@sandia.gov)

**Publications Committee: Michael Ed. Hohn**  
West Virginia Geological Survey, Mont Chateau Research Center,  
P. O. Box 879, Morgantown, WV 26507-0879, USA,  
E-mail: [hohn@geosrv.wvnet.edu](mailto:hohn@geosrv.wvnet.edu)

**Students Affairs Committee: Helmut Schaebe**  
Technische Universität Bergakademie Freiberg,  
09596 Freiberg, Germany  
E-mail: [schaebe@geo.tu-freiberg.de](mailto:schaebe@geo.tu-freiberg.de)

### **Editors**

**Computers & Geosciences: Eric Grunsky**  
Geological Survey of Canada, Natural Resources Canada,  
601 Booth St., Ottawa, Ontario K1A 0E8, CANADA,  
Tel: +1 613 992 7258, E-mail: [egrunsky@iamg.org](mailto:egrunsky@iamg.org)

**Mathematical Geosciences: Roussos Dimitrakopoulos**  
Department of Mining, Metals and Materials Engineering,  
McGill University, Montreal H3A 2A7, Canada,  
Tel: +1 514 398-4986, E-mail: [roussos.di@mcgill.ca](mailto:roussos.di@mcgill.ca)

**Natural Resources Research: Jerry Jensen**  
Department of Chemical and Petroleum Engineering,  
University of Calgary, 2500 University Dr. NW, Calgary, AB T2N  
1N1, CANADA, E-mail: [jjensen@ucalgary.ca](mailto:jjensen@ucalgary.ca)

**IAMG Monograph Series: Jo Anne DeGraffenreid**  
P.O. Box 353, Baldwin City, KS 66006-0353, USA,  
Tel: +1 785 594 6624, E-mail: [msdeg@mchsi.com](mailto:msdeg@mchsi.com)

**IAMG Newsletter and Website: Harald S. Poelchau**  
10773 Lanett Circle, Dallas, TX 75238, USA, Tel: 214-221-1080,  
E-mail: [hsp.iamg@inbox.com](mailto:hsp.iamg@inbox.com)

## PRESIDENT'S FORUM

This spring, we will have our quadrennial election of the IAMG Council (2008-1212). As usual, this election will be carried out by ballot before the next International Geological Congress that will take place in Oslo. The slate of excellent candidates published in this newsletter was selected with the help of the Nominating Commission (NC). At the beginning of this year, the IAMG Council appointed Graeme Bonham-Carter (Canada), Heinz Burger (Germany), Ian Jackson (UK), Ricardo Olea (USA), and Yongzhang Zhou (China) as voting NC members. As president, I was non-voting NC chair. We are grateful to the Nominating Commission for fulfilling its task with great diligence.

Holding an election is more democratic than leaving final selections to the Nominating Commission that, according to IAMG Statute 11, "... shall report its list of candidates at least four (4) months before the General Assembly meeting at which the election is to be held. Additional nominations for the Council may be made from the floor of the General Assembly." This year's General Assembly will take place during the 33<sup>rd</sup> IGC, August 6-14, 2008. On this occasion, the Chair of the meeting will ask IAMG members in attendance to ratify the final list of new Council members. A difference with the past few elections is that during IAMG2007, our annual meeting in Beijing last August, Prof. Dr. Vera Pawlowsky-Glahn was already selected as the next IAMG President.

Dr. Pawlowsky-Glahn is a professor of the Department of Computer Science and Applied Mathematics at the University of Girona. She studied Mathematics at the University of Barcelona in Spain and obtained her PhD (*doctor rerum naturam*) from the Free University of Berlin in Germany. Before going to Girona, she was professor in the School of Civil Engineering at the Technical University of Catalonia (UPC) in Barcelona. Her main research topic since 1982 has been the statistical analysis of compositional data. The results obtained over the years have been published in multiple articles, proceedings and a book in the Oxford University Press series *Studies in Mathematical Geology*. She has been guest editor for a special issue on this topic for Mathematical Geology in 2005 and has acted, together with A. Buccianti and G. Mateu-Figueras, as editor of a book on compositional data analysis published by the Geological Society, London (2006), as special publication 264. She is the leader of a research group on this topic involving professors from different Spanish universities located in Girona, Barcelona, Murcia and Cáceres. The group organises every two years a workshop on compositional data analysis, known as CoDaWork, and their research has received regularly financial support from the Spanish Ministry for Education and Science and from the University Department of the Catalan Government.

Prof. Dr. Pawlowsky-Glahn has been vice-chancellor at UPC from 1990 to 1994, head of the Department of Computer Science and Applied Mathematics at the University of Girona in 2004-05, and dean of the Graduate School of the University of Girona in 2005-06. She received in 2006 the William Christian Krumbein Medal of IAMG and was Distinguished Lecturer of IAMG in 2007.

Some of you may wonder why there is no choice of candidates for the presidency this time around. A brief explanation is as follows: the Nominating Commission initially selected as many as 43 possible candidates for the 11 positions to be filled. After rating all names according to a point scheme, 22 names were retained. Nearly all these candidates readily agreed to let their names stand for election. An exception was that one of the two nominees for President could not possibly accept. Alternatives were explored but no other suitable individual could be found for this position.

At a Nominating Commission meeting on August 28 at IAMG2007 in Beijing, attended by three of the five voting NC members, it was decided to select Vera Pawlowsky for the position of IAMG President without running mate. I have announced Vera's selection during the IAMG2007 Closing Ceremony where the news was greeted with enthusiastic applause. Afterwards, voting members of the IAMG

Council not present in Beijing were apprised of the decision and none have objected. For various reasons, I believe that this turn of events is highly beneficial for the IAMG's future.

Vera will be the third European IAMG President. When the IAMG was founded in 1968 during the 23<sup>rd</sup> International Geological Congress in Prague, Andrew Vistelius (USSR) was elected as our first president. Richard Reymont (Sweden), who had originally proposed the formation of our international society, served as 1968-1972 Secretary-General (SG) before becoming 1972-1976 President. It started the unwritten rule that the SG would also be the next president, a tradition that lasted until 2000. At first this procedure was more or less automatic, but gradually it

was replaced by full-fledged elections with two or more independent candidates for each position to be filled.

From 1976 to 2000, all IAMG Presidents and SGs were based in the USA. Increasingly the rule of the SG becoming the next President had been criticized as undemocratic. However, it had the great advantage of a smooth and harmonious transition from one Council to the next. This original practice has been restored to some extent because, during its last year in office, the current Council now knows who our next President is going to be and this will help to maintain continuity of IAMG governance in the near future. Most scientific organizations have constitutions that differ significantly from ours. For example, some stipulate that a President-Elect has to be elected one or more years before taking office as President. Our constitution does not allow this but it permits selection of candidates for any position with or without a ballot, subject to confirmation at the General Assembly at which the new Council will take over. Please join me in welcoming Prof. Vera Pawlowsky as our next IAMG President.

Frits Agterberg





# Association Business

## IAMG AWARDS COMMITTEE

I should like to welcome Professor **Yongzhang Zhou** as a new member of the Awards Committee. He is professor of Mathematical Geology and Geochemistry at Zhongshan University, China, and fills the vacancy left by the retirement of **Qiuming Cheng** following his more than four years of service: our thanks and appreciation go to Qiuming Cheng for his participation in the work of our Committee. Professor Yongzhang Zhou joins **Jef Caers, Alexei Viktorov, Antonella Buccianti** and myself to serve on the committee for the next four years.

In 2008 we will be selecting recipients of the **Krumbein Medal** and the **Griffiths Teaching Award** (see front page). So far we have received no new nominations for these awards, but I am sure there are many excellent candidates for both, simply waiting to be nominated! The procedure is very simple and is explained on the IAMG web site - or if you don't have convenient access to the Internet, please write to me direct. The deadline for nominations is **31st January 2008** - so please start now. If you think someone has the suitable qualifications and experience for both, why not nominate them for both?

Stephen Henley - chairman, Awards Committee.

[stephen.henley@btconnect.com](mailto:stephen.henley@btconnect.com),

or snail-mail:

185 Starkholmes Road, Matlock DE4 5JA, Derbyshire, UK

### Call for Nominations

#### 2008 Georges Matheron Lecturer

The purpose of the Georges Matheron Lecture is to honor the remarkable scientific contributions made by Professor Georges Matheron, whose fundamental theoretical and methodological work on modeling, analyzing and interpreting spatial data have stood the test of decades of practical application in mineral and petroleum exploration, and elsewhere in Science; and whose work in Random Sets has been crucial to the development of Image Analysis and Stereology.

The inaugural (2006) Georges Matheron Lecturer was Professor **Jean-Paul Serra**, and the 2007 Lecturer was Dr **Wynand Kleingeld**.

A nomination should be no more than one page in length and should address the following selection criteria:

1. Outstanding contributions in at least one of Matheron's principal areas of interest
2. Work carried out in the spirit of Matheron's work, and combining excellent theory with sound practical application
3. Quality as speaker

**Deadline** for receipt of nominations: **31 January 2008**

Please email your contribution to **Nick Fisher** at [nif@valuemetrics.com.au](mailto:nif@valuemetrics.com.au)

#### 2008 IAMG Distinguished Lecturer



Prof. **Donald E. Myers** was selected as IAMG Distinguished Lecturer for 2008 by the DL Committee. Don is Emeritus Professor of Mathematics at the University of Arizona in Tucson. He has taught mathematics, spatial statistics, remote sensing, and probability. His main interests are in geostatistics and GIS, especially as related to hydrology, climate and environment.

Don has a Ph.D. from the University of Illinois at Urbana-Champaign (1960) and was a professor at the University of Arizona from 1965-1998. He can be contacted at [myers@math.arizona.edu](mailto:myers@math.arizona.edu).

## 2007 IAMG Distinguished Lecturer Tour

### Dr. Vera Pawlowsky-Glahn

Final report

**May 13 to 21:** Belfast, UK. **Host: Dr. J. McKinley, Queen's University.** Talk and short course organized by the Department of Geography; audience of about 10-15 professors and graduate students. Local support: lodging and food.

**June 10-16:** Freiberg, Germany. **Hosts: Dr. H. Schaeben and IAMG Student Chapter, Technische Universität Bergakademie Freiberg.** Short course and two talks organized by the Department Mathematische Geologie und Geoinformatik; estimated total audience of about 70 professors, researchers, professionals and graduate students. Local support: lodging and food



**June 24-30:** Greifswald, Germany. **Hosts: Dr. M.-Th. Schafmeister and Dr. K. G. van den Boogaart, Ernst Moritz Arndt Universität Greifswald.** Short course organized by the Institut für Geographie und Geologie and the Institut für Mathematik und Informatik; audience of about 12 professors, researchers and graduate students. Local support: lodging, food, allowance for personal expenses.

Greifswald: Discussions with some students

**July 9 to 10:** Göttingen, Germany. **Hosts: Dr. H. von Eynatten and Dr. R. Tolosana-Delgado, Georg-August-Universität Göttingen.** Talk at the Department of Sedimentology and Environmental Geology; audience of 15 professors, researchers and graduate students. Local support: lodging and food.



**August 26-31:** Beijing, China. **Hosts: Dr. Q. Cheng and IAMG Student Chapter, China University of Geosciences.** Short course held after the IAMG'07 meeting; about 35 professors, researchers and graduate students. Local support: lodging and food, travel expenses to Wuhan.



Guangzhou: In Zhou Di's office

**September 4 to 7:** Wuhan, China. **Hosts: Dr. Q. Cheng and IAMG Student Chapter, China University of Geosciences.** Workshop held together with F. Agterberg, Q. Cheng, J. J. Egozcue, and R. Tolosana-Delgado; about 45 professors, researchers and graduate students. Local support: lodging, food, travel expenses to Guangzhou.

**September 9 to 12:** Guangzhou, China. **Hosts: Dr. D. Zhou and Dr. Y. Zhou, Sun Yat-sen University.** Seminar attended by about 25 professors, researchers and graduate students. Local support: partially food and local expenses.

**September 12 to 18:** Hong Kong, China. **Host: Dr. J. Bacon-Shone, Hong Kong University.** Talk attended by about 30 professors, researchers and graduate students. Local support: lodging and partially food

**October 8 to 15:** Moscow, Russia. **Host: Dr. N. Gorelikova, IGE - Russian Academy of Sciences.** One talk at the IGE-RAS and one talk at the Lomonosov Moscow State University. Total attendants about 35 professors, researchers and graduate students. Local support: lodging and partially food.



Moscow: With Nina Gorelikova at the IGE-RAS

**October 28 to November 3:** Stockholm, Sweden. **Hosts: Dr. R. Reymont and Dr. B. Wohlfahrt, Stockholm University.** One short course and one talk organized by the Department of Geology and Geochemistry each attended by about 15 professors, researchers and graduate students. All expenses, including travel expenses, were covered by the Wallenberg Foundation through the Swedish Royal Academy of Sciences.

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## Forthcoming Name Change Ballot

During the past two years, the possibility of changing the name of our association has been discussed extensively within IAMG Council, at the General Assembly during IAMG2006 in Liège, and with members in response to newsletter write-ups. In the past, similar discussions have been held but these never resulted in actual change. Last year, the IAMG Council approved changing the name of our journal Mathematical Geology to Mathematical Geosciences. This is one of the reasons why possible association name change is being considered again. The matter has to be decided by the IAMG membership. Nearly all participants in the discussions wish to preserve our acronym (IAMG) or something very close to it. The earliest date at which a name change can come into effect is August 2008. So far, four name change proposals have received significant support. Together with keeping things as they are now, these are:

1. **IAMG** – International Association for Mathematical Geology is our current name. Advantages of preserving the name in this form are that it is well established. Disadvantages include that many of our members and prospective members are not geologists. The word “geology” is not universally liked. Nearly all university departments have replaced “geology” by “geosciences” or by “earth sciences” because these new names are more comprehensive and attractive. However, some time ago, Dan Merriam asked me the question: “What is the difference between geology and geosciences? Geology is a study of the planet earth which includes all the sub-disciplines and according to the dictionary geosciences is a synonym for geology – why the change?”

2. **IAMG** – International Association for Mathematical **Geosciences** has the advantage that it has the support of many IAMG members. Additionally, in January 2008, Mathematical Geosciences will be the new name of our first international scientific journal (currently named: Mathematical Geology). It would be good if IAMG itself would have “geosciences” in its name as well. A disadvantage is that the change is rather small, too trivial to bother about it according to some members. The following drawback also applies to options 3-5: Any change would involve us making a new application to the US Internal Revenue Service, with the aid of a lawyer as is required, in order to maintain our tax exempt status. In addition to extra legal and accounting costs, any new name would require that our name be changed in many places. This could create more confusion than it is worth (e.g., new brochures/posters for August 2008 Oslo 33<sup>rd</sup> IGC booth in Oslo, Norway, could become obsolete almost immediately).

3. **IAMG** – International Association for Mathematical **Geosciences and Geoinformatics**. Advantage of adding “geoinformatics” is that this new and emerging sub-discipline involves increasingly large numbers of geoscientists currently “without a home” to borrow a phrase used by Ian Jackson. At our annual meetings, relatively many geoinformatics sessions have been and will be held. Increasingly, scientists active in this field publish articles in Computers & Geosciences, our second international scientific journal that has become most successful. There would be an analogy with the International Statistical Institute, which basically has two different types of members: those primarily interested in data acquisition (censuses, surveys, tabulations, indexes, etc.), and those working in the field of mathematical statistics. Within IAMG, emphasis always has been on method development and application. Geoscientists primarily interested in geological surveys are becoming increasingly computer-oriented and wondering about how to quantify uncertainty. As within ISI, a symbiosis of survey people and method developers would be beneficial to both parties. Disadvantages are that some IAMG members object to special recognition of “geoinformatics”. They feel that geostatistics or other sub-disciplines are equally important. Including “geoinformatics” in our name is bound to create some dissatisfaction.

4. **IAMG<sup>2</sup>** – International Association for Mathematical **Geosciences and Geoinformatics**. This option has G<sup>2</sup> at the end of the acronym, which is another way of writing GG (as in “IAMGG”). After GG (in IAMGG) had been proposed at our General Assembly in Liège, it was pointed out to me that IAMG could also serve as the acronym for “International Association for Mathematical Geosciences and Geoinformatics” (Option 3 above). Early on, “geoinformatics” became well established in some countries including Germany in the 1990s, but in Anglo-Saxon countries it was adopted much more recently as a sub-discipline in its own right. Our colleagues in China and Japan also consider geoinformatics to be an integral part of their activities including it in society names as well.

5. **IAMG** – International Association of **Modelers in Geosciences**. The rationale behind this proposal is that “mathematical” does not provide a good description of what IAMG members and prospective members are actually doing. Modeling would provide a better description. Like option 3, this new name would be significantly different from our existing name, although the acronym (IAMG) would be preserved. A disadvantage might be that this change may be too radical. Also, as far as I know, very few members are dissatisfied with the current use of the term “mathematical” in our name.

Members can still propose other new names until January 31<sup>st</sup>, 2008. The current plan is that there will be two ballots. First members will be asked to choose between the five (or more) name proposals by assigning a weight of 3 to their first choice, 2 to their second choice (if any), and 1 to their third choice (if any). The two names with most points will be on the second, simpler, ballot when members will be asked to choose one of two names only. At our General Assembly meeting at the 33<sup>rd</sup> International Geological Congress in Oslo, August 2008, IAMG members in attendance will be asked to ratify results of the second ballot if one of the new name proposals comes out on top.

*Frits Agterberg*

## Membership Campaign

IAMG membership has fluctuated around 500-600 for several years (see also NL 72). While the Association is in an enviable financial position, such a membership trend is a cause for concern in terms of the future intellectual vitality and viability of IAMG, especially when one considers the enormous growth in the popularity of GIS, 3D modelling and geoinformatics domains. These are domains which IAMG would consider as part of its legitimate constituency. The 2007 IAMG Council meeting in Beijing discussed the issue and possible options and agreed that a proposal should be drafted.

Councilor **Ian Jackson** has been active in drafting a proposal which was approved by the board, and he has started a new membership campaign. A letter introducing IAMG and listing the advantages of membership signed by Frits Agterberg is being sent to academic geoscience departments and geological surveys around the world. Because there are more than 1000 university geoscience departments worldwide, and their addresses are not readily available in electronic form, we will make use of the services of World of Learning where e-mail address retrievals can be performed.

Ian has also been instrumental in reserving a booth at the 33<sup>rd</sup> IGC 2008 in Oslo to publicize IAMG through posters, flyers, publication samples, rolling presentations using laptop and computer projector, advertising IAMG sessions and member talks at IGC 2008. He will need more volunteers to attend to the booth at the conference; if you can give some time to help, please e-mail Ian at [ij@bgs.ac.uk](mailto:ij@bgs.ac.uk).

We are grateful to Ian for taking this initiative and to Kathryn Bull, Ian's PA, for looking after the mailing for us.



## Slate of candidates for the 2008-2012 IAMG Council

The IAMG Nominating Commission consisting of Graeme Bonham-Carter (Canada), Heinz Burger (Germany), Ian Jackson (UK), Ricardo Olea (USA) and Zhou Yongzhang (China), with Frits Agterberg as non-voting chair, has proposed the following slate of candidates (see page 11 for descriptions of each position):

**President:** Vera Pawlowsky-Glahn (Spain)  
(already elected by acclamation because running without opposition)

**Vice President:** Qiuming Cheng (Canada/China) or John Schuenemeyer (USA)

**Secretary-General:** Niichi Nishiwaki (Japan) or Dan Tetzlaff (USA)

**Treasurer:** Larry Drew (USA) or Gina Ross (USA)

Candidates for ordinary **Councilor** (select six):

George Bárdossy (Hungary),  
Jef Caers (USA),  
Guillaume Caumon (France),  
Angela Diblasi (Argentina),  
Juan José Egozcue (Spain),  
Katsuki Koike (Japan),  
Eric Pirard (Belgium),  
Helmut Schaeben (Germany),  
Christien Thiar (South Africa),  
Raimon Tolosana-Delgado (Germany),  
Eric Verrecchia (Switzerland), and  
Richard Webster (UK).

**IGC Councilor:** Peter Dowd (Australia) or Simon Cox (Australia)

We are grateful to the Nominating Commission for completing its work that consisted of proposing candidates, evaluating them according to a numerical scheme, and final selections.

### Vice President



**Qiuming Cheng** is full professor at the Department of Earth and Space Science and Engineering and Department of Geography, York University, Toronto, Canada. He has been on partial leave without pay from York for establishing and directing the State Key Laboratory of Geological Processes and Mineral Resources in China. He holds a Changjiang Scholar Special Professorship in China University of Geosciences.

His research interests involve research and development of mathematical concepts, theory and methods as well as

GIS technologies for modeling singular geo-processes in mineralization and for quantitative assessments of mineral resources, water resources and environments. He has published more than 200 journal and conference proceeding papers. He has been a convener for numerous international conferences including IAMG, EGU, AGU, and IGC. He is the recipient of a number of prestigious awards including the IAMG's President Prize, 1995; Canada Foundation for Innovation Researcher, 1998; Ontario Primer Research Excellent award (PREA), 2000; Foreign Researcher by Japan Society for the Promotion of Science (JSPS), 2002; Changjiang Scholar awarded by Chinese Ministry of Education, 2003; Distinguished Young Scientist awarded by Chinese National Foundation of Science, 2005.

Dr. Cheng has been actively and continuously involved in participation of IAMG activities. Since the IAMG annual conference started in 1993, he has participated in 9 out of 12 IAMG annual conferences mostly as session chair or co-chair. He chaired with Graeme Bonham-Carter the 10<sup>th</sup> IAMG conference in Toronto, 2005, and as General Secretary with Professor Zhao Pengda organized the 12<sup>th</sup> IAMG conference in Beijing last summer. His services to IAMG include: Councilor (2004-2008), Award Committee member (2004-2007), Distinguished Lecturer Committee member (2005-2009), Associate Editor of Computers & Geosciences (2006-), and the

Editorial Boards of Mathematical Geology, Geochemistry of Exploration, Environment and Analysis, Earth Science, Progress of Geophysics and International Journal of Oceans and Oceanography.

He received a B.Sc. in mathematics, M.Sc. in mathematics and geology from Changchun University of Earth Sciences, and Ph.D. in mathematical geology and GIS from the department of Geology, University of Ottawa, Canada, 1994. He taught various undergraduate and graduate courses including GIS and data integration, statistics, mineralogy, time series and spectral analysis, and geomorphology.

**John H "Jack" Schuenemeyer** received his Ph.D. in statistics from the University of Georgia in 1975. For the past six years he has been president of Southwest Statistical Consulting, LLC. For two years prior to that, he was a research scientist for the U.S. Geological Survey. He was Professor of Statistics at the University of Delaware from 1976 to 1999 and held joint appointments in the departments of geology and geography. He is currently professor emeritus.



Jack has been a member of IAMG since 1975. He has served as an assistant and associate editor of Mathematical Geology from 1997 to the present and been a reviewer for Natural Resources Research, Computers & Geoscience and other statistics and geology journals. He has organized IAMG sponsored sessions at the University of Delaware and at national meetings of the American Statistical Association. He is also a member of the IAMG Student Affairs committee. Jack has been a participant at most of the IAMG sponsored conferences over the past 30 years. He has authored over 100 papers and is currently completing an intermediate level graduate textbook with Larry Drew on statistics in the earth sciences.

Jack was the recipient of the IAMG's John Cedric Griffiths Teaching Award in 2004 and is an elected Fellow of the American Statistical Association. He is also a member of the American Association of Petroleum Geologists. Jack co-organized the American Statistical Association (ASA) Section on Statistical Consulting and the Delaware Chapter of the ASA. He chaired an advisory committee for the U.S. Energy Information Administration.

Research interests include statistical model development, spatial statistics and graphics. He is currently project leader to develop methodology for a gas hydrate assessment of the U.S. Federal Offshore areas. He has developed oil and gas assessment methodology used in the U.S. Geological Survey assessments of Northern Alaska and in other regions.

Jack has had the privilege to interact with members of the IAMG over the past 30 years and is familiar with the strengths and needs of IAMG. He welcomes the opportunity to serve as Vice-president of IAMG. His proven organizational skills, dedication to quality, and ability to work with others, plus his ability to complete projects in a timely manner would strengthen the organization.

### Secretary-General



**Niichi Nishiwaki** was born in 1948 in Japan. He obtained his B.Sc. in geology and paleontology in Tohoku University, and his M.Sc. and D.Sc. in geology and sedimentology from Kyoto University. He continued his study by applying statistics and informatics to various geological areas of research in stratigraphy, sedimentology, structural geology, soil mechanics, biostratigraphy and systematics, together with the system development for data processing in geology. He was engaged in many geological projects. He was the project leader of the IGCP 269 on systematics in sedimentary petrology

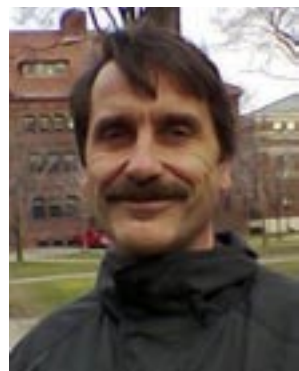
(1988-1992), and participated in several IGCP projects (148, 163, 239, 269, etc.). He contributed more than 100 papers to scientific journals including Mathematical Geology and C&G.

Prof. Nishiwaki has contributed to the IAMG for a long time. He was an IAMG Council member (1980-1984 and 1989-1992), Editorial member of Mathematical Geology (1985-2004) and C&G (1981-2004), and member of several committees (Award Committee, Membership Committee, President Prize Committee, Publication Committee, etc.). He organized the Section on Mathematical Geology and Geoinformatics in the 29th IGC (Kyoto, 1992) and the 3rd IAMG Annual Conference (IAMG '95) (Osaka, 1995). He received the IAMG Merit Award in 1992, and the Felix Chayes Prize in 1997.

He is a pioneer of the IAMG in Japan. He was a founding member of the Japan Society of Geoinformatics, which is the sister organization of the IAMG. He was Council member (1990-2008) and Editor-in-Chief of the journal of the society (1996-2006). Also he edited special issues for the IAMG (29th IGC Proceedings, 1993; IAMG '95 Proceedings, 1996).

He has been working for the IUGS for long time. He was a member of the IUGS Commission on Storage, Automatic Processing and Retrieval of Geological Data (COGEO DATA) (1984-1992), and the IUGS Commission on Systematics in Petrology (CSP) (1985-2008). He was a member of the Japanese IGCP National Committee (1990-1991), and the Japanese IUGS National Committee (1997-2005, 2007-2008). Recently he organized the 57th IUGS Executive Committee Meeting (Nara, 2007).

He has a good relationship with many IAMG members in USA, Canada, Europe, Russia, China, etc. Currently he is a professor of Nara University, and serving as Dean.



**Dr. Daniel M. (Dan) Tetzlaff** is Principal Geoscientist at Schlumberger Information Solutions in Houston, Texas. Born in Argentina with a German family background, he completed a Geology Degree at the University of Buenos Aires in 1979, where he also held an Assistant Teaching position in Geophysics. He later obtained M.S. and Ph.D. degrees in Applied Earth Sciences at Stanford University in 1983 and 1987 respectively, with course work in Geomathematics and Geostatistics, and a thesis on sedimentary process modeling under the direction of Prof. John Harbaugh. He has since worked

in industry (Western Atlas, Texaco, Baker Hughes, and Schlumberger) performing Research and Development and serving as a link to academic and research consortia in the fields of Numerical Geologic Modeling, Geostatistics, Quantitative Risk Assessment, Well-Log Analysis, Seismic Processing, and Image Analysis. In addition to numerous technical papers, he has authored an early book on sedimentary process modeling ("Simulating Clastic Sedimentation"), and more recently co-edited a volume on coastal geologic processes (GSA Special Paper #426). He was Distinguished Lecturer for the SPWLA (Society of Petrophysicists and Well Log Analysts) in 1991-1992, Treasurer of the IAMG in 1996-2000, is currently a member of the Steering Committee of the CSDMS (Community Surface Dynamics Modeling System of the University of Colorado; s. p.12), and member of the AAPG, SPE, IAMG, and SIAM. He lives in the U.S. but has personal and professional ties in Argentina, Germany, Norway, and France, travelling frequently to those countries.

As candidate to the position of Secretary General, Dan brings his past experience as IAMG Treasurer and international experience in industry and academia to serve the Council and Membership in achieving the Association's goals. He believes in an IAMG with stronger and more inclusive membership, and a departure from old habits toward a more pragmatic and predictable way of doing business, that will be regarded with respect by other organizations and communities. But he also cautions that greater visibility must be accompanied by strict adherence to our own statutes and bylaws and the laws of the countries in which we operate. Dan pledges to help move the IAMG forward within a framework of order in which every member of the Mathematical Geology community can feel equally and truly represented.

## Treasurer

**Larry Drew** received his Ph.D. in mineralogy, petrology, and statistics from The Pennsylvania State University in 1966. He worked in research for Geotech Inc. and Cities Services Oil Company from 1967 to 1972, and the U.S. Geological Survey since then. His research interests include 1. the development and use of discovery process models in petroleum resource assessment; 2. statistical methods for mineral resource assessment including tract delineation and selection of appropriate grade and tonnage models; 3. spatial statistical analysis as applied to the continuity of yields of water wells in fractured bedrock aquifers; 4. tectonics and structural geology associated with occurrence of porphyry copper deposits



in strike-slip fault systems; and 5. the assessment of environmental impacts associated with the production of natural resources.

Larry is currently working with Jack Schuenemeyer to produce an intermediate level textbook on statistical applications for earth scientists. He has published two books, and more than 130 papers and 70 abstracts. He has served as associate editor for *Natural Resources Research* for many years. He has also served on numerous editorial boards.

Larry was the recipient of the IAMG's John Cedric Griffiths Teaching Award in 2000 and served as the IAMG Distinguished Lecturer in 2005. He is a charter member of the IAMG and his dedicated service to the Association has been a central focus in his professional life. Larry would like to work with the IAMG Council in the capacity of treasurer to maximize the income of the Association and promote the growth in its membership. He has a broad historical perspective of the IAMG and is unusually qualified to weigh decisions about the future activities and business of the Association. As Distinguished Lecturer and a charter member, Larry has met many of the members of the IAMG, is cognizant of their concerns, and is committed to ensuring that IAMG is a strong and vibrant organization. He will pay claims promptly and keep the accounting as transparent as possible.

**Gina Ross** began her university studies at the Universidad Nacional Autonoma de Mexico (UNAM) where she received a bachelors degree in business administration and a masters in business law. Following graduate school, she was manager of the export division of Asturias Corporation, the largest textile company in Mexico. After coming to the United States, Gina studied computer science and French, with graduate studies in radio and TV at the University of Kansas. In 1986 she joined the Advanced Projects/Mathematical Geology Section of the Kansas Geological Survey as a research assistant to Dr. John C. Davis. From 1989 to 2004 she held the position of manager of Automated Cartography. In 1996, she was appointed to the Data Capture Working Group of the National Geologic Map Database Project, a project of USGS and the American Association of State Geologists.



Gina served as the General Chair of IAMG2001 Conference in Cancun, Mexico, and in 2004 was elected Treasurer of IAMG. In 2006 Gina joined the Remote Sensing and Geoinformatics Section of the Kansas Biological Survey at the University of Kansas, a position she still holds.

## Councilor

**George Bárdossy** studied geology at the R. Eötvös University, Budapest from 1947 to 1951. He worked as exploration geologist for the Hungarian aluminium industry from 1951 to 1957. He was head of the laboratory for sedimentary petrography in the Hungarian Geological Institute from 1957 to 1963. For the next eleven years he worked at the Geochemical Research Laboratory of the Hungarian Academy of Sciences. In 1974 he joined the Hungarian Aluminium Corporation, where he served as chief geologist until 1985, when he retired.



He received the PhD degree in 1968 and the academic doctor degree in 1974. He was elected corresponding member of the Hungarian Academy of Sciences in 1993 and regular member in 1996. In 1997 he was elected foreign member of the Croatian Academy of Sciences. In 1965 and 1985 he was guest professor for one semester each time at the Université de Paris VI and the Université de Toulouse. In 1985 he was elected vice-president of the French Geological Society. He was invited lecturer and exploration expert in 35 countries. He was awarded in 1997 the highest Hungarian scientific decoration.



Bárdossy published 225 scientific articles and five books in Hungarian, English, Russian and Chinese. His main topics of scientific activity are mathematical geology, informatics, geochemistry, mineral exploration, resource/reserve estimation, and radioactive waste disposal.

He was the first chairman of the Geomathematical and Informatical Section of the Hungarian Geological Society from 1988 to 1994. He worked on the introduction of geostatistical methods in Hungarian mineral exploration since 1979 and he was invited several times by Matheron to Fontainebleau. In 2004 he published „Evaluation of Uncertainties and Risks in Geology. New Mathematical Approaches for their Handling” together with Prof. J. Fodor. He is a member of IAMG and he participates regularly in its annual Conferences. He is a member of the editorial board of “Mathematical Geosciences.”

**Jef Caers** received a MSc ('93) and PhD ('97) in mining engineering from the Katholieke Universiteit Leuven, Belgium. Currently, he is an associate professor of Energy Resources Engineering at Stanford University, California, USA. He is also director of the Stanford Center for Reservoir Forecasting, an industrial affiliates program in reservoir modeling and geostatistics. Jef Caers' research interests are in the area of geostatistics, spatial modeling and pattern recognition methods applied to all areas of the Earth Sciences. He was awarded the Vistelius Research Award of the IAMG in 2001, is Associate Editor of the journal *Mathematical Geology* and will serve as chairman for the IAMG 2009 annual conference, to be held at Stanford University. As council member he would continue to promote the involvement of young researchers and early career professionals into the Association.



**Guillaume Caumon** is an Associate Professor in Numerical Geology at the School of Geology, Nancy Université (France), where he also directs the Gocad Consortium, an international research program dedicated to 3D modeling of geological objects. He obtained a PhD in 2003, directed by Prof. Jean-Laurent Mallet, and a MSc (1999) in Geological Engineering, both from Nancy Université. His PhD topic was a blend of computer science and geology, and concerned interactive editing and visualization of 3D geological models. In 2003-2004, he was a postdoctoral scholar at Stanford University with Prof. Andre Journel, developing a global uncertainty assessment method accounting for multiple geological scenarios. Guillaume's main research and teaching interests are 3D geological modeling, including structural and stratigraphic modeling, visualization and gridding of geological volumes, geostatistics, and inverse theory.



He has been a member of the IAMG since 2003, and is running for the office of councilor to support the activities of the IAMG.

**Angela M. Diblasi** holds a full professorship in Statistics at the University of Cuyo in Mendoza, Argentina. She is also the head of the Statistics Department and a consulting member of CRICYT, a research centre for Environmental Research. She has been an IAMG member and a member of the Editorial Board of *C&G* since 1998.

Angela got her first degree in Mathematics at the University of San Luis, Argentina. In 1996, she completed the PhD in Statistics at Glasgow University, U.K. Between 1999 and 2003 she has been the Secretary General of the Argentinian Statistical Society.

Since 1997 her scientific activity has been focussed in Spatial Statistics with applications to Geology, Environmental and Economy. She has advised several degree and post degree theses, published and taught in these areas. She was invited as a visiting professor of the universities of San Luis (Argentina), Padua (Italy), Pública de Navarra, Girona, UPC in Barcelona (both in Spain), and La Sapienza Rome (Italy).

Her reason for running for Councilor is to help bringing the IAMG into Latin American countries, organizing activities here for all the people in this organization, and encouraging people from these countries to join the IAMG activities.



Prof. Dr. **Juan José Egozcue** studied Physics, oriented to Geophysics and Meteorology, at the University of Barcelona (Spain). He obtained his PhD



in the same university with a dissertation on maximum entropy spectral analysis (1982). In 1978 he got a position as a lecturer in the school of civil engineering in Barcelona (Escuela de Ingeniería de Caminos, Canales y Puertos de la Universidad Politécnica de Cataluña, UPC, Spain), teaching several topics of applied mathematics. In 1983 he started teaching Probability and Statistics. He became Associate Professor in 1985, and Full Professor in 1989, in the UPC, where he has been Chair of the Department of Applied Mathematics III and vice-rector of the university. His research activities are presently centered in two lines: Estimation of natural hazards using Bayesian methods, specially applied to seismic, rainfall and ocean wave hazards; and statistical analysis of compositional data, with special emphasis in the geometry of the sample space, the simplex. He has published more than 60 articles in different journals of applied mathematics, engineering and physics, most of them related to geology, geophysics and statistics. He has been leader of several research projects. Nowadays, his main project is on vulnerability of dikes and breakwaters under action of severe ocean waves (granted by the Port Authority of Spain), and he participates actively in a project of compositional data analysis supported by the Spanish ministry for education and science.

**Katsuaki Koike** received a BS (1986), MS (1988), and PhD (1995) in Mineral Science and Technology (Engineering and Mathematical Geology) from Kyoto University, Japan. In 1988, he became a research assistant in applied geophysics of Resource Engineering at Kumamoto University. Currently, he is a Professor in the Department of Life and Environmental Sciences, New Frontier Sciences at Kumamoto University. His research group includes 13 graduate students, 3 PhDs, 1 research associate, and 1 technician.

His interests can be summarized as: (1) Remote sensing for clarifying Earth environments and geosphere structures - detecting salinization, groundwater resources, sea water quality, tectonophysics, and crustal deformation. (2) Applied geophysics and geo-





chemistry for integrated imaging of geologic structures - geothermal reservoirs, deep structure of active faults, and submarine groundwater flow. (3) Mathematical modeling for geosphere environments - geostatistics and geoinformatics for 3D spatio-temporal modeling of water quality, groundwater level fluctuation, geologic structure, and rock fractures.

Katsuaki has been committee chair of the Division of Exploration Technology of the Mining and Material Processing Institute of Japan (MMIJ) since 2004. He served as chair of the Ninth International Symposium on Mineral Exploration "Toward New Frontiers for Resource Exploration & Sustainable Development" in 2006 held at ITB, Indonesia.

He has authored or co-authored over 64 peer-reviewed papers in domestic and international journals including 14 papers in the three IAMG journals, and over 66 papers in international conference proceedings. He was awarded three best paper prizes from the Japan Society of Remote Sensing in 2000, the MMIJ in 2004, and the Japan Society of Geoinformatics in 2007, and also the young researcher prize of the MMIJ in 1997.

He has served the IAMG on the editorial advisory board of Computers & Geosciences from 2004 and Mathematical Geology from 2006. He served as the guest editor-in-chief of Natural Resources Research of vol. 14, no. 4, a special issue on the session of mathematical geology for resource exploration at the IGC32. He convened sessions of mathematical geology at the IGCs in Kyoto and Florence as well as at the IAMG annual conferences. His main reason for running for councilor is to promote interdisciplinary activity of the IAMG by collaborating with engineering geology, remote sensing, geophysics, and environmental sciences.

**Eric Pirard** (born 1960) is professor of "Mineral resources and geo-imaging" at Université de Liège, (ULg) Belgium. He got his master degree in geological engineering from ULg in 1984. He was initiated



to quantitative geology through a series of stays at the Ecole des Mines de Paris in Fontainebleau, where he developed a special interest for mathematical morphology and image processing. He got his PhD from ULg with a thesis on "Euclidean morphometry of planar shapes". This work implemented original algorithms to measure concepts of particle shape analysis initially suggested by pioneers in mathematical geology such as Wentworth and Krumbein.

Since then, he has been an active promoter of quantitative image analysis in mineralogical and geological sciences. His first interest was focussed onto quantitative

ore microscopy and especially automated recognition of mineral species from multispectral images. Later on, he got involved into quantitative description of geomaterials and proper imaging of material textures at any scale. More recently, he also showed an interest for remote sensing applications in mineral exploration and mining environment monitoring.

Aside from developing advanced imaging techniques, Pirard has been actively involved in university cooperation projects both in South America (Bolivia, Peru, Chile,...) and in Africa (DR Congo, Burkina Faso,...). He regularly teaches geostatistics to mining engineering students of these countries both in Spanish and French language.

He is vice-president of the IMA Commission for Applied Mineralogy, treasurer of the International Society for Stereology and Image Analysis and a long time regular member of IAMG, IEEE, MinSoc. He has convened the Geovision 99 symposium and served as chair for the IAMG'06 conference in Liège. He is author of more than 80 papers in quantitative image analysis and edited special issues on geological imaging for Industrie Minérale and Computers & Geosciences.

With his experience in geo-imaging and his international activity in teaching geological data analysis, Eric is willing to contribute to IAMG by bridging the gap between traditional geostatistics and other fields of quantitative geosciences.

By education, **Helmut Schaebe**n is a mathematician trained in analysis and stochastics. He received his diploma in mathematics in 1976, his Ph.D. in science in 1981, and his "venia legendi" for "Mathematical models

for the geological and material sciences" in 1993 from the department of Geosciences of RWTH Aachen University of Technology (Germany). He has been working with geo- and material scientists for more than 25 years.

At RWTH Aachen he received his initiation to Geomathematics by Heinrich Siemes working on crystallographic preferred orientation. After working on groundwater flow models he pursued texture analysis with Rudy Wenk at UC Berkeley, CA, USA (1982-84). At Bonn University, Germany (1984-89), he was involved in the DFG priority programme on "digital geoscience map compilation" with "computer aided geometric modeling of geologic surfaces and solids". At Metz University, France (1989-93), he worked on texture analysis. Since 1996 he holds the chair of "Geoscience Mathematics and Informatics" at Freiberg University of Mining and Technology (Germany).

His favorite topics are: 1) mathematics of the analysis of crystallographic preferred orientation measured by X-ray, neutron, synchrotron or electron diffraction, 2) generalization of two-dimensional geographic information systems to spatio-temporal geoscience information systems including the development of data models and data structures for geoscience data.

He has been involved in cooperative projects with the universities of Metz, Nancy (France), Basel (Switzerland), Hanoi (Vietnam), the International Centre for Diffraction Data, USA, and the Joint Institute of Nuclear Research, Dubna (Russia).

Helmut Schaebe is chair of IAMG's student affairs committee and since 2007 a member of the editorial board of Mathematical Geosciences. Right now he is working on a special issue "Spherical Mathematics and Statistics". He is a member of „Deutsche Geowissenschaftliche Gesellschaft“ and head of its special interest group „Geoscience Informatics“; he is also a member of SIAM and its special interest group "Geosciences".

If elected, Helmut would focus on the development of syllabuses of master programs for geoscience mathematics and informatics, and on the development of standards and quality assurance procedures of the corresponding curricula.

**Christien Thiert** is a South African. She studied Biometry and Statistics at the University of Stellenbosch where she obtained a Hons BSc. (Agriculture) in 1983. She then worked for five years as a biometrician for



the South African Department of Agriculture. Whilst raising two daughters, she worked as a secondary high school teacher in computer studies. In 1989 she enrolled for a Masters degree in Mathematical Statistics at the University of Cape Town (UCT) which she completed in 1990. During that period she lectured part-time at several universities in the Western Cape. In 1994 she completed her PhD (UCT), and then joined the UCT Avian Demography Unit as a scientific officer. In 1998 she took up a post-doc fellowship at UCT's Centre for Interacting Graphical Computing (CIGCES) and in 1999

was appointed a senior lecturer at the department of Statistical Sciences, University of Cape Town. She was promoted to associate Professor in 2004 and acted as Deputy HOD (2005/2006) and as HOD in 2007. She is a founder member and senior researcher at the African Earth Observatory Network-AEON.

Christien's research interest is mainly in GIS and spatial modelling; she works extensively on mineral resource-potential modelling and related projects at continental scales to understand fundamental processes of metallogenesis. In AEON, she leads the GIS research unit, with a focus on the statistical analysis and modelling of Earth System resources and data mining.

She is a member of the South African Statistical Association and the IAMG.

*continued on p. 10*

Candidates - from p. 9

**Raimon Tolosana** is a post-doc fellow researcher at the Department of Sedimentology and Environmental Geology, of the University of Göttingen, Germany (since mid 2006).



He was born in Barcelona, Spain, in 1976. In 2001 he completed his degree on Engineering Geology, a joint degree of the Technical University of Catalunya and the University of Barcelona. He obtained in 2005 a PhD degree on Environmental Science and Technology by the University of Girona (Spain) with a thesis on Geostatistics for constrained variables (like compositions or probability vectors), under the direction of Dr. Vera Pawlowksy-Glahn. He has been a member of IAMG since 2002, and has participated in all IAMG conferences since that

year, with posters, talks and courses. He is the recipient of the IAMG Andrei Borisovich Vistelius Research Award for young scientists in 2007, and guest professor at the China University of Geosciences, Wuhan.

His current research is focused on the application of compositional data analysis and statistics of other constrained variables to sedimentology and biogeochemistry. In his current position, he actively works on the adoption of quantitative methods in these (typically quite unreceptive) fields, and the inclusion of geological meaning into statistical models. E-learning is a near future interest to help bridge that gap. In this line, apart of keeping in touch with his former professors and colleagues (mostly mathematicians), he routinely collaborates with field geologists and biologists, from several groups mostly in Germany and Spain.

Raimon wants to work to increase the visibility of mathematical geosciences outside the Association (for both students and researchers), improve awareness of the opportunities IAMG is offering to young researchers as well as their presence in the several committees of the Association.

**Eric P. Verrecchia.** Born in 1961 in Paris (France), he first studied mathematics and physical geography, and then was trained in geology at the universities of Paris-Sud Orsay and Pierre et Marie Curie in Paris, where he obtained his PhD. In 1988, he joined the "Centre National de la Recherche Scientifique" (CNRS) where he stayed as a full researcher until 2000. After a Marie Curie Fellowship from the EU at the University of Ghent (Belgium) in 1994-95, he joined the University of Burgundy in Dijon (France) where he developed image analysis and morphometry for paleontology and sedimentology. In 1999, he organized an international symposium on "Image analysis of geological objects" supported by the IAMG and acted as a guest editor of a special issue of *Mathematical Geology* on this subject. In 2000, he obtained a full professorship in exogenic geodynamics at the University of Neuchâtel, Switzerland. Since then, he has developed stochastic models to simulate organo-mineral growth (e.g. stromatolites) using diffusion limited aggregation engines and cellular automata as well as statistical tools for signal processing (e.g. to detect cycles in shell growth increments). Since 1998, he has taught multivariate statistics for Earth and life scientists as well as signal processing and image analysis. He has been a member of the IAMG since 1995.



**Richard Webster** is a soil scientist whose professional career spans more than four decades in Europe, Africa and Australia. He was Research Associate at Oxford University, led a soil survey in Zambia and research on soil properties and composition at Rothamsted, and designed and analysed soil survey with CSIRO in Australia. He has held research posts at the École des Mines de Paris and in the Institut National de la Recherche Agronomique, France, and was Guest Professor at the Swiss Federal Institute of



Technology in Zürich and Lausanne and at the Institute of Forestry, Snow and Landscape Research, also in Switzerland. He is currently Senior Research Fellow at Rothamsted and Visiting Professor in the Universidad Nacional Autónoma de México. His interest in the application of statistics to soil survey and to geosciences more generally stemmed from his early experience in Africa. It was reinforced when he was asked to predict soil conditions at inaccessible sites and led to his adapting the then newly developing methods of geostatistics for the purpose. Since then he has worked on numerous projects to map the concentrations of plant nutrients, pollutants and parasitic organisms in soil, on the analysis of remote imagery and on the spatial distribution of childhood cancer.

His papers to the journals of the IAMG have won prizes, and as editor of the *European Journal of Soil Science* he promoted the IAMG's 'Series for Students' and contributed to it himself. His most recent book, *Geostatistics for Environmental Scientists* written with Margaret Oliver, has been widely acclaimed and will shortly appear in a second edition.

### IGC Councilor

**Simon Cox** is a Senior Principal Research Scientist at CSIRO. He is based in the Exploration and Mining division, but currently is splitting his time with the Land and Water division. His work in geo-informatics focusses on web-based information transfer.

Simon's formal training was in Geological Sciences (BA, Cambridge), Rock Mechanics (MSc, London) and Geophysics (PhD, Columbia NY). He joined CSIRO Geomechanics, had a spell at Monash University Earth Sciences, and then moved to CSIRO Exploration and Mining.

His involvement with geoinformatics followed from recognition that the laboratory is too small a place for certain studies in rock mechanics, so acquisition and management of data from the real world is essential. However, finding that techniques in geoinformatics needed development, he has focussed on those. Simon was responsible for a major early geoscience web-site for the Australian Geodynamics Cooperative Research Centre, which included one of the first geological web-mapping systems. Managing the web-site introduced him to content management issues leading on to several years working on metadata standards. He was on the Dublin Core Metadata Initiative advisory committee, the Australian Government Locator Schema advisory committee, and has assisted the Australia-New Zealand Land Information Council. Spatial data management issues led to an active engagement with the Open Geospatial Consortium (OGC), editing or contributing to several OGC standards including Geography Markup Language (GML) and Observations & Measurements (O&M). Simon has assisted in the transfer of OGC standards to ISO status through Technical Committee 211 (Geographic Information).

While being based in the mineral exploration sector, Simon has also worked on informatics projects with earth and environmental scientists in water resources, ocean and atmospheric sciences, and biological taxonomy.

Simon served on the Council of the IUGS Commission for Geoscience Information 2004-2008. For IAMG he currently serves on the editorial board of *Computers and Geosciences*. In 2006 OGC awarded Simon the Kenneth D. Gardels award for sustained contributions and leadership.

**Peter Dowd** holds a BSc from the University of New England (Australia), MScA from Ecole Polytechnique de Montréal (Canada) and PhD from the University of Leeds (UK).

Following his initial graduation five years in the Australian mining industry during which he had an extended study period at the Centre de Géostatistique at Fontainebleau, France. His work in this period included the first known mining applications of geostatistics in Australia (to the Broken Hill orebodies in 1968).

In 1972 he moved to Canada to work with Michel David at the École Polytechnique de Montréal, where he also undertook a part-time MScA.





# Member News

## Where Are They Now

by Dan Merriam

*As part of the preparation for the 40th anniversary of our Association in 2008, Dan Merriam had suggested this column to track the whereabouts and developments of members once in the limelight. This is his second contribution. Anyone who has knowledge of what our elder colleagues (see list below) have been doing is invited to send a short summary to the Editor.*

The following were all charter members of IAMG and attended the organizational meeting at the IGC in Prague in 1968. Through the years they have contributed to activities of the Association.

In 1975 he moved to the University of Leeds in the UK, initially to undertake a PhD in geostatistics under the supervision of A.G. ('Bon') Royle, and then as an academic member of staff. During his time at Leeds he was Professor of Mining Engineering and variously Head of the Department of Mining and Mineral Engineering, Acting Head of the Department of Chemical Engineering and Head of the School of Process, Environmental and Materials Engineering.

In August 2004, Peter took up the position of Executive Dean of the Faculty of Engineering, Computer and Mathematical Sciences at the University of Adelaide in Australia where, amongst other things, he has established a Masters programme in Geostatistics and an undergraduate Mining Engineering programme.

He is a Past President of the Institution of Mining and Metallurgy (now the Institute of Materials, Minerals and Mining), a Fellow of the Royal Academy of Engineering and a Fellow of the Australian Academy of Technological Sciences and Engineering. He is a member of the Editorial Board of *Mathematical Geology* and Editor of *Mining Technology*.

His research and teaching have been primarily in the areas of mineral resource evaluation, geological modelling, hydrocarbon reservoir characterisation and the characterisation of rock masses for environmental applications such as the underground disposal of hazardous wastes. He has also made related contributions to the application of operations research in the mining industry, to mineral economics and to mine finance and valuation.

He has consulted extensively over the past 30 years to the mining industry in Australasia, Europe, South Africa, the Middle East and North America.



## RESPONSIBILITIES OF OFFICERS AND COUNCILORS

The IAMG Council is the board of directors of the IAMG. The President, Vice President, Secretary General, and Treasurer, the Past President, the IGC Councilor (for the next IGC in Brisbane, Australia, 2012) and six **Ordinary Councilors** are all voting members of the Council. Any IAMG member can bring a concern before the Council. Council members are expected to provide opinions, propose solutions, and participate in voting to select alternatives. The President, Vice President, Secretary General, and Treasurer have the following additional executive duties:

The IAMG **President** is the head of the organization and Chair of the governing Council. She appoints Committees and Commissions in consultation with Council, serves as an ambassador to other professional organizations, as legal representative of the Association in dealing with publishers and other groups, and as a Solomonian judge to resolve conflicts when disputes become personal. A good president should foresee opportunities and difficulties, rather than react when situations have reached a crisis status.

The **Vice President** is to step in as President in case of an unexpected departure of the President from office. The Vice President is the IAMG representative before the International Statistical Institute (ISI)—to which IAMG has been an affiliated society since its foundation. ISI meetings are held every odd year. The main responsibility of our Vice President is to organize a joint session at all ISI meetings, which are scheduled to take place in South Africa in 2009 and in Ireland in 2011.

The IAMG **Secretary General** is the operational officer of the Association. The main duties are to make arrangements and prepare minutes for every live meeting of Council and for every meeting of the General Assembly. Each year the Secretary General has to schedule the presentations of major IAMG awards. The Secretary General also prepares an annual report of the main Association activities for the International Union of Geological Sciences (IUGS). Moreover, the Secretary General is in charge to prepare and collect ballots for amendments to the Constitution and for elections to the Council.

The **Treasurer** is the Chief accountant and financial officer of the organization and deals with our money, disburses funds that we owe, and looks after investments. Additionally, the Treasurer prepares annual accounts in coordination with the IAMG office in Kingston, Ontario, which is responsible for membership dues, subscription payments and the membership database.

◁

**Hannes Thiergärtner** is a Professor at the Free University of Berlin where he teaches mathematical geology and environmental informatics; he also consults on subsoil contaminations. He was educated at the Mining Academy of Freiberg and worked for many years at the Central Geological Institute, Berlin. His experience included analysis of geochemical surveys of East Germany, shallow and deep sea exploration, deep drilling, and contamination projects. He later served on the Environmental Agency of Berlin-Weissensee, Federal Agency for Problems Related to the German Reunion. He has taught at the Mining Academy of Freiberg, E-M-Arndt University of Greifswald, and the Free University of Berlin. For many years he was editor of *Mathematische Geologie* and in 2005 edited a volume on mathematical geology by founding members of IAMG. e-mail: [thiergartner@aol.com](mailto:thiergartner@aol.com)



**Václav Němec.** The sixteenth Krumbein Medal was presented to Václav Němec in 1991. Václav was instrumental in founding the IAMG, serving as host to the Organizing Committee in Prague in 1968. He has been active in the Association ever since. He served as Eastern Treasurer for all the years 1968 - 1996 (except 1980 - 1984) when such an office was made necessary by the political situation. He was the bridge between the East and the West during those years. Starting in 1968 he organized regular international sections of mathematical geology at the Mining Příbram Symposia in Czechoslovakia, many cosponsored by the IAMG. His original university studies in economics were suspended for political reasons in 1951 but he got his diploma in this field 40 years later from the University of Economics in Prague. He spent two years of military service in a special unit for politically unreliable persons and then started to work in a state enterprise for geological exploration of industrial minerals. While employed he obtained his applied geophysics degree in 1959 from Charles University in Prague and submitted his doctoral thesis in economic geology in 1967; later he received a PhD in mining sciences from Košice Technical University. His professional experience has included evaluation of mineral reserves, appraisal of mineral resources, and computerized space and time models of ore deposits; and more recently his interest has been focused on problems of geotectonics. He retired in early 1990, but has remained active. Václav was prominent in the organization of IAMG's 25th Silver Anniversary meeting in Prague where he worked diligently to assure a good and successful meeting. He, with the support of his wife Lidmila, has been organizing symposia on geothermics. He currently is Vice-President of the Association of Geologists for the International Development (AGID). Václav is an accomplished pianist and in addition has been involved with research in the history of the Czech music. He serves as Vice-President of the Bedřich Smetana Society promoting the work of the most important Czech composer. e-mail: [lidmila.nemcova@quick.cz](mailto:lidmila.nemcova@quick.cz)



**Danie Krige**, known as the Father of Mathematical Mining Geology, has spent his professional career in the South African mining industry. After retirement, he occupied the chair of mineral economics for ten years, as professor, at the University of the Witwatersrand. He is still active as a private consultant. In recognition of his contributions he was awarded the Krumbein Medal, IAMG's highest honor, in 1982. He played an important part in developing quantitative techniques for evaluating ore resources for mining properties. His geostatistical contribution, which was originally a weighted moving-average technique, developed rapidly into a range of techniques now used worldwide in the field of ore valuation. These techniques were designated in his honor as *kriging* by Georges Matheron and his geostatistics group at the Ecole des Mines Fontainebleau. Danie obtained



his bachelor, master, and doctor degrees in mining engineering from the University

.... and more Member News ...

of Witwatersrand, and has received many awards including three honorary doctorates from the universities of Pretoria and South Africa, and the Mining University of Moscow. He has published many papers, participated in many international congresses, and recently was the keynote speaker at the 33<sup>rd</sup> APCOM Symposium in Santiago, Chile. He has lectured or taught short courses at several universities in South Africa, USA, Germany, Greece and Australia. e-mail: [omricon@iafrica.com](mailto:omricon@iafrica.com)

**Vic Loudon.** Serving on the ad hoc Organizing Committee of the IAMG and then attending the organization meeting in Prague made Vic Loudon of the British Geological Survey a founding member of the Association. Vic was elected the first treasurer (west) of IAMG. He spent much of his professional career with the BGS in Edinburgh and London. After retiring from the BGS, he was appointed an Honorary Research Associate and continues to work on exploring 'The Case For Transforming the Geoscience Survey Knowledge System: Where Digital Spatial Models Meet the Semantic Grid' as described in Geological Society of America Special Paper 397. He was born in Edinburgh, Scotland, obtained his BSc (Geol) at Edinburgh University, and was a well-site and regional geologist in Calgary. Impressed by future potential of computers in geology, he returned to Edinburgh to delve into possible applications to sedimentation and structure for a PhD, followed by post-doc work developing eigenvector analysis for structural geology with Fortran programs at Northwestern University, then a NERC research fellow at Reading University, and a visiting scientist at Kansas Geological Survey. At the BGS he was head of computer unit and later the information systems group on the introduction of then revolutionary and suspect computer methods, particularly database, digital cartography, statistical analysis, word processing, web publication, spatial modeling. e-mail: [tv@bgs.uk.ac](mailto:tv@bgs.uk.ac)



## Founding Members at the Organizational Meeting in Prague in 1968

Hannes Thiergärtner and I have tried to locate the twenty members of the IAMG Organizational Committee that met under the guns at the IGC in Prague in 1968. Several have passed on, and several have been highlighted in thumbnail sketches in the IAMG Newsletter. Here is the list and information available on each as of 2007.

**F.P. Agterberg** (Canada) - retired from GSC but remains active  
**F. Benkő** (Hungary) - retired in Budapest, Hungary  
**D.J. Burdon** (United Nations representative) - address unknown  
**C.J. Dixon** (UK) - deceased  
**\*J.W. Harbaugh** (USA) - retired from Stanford University but still active  
**R. Hesse** (FRG) - last known address at McGill University in Montreal, Canada  
**R. Ivanov** (Bulgaria) - address unknown  
**H. Knappe** (DDR) - retired in Berlin but not active in geomathematics  
**V. Kutolin** (USSR) - living in Russia, address unknown  
**#T.V. Loudon** - retired from BGS in Edinburgh as an Honorary Research Associate  
**\*R.B. McCammon** (USA) - retired from the USGS living in US Pacific Northwest  
**D.F. Merriam** (USA) - retired from KGS/WSU but active  
**#V. Němec** (Czechoslovakia) - retired from the state enterprise for geological exploration of industrial minerals but remains active  
**\*R.A. Reyment** (Sweden) - retired from Uppsala University but active in research  
**D.A. Rodionov** (USSR) - deceased (JMG 27/6 - 1995)  
**#H. Thiergärtner** (DDR) - retired in Berlin but active in teaching and research  
**A.B. Vistelius** (USSR) - deceased (NRR 10/4 - 2001)  
**G.S. Watson** (USA) - deceased  
**\*E.H.T. Whitten** (USA) - retired from Mich Tech University and moved to England  
**P. Wilkinson** (UK) - deceased (JMG 36/3 - 2004)

Abbreviations: GSC = Geological Survey of Canada; UK = United Kingdom; USA = United States of America; FRG = Federal Republic of Germany; DDR = Deutsche Demokratische Republik; USSR = Union of Socialist Soviet Republics; BGS = British Geological Survey; KGS = Kansas Geological Survey; WSU = Wichita State University

\*update in IAMG Newsletter No. 74 (June 2007)

# update in IAMG Newsletter No. 75 (Dec. 2007)

Daniel F. Merriam

The National Science Foundation has awarded **James Syvitski**, Director of the Institute of Arctic and Alpine Research at the University of Colorado at Boulder, \$4.2 million in a cooperative agreement over five years to lead a national effort to model the changing face of the Earth's surface. A national team of hundreds of scientists from dozens of federal labs and universities around the nation will use



computer tools to model events like the erosion of mountains by rivers and glaciers and flooding caused by hurricanes and tsunamis, and to track climate records trapped in sediments and the impacts of sea level on coastlines. Syvitski is stepping down as INSTAAR director after 12 years to become executive director of the new NSF initiative, known as the Community Surface Dynamic Modeling System, or CSDMS.

"We are interested in how landscapes and seascapes change over time, and how materials like water, sediments and nutrients are transported from one place to another," said Syvitski, who will maintain his faculty appointment as a geological sciences professor at CU-Boulder. "This will give us a better understanding of Earth and allow us to make better predictions about areas at risk to phenomena like deforestation, forest fires, land-use changes and the impacts of climate change."

CSDMS is one of three prongs of an NSF effort to mobilize the academic research community to model planet Earth, from its deep interior to its climate systems. The National Center for Atmospheric Research (NCAR) in Boulder is spearheading a similar national project to model Earth's atmosphere, while the California Institute of Technology has taken the lead on a massive effort to model Earth's interior, including volcanoes, earthquakes and the movement of continents.

Syvitski said the CSDMS team of researchers from universities and federal agencies will use powerful supercomputers to model the evolution of landscapes and sediment basins on time scales ranging from individual events like modern-day floods or landslides to processes taking place over millions of years. The researchers will use the models to focus on natural resource use and conservation, natural hazard mitigation, development issues, environmental stewardship and terrestrial surveillance for global security and national defense.

"This effort will target the near-surface environment where people live," said Syvitski. "CSDMS will focus on complex interactions involving rock, soil, water air, ice and living organisms and how they regulate the natural habitat and determine the availability of life-sustaining resources."

The NSF award for the project will be augmented with financial and in-kind support from other federal agencies, including NASA, the National Oceanic and Atmospheric Administration, the Office of Naval Research, the Army Research Office, the Army Corps of Engineers and the U.S. Geological Survey. CSDMS should eliminate much of the duplication among researchers and federal agencies and better meet the needs of decision makers and industry.

"This project will benefit the university directly by involving graduate students in a variety of research projects with scientists from CU-Boulder, other universities and federal agencies," said Syvitski.

The project also will involve enhanced collaboration with NCAR, which recently announced a partnership with the state of Wyoming to build a new NSF-funded supercomputing data center for scientific research in Cheyenne. The facility will be able to perform hundreds of trillions of floating-point operations, or teraflops, per second -- making it among the fastest supercomputers in the world -- and keep the United States at the forefront of weather, climate and Earth system research.

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**John Harbaugh** reports: First, I've largely left academia (although I retain my title as Professor of Geological Sciences Emeritus at Stanford University) and have finished the manuscripts for several research projects that I had been working on until recently. Second, my professional focus is now in the commercial world and involves managing an oil and gas royalty trust, now being recast as the Harbaugh Mineral Lands LLC, which is an Oklahoma-based limited liability company, and involves mineral properties, plus some producing working interests, in Oklahoma and the Texas Panhandle. So in many respects, I'm back to my roots, having spent my childhood in Oklahoma, and later having worked as a geologist for the Carter Oil Company based in Tulsa (one of the many predecessors of today's ExxonMobil).

Unrelated, I have a new email address: [john.harbaugh@stanford.edu](mailto:john.harbaugh@stanford.edu)

**Tim Whitten** responds with a correction to NL 74

I was honoured to see my youthful face in the current IAMG Newsletter which arrived yesterday. I don't suppose anyone will try using it but, if they use the e-mail address you cited, the message will go into a black hole; I think you knew this but, when broadband finally arrived in wildest Dartmoor, my address became: [tw@bonehill.eclipse.co.uk](mailto:tw@bonehill.eclipse.co.uk). The demon address went totally dead.



# Student Affairs

## News from IAMG Student Chapter at China University of Geosciences (IAMG-SCC)

IAMG2007 conference was held on August 26-31, 2007 in Beijing. Since it was the first time that the IAMG annual conference had been held in China, lots of IAMG-SCC members made great efforts to ensure its success. Before the conference, they did much laborious work such as collecting, formatting, collating, and printing the accepted papers to give birth to the proceedings of IAMG2007 including hard copies and CDs; They kept in touch with the conferees via timely emails and faxes recording their information and replying to their enquiries patiently; They made good propaganda for the conference by distributing the circulars and updating the conference website. During the conference, IAMG-SCC members set up several service desks in the lobby of Xijiao hotel to help the conferees with their registrations, payments,



*IAMG-SCC members from Wuhan and Beijing*

accommodations, and dispensed the proceedings, program booklets and mementos. They guided conferees to the meeting rooms, answered their questions, and notified them of the latest information providing a great convenience for them. In each session there were conscientious student members who helped adjusting equipment, copying slide files beforehand and taking pictures as well as some other logistics work. This time the conference had a special session for IAMG Student Chapters and young researchers in mathematical geosciences. Many papers of IAMG-SCC members were included in the proceedings, such as



*IAMG-SCC members and conferees around the service desks*

Mr. Ma Xiaogang who made an oral presentation titled "Point-source database theory and its application in database architecture design of digital mine", and Mr. Chibamba Douty whose topic was "Urban Expansion in Wuhan City (1987-2005), China: An exploratory remote sensing and GIS investigation" etc. All in all, IAMG2007 provided a good opportunity for IAMG-SCC members from Beijing and Wuhan to meet, communicate and cooperate together.



Mr. Ma Xiaogang making oral presentation



Mr. Chibamba Douty

After IAMG2007, the president of IAMG Frits Agterberg and his wife Codien visited China University of Geosciences (Wuhan). On September 24, 2007, Frits gave IAMG-SCC members a wonderful lecture on "Probabilistic Mineral Resource Evaluation", followed by an enjoyable klatch. They shared moon cakes, fruits, drinks and some other snacks together celebrating the Chinese traditional festival "mid-autumn day", they chatted freely and had a good time.



Frits Agterberg giving IAMG-SCC members a lecture



Frits and Codien sharing a happy klatch with IAMG-SCC members

*Hung Rui*

The **Student Chapter at Stanford University** has a new website:  
<http://pangea.stanford.edu/~lstright/IAMG/index.htm>

The new 2007-2008 Leadership Committee consists of:

Lisa Stright — President  
Whitney Trainor — VP and Treasurer  
Antoine Bertonecello — Secretary



## Student Travel Grants

The Student Affairs Committee, consisting of Chairman **Helmut Schaeben**, **Zhijun Chen** (China), **Angela Diblasi** (Argentina), **Juan José Egozcue** (Spain), **Sergey Kotov** (Russia), **Abani Samal** (USA), **Maria Theresa Schafmeister** (Germany), **Jack Schuenemeyer** (USA), and **Christien Thiert** (South Africa), has decided that the following four IAMG Student Members, who each presented a paper or poster at IAMG2007, will receive an IAMG travel grant of US \$400 each:

Yosoon Choi (Korea), Department of Energy Systems Engineering, Seoul National University;

Xinchuan Li (China), Institute of Land and Resources Information Systems, China University of Geosciences, Wuhan;

Jonathan Remo (USA), Department of Geology, Southern Illinois University, Carbondale;

Ka Sun (China), Institute of Land and Resources Information Systems, China University of Geosciences, Wuhan.

Chairman Helmut Schaeben also reports that, in total, 13 students have submitted complete research grant application forms that are now being evaluated by the Student Affairs Committee.

# IAMG Journal Report



The most important development this year has been the transition to new editors for our three journals. Coupled with changes in manuscript handling as the business moves to the web for editorial processes, large delays in the publication of *Mathematical Geology*, and the change in the name of our flagship journal to *Mathematical Geosciences*, this has meant a very busy year.

We are happy to see that *Mathematical Geology* and *Natural Resources Research* issues are now received on time by our members. We have been working with Springer to draw up a new contract between them and the IAMG for publication of *Mathematical Geology*. Graeme Bonham-Carter has been heading up this effort, and a proposed and edited contract is currently being examined by a lawyer. This same lawyer provided legal advice to our society during the change in the journal's name to *Mathematical Geosciences*.

Springer has agreed to requests from Roussos Dimitrakopoulos and Frits Agterberg to keep the 2008 member dues for *Mathematical Geosciences* the same as *Mathematical Geology* dues for 2007, to allow free electronic subscriptions for members receiving the print copy, and to allow half-rate subscription rates for IAMG Student Members (with IAMG and Springer each contributing 25% of regular member subscription rate to subsidize student subscribers).

*Mathematical Geosciences* has a new core editorial team with three new Associate Editors, who have been given the responsibility and right to handle the processing of and recommendations for manuscript submissions. These are Dr Jef Caers, Stanford University, USA; Dr Donald Singer, US Geological Survey, USA; and Dr Gerald van den Boogaart, University of Greifswald, Germany. A fourth colleague will complete the team in due course. Dr Ed Sharp has graciously agreed to continue as Deputy Editor, to assist in the transition to the new editorial team. Associate editors are now formally appointed, for a period of two years, and with responsibilities specific to each board member, and are receiving an honorarium, provided by Springer.

MG has now a new award: the Editor's Best Reviewer Award, to be given for the first time in early 2008 (for 2007 reviews).

The positive turnaround of MG following production problems may be summarized as follows: (a) the backlog of submitted papers to be processed has been cleared; (b) the turnaround time of submitted manuscripts has seen a major improvement; (c) the number of submissions has increased, and (d) the ISI-impact factor of MG, as recently announced, stands at 0.857 for 2006; it is a pleasant surprise as it is up from 0.74 in 2005. (e) Overall, in 2007, MG will publish 44 manuscripts, 2 book reviews and one association announcement.

*Computers & Geosciences* is maintaining its current rate of article submission (~34 articles/month). An effort is being made to increase the number of Associate Editors and increase the overall quality of manuscripts through some initiatives as outlined below. A recent report from the publishing editor has indicated that authors are reasonably satisfied with the journal in most aspects, however, there has been an increase in the lag between article submission and publication. A number of remedies are being sought to shorten the time from submission to publication, and they are discussed below.

Earlier this year, the article styles were changed for the journal. The new styles and scope of the journal can be viewed at: [http://www.elsevier.com/wps/find/journaldescription.cws\\_home/398/description#description](http://www.elsevier.com/wps/find/journaldescription.cws_home/398/description#description)

The impact factor is up slightly from last year, from 0.779 to 0.802 for 2006. As the number of manuscripts continues to increase (>400 for 2006), the quality of the submissions is increasing along with the rejection rate (66% for 2006).

Boyan Brodaric has been nominated for the role as Deputy Editor for the journal. New Associate Editors are Clayton Deutsch (University of Alberta) and Steven Wise (University of Sheffield). Rob Harrap

(Queen's University, Kingston, Ontario) has been added as a member of the Editorial Board. Yuhong Liu has replaced Tom Jones as Book Review Editor. Tom Jones has made a valuable contribution to the journal in his role as Book Review Editor and the journal thanks him for his contributions.

## Natural Resources Research

In my short time as the new editor of NRR, one thing has become abundantly clear. I owe much to the editors of journals that have reviewed and published my papers. In particular, the efforts by Mann, Ehrlich, Merriam, Hohn, and Sharp stand out in my mind as they managed reviews and took red pens to my manuscripts. Well done, gentlemen, and may my editorial efforts reach the standard you have set!

As for the journal, we are getting a steady trickle of papers which look to be promising. I am not as busy as I'd like to be, however, handling manuscripts. Dan Merriam is working on a special issue on geothermics, to appear in mid-2008, and I have a couple of offers for other special issues that have not yet firmed up. The big challenge I continually encounter is finding reviewers who are not "too busy" to review papers. We have a 50% decline rate. For those who have said "yes" to reviewing manuscripts, I thank you for helping out in this essential task. Review times are about 75 days' on average. The electronic processing is working pretty smoothly, with all submissions now being through the website.

*Jerry L Jensen*  
Editor-in-Chief

## C&G 2006 Best Paper Award

Dr. **Tomislav Hengl** is the winner of the 2006 Best Paper Award of *Computers & Geosciences* for his paper "Choosing the right pixel size" that appeared in volume 32, no. 9, pages 1283-1298. He was associated with the European Commission, Directorate General JRC, Institute for Environment and Sustainability, in Ispra, Italy and now has a research position at the University of Amsterdam, Netherlands. Hengl was born in Osijek, Croatia in 1974. He received a diploma from the University of Zagreb, a masters from the International Institute for Geoinformation Science and Earth Observation in Enschede, and in 2003 a doctorate from Wageningen University in the Netherlands. His website is <http://spatial-analyst.net/>



<>

## 2006 Best Paper Award for Mathematical Geology

2006 was a wonderful year for our best paper award! Two outstanding papers amongst many excellent ones made it impossible to choose one without being unfair to the other. Thus, the winners of the 2006 Best Paper Award are:

"Modeling Spatial Variability along Drainage Networks with Geostatistics" by Jean-Stéphane Bailly, Pascal Monestiez and Philippe Lagacherie, 38(5):515-539, and

"On the Use of Non-Euclidean Distance Measures in Geostatistics" by Frank C. Curriero, 38 (8):907-926



**Jean Stéphane Bailly** is a research scientist and a lecturer at the ENGREF, the French Institute of Forestry, Agricultural and Environmental Engineering, a member of the PARISTECH, the Paris Institute of Technology. He is conducting his research at the TETIS (Territories, Environment, Remote Sensing and Spatial Information) and the LISAH (Laboratory of Soil, Agrosystems and Hydrosystems Interaction Studies) joint research units, both located in Montpellier, France. Dr. Bailly is also lectures on geostatistics, hydraulics and remote sensing.



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A Comparison of Methods for the Stochastic Simulation of Rock Fractures — Peter Dowd, Chaoshui Xu, Kanti V. Mardia, and Robert J. Fowell

He started his career in East Africa as an agronomist specialized in water sciences and remote sensing. Later, he completed a masters degree in biostatistics at the University of Montpellier 2, where he received his Ph.D in hydrology in 2007. Dr. Bailly works on digital mapping methods for hydrology, hydro-ecology, with a focus on hydrographic networks. The main methodological issues he is working on are remote sensing for hydrography, drainage algorithms from digital terrain modelling, stochastic spatial modelling, spatial data classification and spatial uncertainties propagation in hydrological models. For the past few years, Dr. Bailly has been conducting research on the spatial variations and evolutions of the artificial components of the cultivated landscapes, as artificial hydrographic networks, and their hydrological impacts.

**Philippe Lagacherie** is a Senior Research Scientist at the LISAH (Laboratory of Soil Agrosystems and Hydrosystems Interaction Studies), a joint research unit of the INRA (National Institute of Agronomical Research), the IRD (the French Research Institute for Development) and SupAgro (International Center of Agronomical Sciences teaching) located in Montpellier (France). He is the leader of the "Spatial organisation and functioning of the cultivated landscapes" research team. He trained as an agronomist and completed his PhD in soil science in 1992. He obtained his senior scientist degree from Montpellier 2 University in 2002 for his research on digital soil mapping methods. Since the late 1980s, Dr. Lagacherie



has been involved in research dealing with Digital Soil Mapping. He has developed several DSM methods that associate soil surveyor knowledge, GIS, geostatistics, and fuzzy logic. He organised the first international workshop on Digital Soil mapping in Montpellier (2004) and is the co-editor of the first book on Digital Soil Mapping published in 2006. Dr. Lagacherie has also conducted research projects, since 1997, for evaluating the changes of soil properties caused by tillage practices and their hydrological impacts. He is a member of the editorial boards of Geoderma, the International Journal of Applied Earth Observation, and Geoinformation.

**Pascal Monestiez** is the Director of Research at the Institut National de la Recherche Agronomique, France. He studied geostatistics at the École des Mines of Paris and received his Ph.D. in 1978 from the University of Paris 6, Department of Statistics. Over the past thirty years, Dr Monestiez has worked on geostatistical methods and their applications in interdisciplinary programs about the environment, agriculture, plant genetics and ecology. The main methodological issues he addressed are non-stationarity in covariance, spatio-temporal modelling, non-Euclidean support for random fields modelling in multivariate geostatistics and more recently, geostatistics on count data, spatial abundance estimates and hierarchical modelling for spatial data in ecology.



**Frank C. Curriero** is an Assistant Professor in the Department of Environmental Health Sciences and the Department of Biostatistics at the Johns Hopkins Bloomberg School of Public Health. His research focus is spatial statistics and GIS applications in public health. During the past ten years Dr. Curriero has developed and applied statistical and GIS methods to spatially characterize interactions between the environment and public health. His published research has included studies involving spatial variability in cancer burden and incidence, geostatistical based exposure assessment models, disease surveillance, and method development for spatial statistical techniques. Dr. Curriero has worked to keep the GIS component and the spatial



methods linked together, providing a more complete operating framework ideally suited for applications in environmental health and communication with scientists from these substantive areas. He has served on a panel for the Board of Environmental Studies and Toxicology of the National Academies of Science, and routinely has been invited to participate on expert panels to develop geostatistical methods for water quality assessment in the Chesapeake Bay region of the Eastern United States. Dr. Curriero has developed, and annually teaches, two core courses in spatial analysis and GIS at Johns Hopkins. He has also founded and directs the GIS Laboratory in the Department of Environmental Health Sciences.

Winning papers are always an example to be followed and cornerstone to the success of a journal. Our congratulations to the 2006 winners and a sincere thanks for their efforts and contributions to Mathematical Geology and to the profession.

*Roussos Dimitrakopoulos*  
Editor-in-Chief

## MG Volume 39, Number 8 (2007)

The NU Espression for Probabilistic Data Integration — Eugenia I. Polyakova and Andre G. Journel

Risk Assessment Based on the Mathematical Model of Diffuse Exogenous Geological Processes — Alexey Viktorov

The Discrete Cosine Transform, a Fourier-related Method for Morphometric Analysis of Open Contours — Cyril H. Dommergues, Jean-Louis Dommergues and Eric P. Verrecchia

Hydraulic Conductivity Estimation via Fuzzy Analysis of Grain Size — James Ross, Metin Ozbek and George F. Pinder

ASSOCIATION ANNOUNCEMENT — Raimon Tolosana-Delgado : 2007 Andrei Borisovich Vistelius Research Award — Laudatio by Vera Pawlowsky-Glahn and Karl Gerald van den Boogaart

## Natural Resources Research

### Volume 16, Number 3 (September 2007)

Ethanol Production: Energy and Economic Issues Related to U.S. and Brazilian Sugarcane — David Pimentel and Tad Patzek

Evaluation of Diverse Geometric and Geostatistical Estimation Methods Applied to Annual Precipitation in Asturias (NW Spain) — Carlos J. Fernández and José I. Bravo

Frequency Distribution of Thickness of Sediments Bounded by Cenozoic Biostratigraphic Events in Wells Drilled Offshore Norway and along the Northwestern Atlantic Margin — Frits Agterberg, Felix Gradstein and Gang Liu

H<sub>2</sub>-rich and Hydrocarbon Gas Recovered in a Deep Precambrian Well in Northeastern Kansas — K. David Newell, John H. Doveton, Daniel F. Merriam, Barbara Sherwood Lollar, William M. Waggoner and L. Michael Magnuson

Issues in Energy Economics Led by Emerging Linkages between the Natural Gas and Power Sectors — Jeremy B. Platt

Unconventional Energy Resources and Geospatial Information: 2006 Review — American Association of Petroleum Geologists, Energy Minerals Division

## Computers & Geosciences

### Volume 33, Issue 7, (July 2007)

Quantifying distances from points to polygons — applications in determining fetch in coastal environments — Mika Murtojärvi, Tapio Suominen, Harri Tolvanen, Ville Leppänen and Olli S. Nevalainen

An image processing algorithm for the reversed transformation of rotated microscope images — Boguslaw Obara

A finite element method for hydraulic conductivity identification in a seawater intrusion problem — Moulay Hicham Tber and Mohamed El Alaoui Talibi

Hybrid image classification and parameter selection using a shared memory parallel algorithm — Rhonda D. Phillips, Layne T. Watson and Randolph H. Wynne

A fuzzy topology for computing the interior, boundary, and exterior of spatial objects quantitatively in GIS — Wenzhong Shi and Kimfung Liu

An integrated coastal modeling system for analyzing beach processes and beach restoration projects, SMC — M. González, R. Medina, J. Gonzalez-Ondina, A. Osorio, F.J. Méndez and E. García

3D-reconstruction of complex geological interfaces from irregularly distributed and noisy point data — Tobias Frank, Anne-Laure Tertois and Jean-Laurent Mallet

Seasonal statistics: The 'seas' package for R — Michael W. Toews, Paul H. Whitfield and Diana M. Allen

Delineation of support domain of feature in the presence of noise — Tao Pei, A-Xing Zhu, Chenghu Zhou, Baolin Li and Chengzhi Qin

Use of Walsh transforms in estimation of depths of idealized sources from total-field magnetic anomalies — Ranjit K. Shaw, B.N.P. Agarwal and B.K. Nandi

Comments on the paper by Guy Simpson and Sebastien Castellort, "Coupled model of surface water flow, sediment transport and morphological evolution", Computers & Geosciences 32 (2006) 1600-1614 — Zhixian Cao

Reply by Simpson G.D.H. and Castellort, S. to comments by Cao, Z. on the paper "Coupled model of surface water flow, sediment transport and morphological evolution" Computers & Geosciences, 32, 1600-1614 (2006) — Guy D. Simpson

Enhancing linear features in image data using horizontal orthogonal gradient ratios — G.R.J. Cooper and D.R. Cowan

P. Renard, H. Demougeot-Renard and R. Froidevaux, Editors, Geostatistics for Environmental Applications, Proceedings of the Fifth European Conference on Geostatistics for Environmental Applications, Springer, New York (2006) (480pp., US\$169, Hardbound, ISBN: 3-540-26533-3). — Yuhong Liu

Richard C. Aster, Brian Borchers and Clifford H. Thurber, Parameter Estimation and Inverse Problems, Elsevier Academic Press, Amsterdam (2005) ISBN 0-12-065604-3 301pp., plus CD with Matlab code for examples, data for homework problems, and library of Regularization Tools for Matlab by Per Christian Hansen, Price US\$79.95. — Geoff Bohling

### Volume 33, Issue 8, (August 2007)

A GIS tool for the evaluation of the precipitation forecasts of a numerical weather prediction model using satellite data — Haralambos Feidas, Themistoklis Kontos, Nikolaos Soulakellis and Konstantinos Lagouvardos

GIS model for geothermal resource exploration in Akita and Iwate prefectures, northern Japan — Younes Noorollahi, Ryuichi Itoi, Hikari Fujii and Toshiaki Tanaka

High-order Galerkin methods for scalable global atmospheric models — Michael N. Levy, Ramachandran D. Nair and Henry M. Tufo

Long-term sea-level projections with two versions of a global climate model of intermediate complexity and the corresponding changes in the Earth's gravity field — O. Makarynsky, M. Kuhn and W.E. Featherstone

A proposed stereo matching algorithm for noisy sets of color images — Lior Shamir

Algorithms for the calculation of exact displacements, strains, and stresses for triangular dislocation elements in a uniform elastic half space — Brendan J. Meade

Segmentation and object-based classification for the extraction of the building class from LIDAR DEMs — George Miliareisis and Nikolaos Kokkas

A graphical user interface for particle-in-cell finite element analysis of lithospheric deformation and mantle convection in two dimensions — S. Dyksterhuis, R.D. Müller, P. Rey and L. Moresi

C. Elachi and J. van Zyl, Introduction to the Physics and Techniques of Remote Sensing (2nd ed), Wiley (2006) ISBN 0-471-47569-6 (552 pp., US\$145 hardcover). — B.J. Thomson

## Volume 33, Issue 9, (September 2007)

Reliability of sampling designs for spatial snow surveys — Kalle Kronholm and Karl W. Birkeland

1D vertical model for suspended sediment transport in turbulent tidal flow: Application to the English Channel — H. Smaoui, F. Boughanim and G. Chaplain

Visualization of large spatial data in networking environments — Liqiang Zhang, Chongjun Yang, Xiaohua Tong and Xiaoping Rui

Representing geometric structures in 3D tomography soil images: Application to pore-space modeling — Olivier Monga, Fatou Ndeye Ngom and Jean François Delerue

A model for calculating the errors of 2D bulk analysis relative to the true 3D bulk composition of an object, with application to chondrules — Dominik C. Hezel

An artificial neural net assisted approach to editing edges in petrographic images collected with the rotating polarizer stage — Frank Fueten and Jeffrey Mason

Simulation of geological domains using the plurigaussian model: New developments and computer programs — Xavier Emery

David D. Pollard and Raymond C. Fletcher, Fundamentals of Structural Geology, Cambridge University Press, New York (2005) 500pp., price US\$ 85 hardback, ISBN: 0521839270. — Terry Engelder

Application of the Mohid-2D model to a mesotidal temperate coastal lagoon — Nuno Vaz, João Miguel Dias, Paulo Chambel Leitão and Rita Nolasco

## Volume 33, Issue 10, (October 2007)

Spatial Analysis - Special Issue

Edited by C.D. Lloyd, J.M. McKinley and S. Wise

Introduction to this special issue on spatial analysis — Christopher D. Lloyd, Jennifer M. McKinley and Stephen Wise

Determining the effect of asymmetric data on the variogram. I. Underlying asymmetry — R. Kerry and M.A. Oliver

Determining the effect of asymmetric data on the variogram. II. Outliers — R. Kerry and M.A. Oliver

A linearised pixel-swapping method for mapping rural linear land cover features from fine spatial resolution remotely sensed imagery — M.W. Thornton, P.M. Atkinson and D.A. Holland

Modelling the semivariograms and cross-semivariograms required in downscaling cokriging by numerical convolution-deconvolution — Eulogio Pardo-Igúzquiza and Peter M. Atkinson

Non-stationary variogram models for geostatistical sampling optimisation: An empirical investigation using elevation data — P.M. Atkinson and C.D. Lloyd

About regression-kriging: From equations to case studies — Tomislav Hengl, Gerard B.M. Heuvelink and David G. Rossiter

Representing soil pollution by heavy metals using continuous limitation scores — Marija Romić, Tomislav Hengl, Davor Romić and Stjepan Husnjak

Space-time modelling of air quality for environmental-risk maps: A case study in South Portugal — Amílcar Soares and Maria J. Pereira

A local space-time kriging approach applied to a national outpatient malaria data set — P.W. Gething, P.M. Atkinson, A.M. Noor, P.W. Gikandi, S.I. Hay and M.S. Nixon

Effect of differing DEM creation methods on the results from a hydrological model — S.M. Wise

A fuzzy c-means classification of elevation derivatives to extract the morphometric classification of landforms in Snowdonia, Wales — K.E. Arrell, P.F. Fisher, N.J. Tate and L. Bastin



## A report from the IAMG2007 Conference

Qiuming Cheng

IAMG2007 held in Beijing, August 26-31, 2007 was a great success. With more than 400 participants it was our largest annual meeting ever. In total, 204 papers and posters were presented in 14 sessions. The 240 official delegates came from 22 countries including China (170), USA (7), Germany (5), and UK (5). There were 76 students in attendance and 55 student helpers. Participants received Proceedings on CD and in book-form (ISBN: 987-0-97342220-3-0). An opening ceremony, closing ceremony and award ceremony were held during the conference. Our IAMG Council meeting and Nominating Commission meeting were held on August 26<sup>th</sup> and 28<sup>th</sup>, respectively. Five keynote lectures were delivered and they were all well received. A group of 55 delegates attended the one-day field trip to the Great Wall on 29<sup>th</sup>. Three short courses were offered free of charge on the 31<sup>st</sup> of August and they were well attended. Eight delegates went on a tour after the conference to visit Lushan Mountain and organized a two-day workshop in China University of Geosciences, Wuhan. Many organizations and companies in China provided generous financial support. A full report with financial summary will be provided to the IAMG office. The conference organizers Professor Zhao Pengda, Frits Agterberg and Qiuming Cheng thank all the delegates for attending the conference.



Chairman Pengda Zhao & Frits Agterberg

Secretary General Qiuming Cheng

## Opening Ceremony







Attending the council meeting (l. to r.): Qiuming Cheng, Helmut Schaeben, Gina Ross, Frits Agterberg, Ian Jackson, Pengda Zhao



Heinz Burger accepting the Chayes Prize for Hilmar von Eynatten



Helmut Schaeben and some Student Chapter members





# Banquet with Karaoke



President Jin'gao Zhang welcomes Vera Pawlowsky-Glahn as honorary professor at CUG Wuhan



VisteliusAward to Raimon Tolosana-Delgado



Professor Deng Jun, VP of CUG Beijing congratulates Frits Agterberg as the honorary professor of CUGB



Conference of the International Association for Mathematical Geology (IAMG'2007)



**THE MINING PRIBRAM SYMPOSIUM 2007****The international section on GEOETHICS**

The international section on GEOETHICS was organised at Příbram - the Czech town 60 km SW from Prague in a region with long famous mining activities (recently stopped) going back to the 13-th century. Since the early 1960s regular annual symposia have been organised in Příbram dealing with various problems not only of mining activities but also with specialised sections on geology of mineral deposits and many other disciplines.

21 colleagues from 7 countries of Europe and Asia were present (France, India, Kazakhstan, Poland, Russia, Ukraine and the Czech Republic) - 7 newcomers among them (fortunately mostly representing the young generation).

Altogether 27 papers have been published in the Proceedings volume of the section (including also papers authored by colleagues from Bulgaria, UK, and USA). Twenty-two contributions had oral presentations followed by high level discussions. The total number of all contributions to geoethics at Příbram in the course of last 15 years - written by authors from 21 countries - has reached the number 239.

**Working Group for Geoethics**

Two special sessions of the WORKING GROUP FOR GEOETHICS under the umbrella of the ASSOCIATION OF GEOSCIENTISTS FOR INTERNATIONAL DEVELOPMENT (AGID) have made it possible to deeply discuss various regards and to formulate appropriate comments and recommendations also to following matters:

a) The preparation of the General Symposium on GEOETHICS at the 33rd INNemecTERNATIONAL GEOLOGICAL CONGRESS (August 6 - 14, 2008; Oslo, Norway - all needed information at the IGC web site [www.33igc.org](http://www.33igc.org)); Václav Němec and Lidmila Němcová serve as convenors of this Symposium. All colleagues are invited to submit their own abstracts or to ask other persons for submitting abstracts to this General Symposium and/or for taking part in it when attending the Oslo Congress.

b) As to the further promotion of geoethics everybody should be encouraged to his own active personal contributions to the development of this discipline; various articles, textbooks etc. should be written and published anywhere in the world in local languages in order to inform about both national and international activities in the field of geoethics, to incorporate this discipline into curricula of local (national) education at all levels etc.

c) The existing structures as established at the Mining Příbram Symposium and at the Working Group for Geoethics under the umbrella of AGID should be used; more visibility is needed what can be solved by regular refreshment of AGID website [www.bgs.ac.uk/agid/](http://www.bgs.ac.uk/agid/) including regular publication of the existing GEOETHICS NEWS (Dr. Němec will continue to publish them at least twice a year or in any case when for some special circumstances such a need will arise).

d) Geoethical aspects can be promoted also by appointing (through IUGS, UNESCO or even the United Nations) some new organs like an international commission or intergovernmental panel on geoethics or on world mineral resources (in some analogy with the Intergovernmental Panel on Climate Change); the respective suggestions can be arranged by the AGID and its working group on geoethics - also as the result of negotiations at the coming International Geological Congress. Dr. Němec will take care of it asking support of other AGID top representatives.

e) Various ideas have been discussed as to the possibility given by the French law (Association Loi 1901) to found a new Association (for Geoethics) which does not demand to solve any special juridical problem; this possibility reported by J. Varet and strongly supported by A. Drozdovskaya (including the personal tasks for V. Němec in such a new liaison) might be acceptable only under the condition that any further progress of geoethics in the frame of already existing (sub c) and possible new structures (sub d) would appear as impossible; any new international structure would be ineffective without being recognised by the IUGS. On the other hand such a possibility can be used by the French colleagues to found a co-operating national organisation.

**International Year of Planet Earth**

Several presentations at the sessions had a direct link to the International Year of Planet Earth (IYPE) with a corresponding personal liaison of the presenters to the IYPE structures (Professor Ahluwalia as member of the US National Committee, Veronika Stedra in charge of the Czech preparatory committee). Many geoethical aspects - including those of geo-education and outreach - are identical with the main goals of the IYPE. Some closer co-operation of geoethicists with the IYPE structures will be of help for both partners. In the Czech Republic plans are being made to organise a section on the IYPE just as part of the Mining Příbram Symposium 2008 with the participation of Czech geoethicists. Another at the international level can be realised as a joint session with Geoethics in the frame of the Mining Příbram Symposium 2009. Any suggestions should be addressed to Dr. Václav Němec.

**Position Statement on Government's Role in Energy and Mineral Resources (comments to the draft of the Geological Society of America)**

The draft of the Geological Society of America "Position Statement on Government's Role in Energy and Mineral Resources" was submitted to a large discussion. Geoethical principles including international solidarity should be incorporated to the draft which might be extended also to other problems like natural disasters, climate change, etc. For instance, more attention of Earth scientists should be given to problems of warming and cooling of the Earth by studying their long term cyclic character caused by natural forces and deciphering it in the Earth crust. Dr. Němec as IUGS vice-president is authorised to formulate the comments and recommendations and to send them directly to the chairperson of the GSA Panel on Energy and Mineral Resources Jon Price ([jprice@unr.edu](mailto:jprice@unr.edu)).

**Conclusion**

The meeting was successful, and a new wave of interest for geoethics is expected in connection with the coming International Geological Congress as well as with the International Year of Planet Earth. The next international section Geoethics at Příbram will be organised in October 2009. All potential participants are asked to pay attention - when preparing their papers as case studies in geoethics - to formulate the appropriate geoethical dilemma maintaining the needed equilibrium between explaining facts and analysing the given dilemma.

*Excerpted from Final Report by  
Václav Němec, Vice-President of AGID,  
and Lidmila Němcová, convenors  
Prague, October 22, 2007*



## News from Freiberg (Germany)

### PhD in Mathematics for ...

Ralf Hielscher, 2007, from the Department of Mathematics and Informatics, Freiberg University of Mining and Technology. The title of his thesis is "The inversion of the Radon transform on the rotational group and its application to texture analysis". His supervisors were Prof. Jürgen Prestin, Lübeck University, and Helmut Schaeben.

**Abstract:** The major mathematical problem of texture analysis (analysis of preferred crystallographic orientation) is the numerical inversion of the one dimensional totally geodesic Radon transform of a function defined on the group  $SO(3)$  of proper rotations in  $R^3$ . In his thesis, Ralf Hielscher has studied the resolution of this ill-posed inverse problem and derived error bounds with respect to incomplete and erroneous data. He suggested and implemented an algorithm based on a discretization with radial basis functions and fast Fourier methods on the sphere  $S^2$ , its cross product  $S^2 \times S^2$ , and the group  $SO(3)$ , respectively. With numerical tests he has demonstrated that the algorithm does not require a regular grid and applies to sharp textures.

### Diploma in Geoscience Informatics for ...

Susan Waage, 2006, on completion of her diploma thesis "Erstellung eines hydrogeologischen Strukturmodells und dessen Übertragung in ein Grundwasserströmungsmodell für die Absetzanlagen Culmützsch und Trünzig am Standort Seelingstädt der Wismut GmbH" – „Implementing a Hydrogeological Structural Model for the Tailings Dump Site Seelingstädt of the Wismut GmbH" [in German] supervised by Dipl.-Ing. Thomas Metschies, Wismut GmbH, Chemnitz, and Helmut Schaeben.

**Abstract:** Uranium mining and milling continuing from the early 1960s until 1990 close to the town of Seelingstädt in Germany resulted in 4 tailings impoundments with a total tailings volume of about 105 million  $m^3$ . Leakage from these tailings enters the underlying aquifers and is discharged into surface water streams. High concentration of salts, uranium and several heavy metals are released from the tailings. At present the tailings ponds are covered with an interim cover.

Remediation of the ponds will be continued by reshaping and covering. For prediction of the future contaminant release and dispersion groundwater flow models can be used. However these models have not only to describe the groundwater flow in the aquifers but also the interaction of the tailings material which were dumped in former open mine pits with a hydraulic connection to the surrounding aquifers. Due to the discharge history of tailings material these ponds have a heterogeneous material composition influencing the recharge characteristics of the underlying aquifers.

The thesis presents the approach of implementing a hydrogeological structural model of the tailings pond and the surrounding aquifer system. This approach is the basis to model the hydraulic flow processes within the tailings ponds in a regional ground water flow model. The approach used is flexible and includes the hydraulic effects resulting from time dependent geotechnical processes within the tailings ponds. The hydraulic effects of pond water level as well as the consolidation of the fine slime tailings which influence the seepage through the deposited tailings material can be adequately described in the resulting groundwater flow model.

Evelyn Bennwitz, 2006, on completion of her diploma thesis "Herstellung und Implementierung eines erweiterten Aufschlusstyps für die Software GeODin" – "Design and implementation of an extended data model of outcrops within the software package GeODin" [in German] supervised by Dr. Jens Richter, Geological Survey of Saxony, Freiberg, and Helmut Schaeben.

Andreas Klauke, 2007, on completion of his diploma thesis "Datenbankmanagementsystem für die Anzuchten in Freiberg" – "Database management system for the ancient sewage system of Freiberg" [in German] supervised by Dipl.-Ing. René Kaiser, GolHo, Niederschöna, and Helmut Schaeben.

### Diploma in Geology for ...

Martina Böhme, 2007, on completion of her diploma thesis "Predictive 3D mineral potential modelling: Application to the VHMS deposits of the Noranda District, Canada" supervised by Dr. Marcus Apel and Helmut Schaeben.

**Abstract:** Many methods for the combination of multiple data exist to estimate the mineral potential of a region, but until now all these methods have only been applied to 2D case studies. The purpose of this work is to integrate 3D geological models and available 3D data in order to predict mineral potential in 3D space and thereby aid the expert in finding target locations that also yield information on depth and the form of potential new targets. For an initial demonstration

of the applicability of probabilistic methods for predictive mineral potential modelling in a 3D GIS the Weights-of-Evidence method is applied to a 3D geological model of the Central Camp in the Noranda district, Canada. The Noranda district is among the best-studied massive sulphide deposit districts and therefore serves as a unique test case. This case study is conducted with the help of a developed gOcadR plug-in. The main focus of this study is to test and improve this plug-in. Finally several locations with high potential for volcanic-hosted massive sulphide deposits can be defined within the Central Camp.

### BSc in Network Computing for ...

Mario Friedrich, 2006, on completion of his BSc thesis "Entwicklung einer Software zur geowissenschaftlichen Datenverwaltung und Visualisierung basierend auf XML und C++/Qt" – "Design of a software for the management and visualisation of geodata based on XML and C++/Qt" [in German] supervised by Dr. Marcus Apel and Helmut Schaeben.

### Positions for ...

Dr. Ralf Hielscher, now research associate with the Geoscience Mathematics and Informatics group at Freiberg University

Dr. Marcus Apel now Senior Engineer, Reservoir Modelling, with Statoil, Stjørdal, Norway

Dr. Tobias Frank now Senior Software Engineer, Metallic Materials and Processes, with Neue Materialien Bayreuth, Germany

Dipl. Geoinformatikerin Susan Waage, 3D Geomodeling, now with G.E.O.S. (Consulting Engineers), Freiberg, Germany

Dipl. Geoinformatikerin Evelyn Bennwitz, Reservoir Uncertainties, cotutelle de thèse, ENSG Nancy and TU Freiberg

*Helmut Schaeben*



*"No wonder you haven't discovered anything for sixteen years, Winston. You haven't taken the lens cap off yet!"*

*Am. Scientist 2002*



# Upcoming Meetings

68th Annual Meeting of the DEUTSCHE GEOPHYSIKALISCHE GESELLSCHAFT = German Geophysical Society, Freiberg, Germany, **3 - 6 March 2008**. email: Prof. Dr. Klaus Spitzer, <http://dgg.geophysik.tu-freiberg.de/english/index.php>

GEOSPATIAL INFORMATION & Technology Association's Annual Conference 31, GITA, Seattle, WA, USA, **10 - 13 March 2008**. Contact 303-337-0513, fax: 303-337-1001, email [info@gita.org](mailto:info@gita.org), <http://www.gita.org/events/annual/31/index.asp>

European Geosciences Union (EGU), General Assembly 2008, Vienna, Austria, **13 - 18 April 2008**. <http://meetings.copernicus.org/egu2008/>. Note session IS22 - HS2.1/NP1.05 on Climate, Water and Health (co-organised by HS & NP), Convener: George Christakos, [http://www.cosis.net/members/meetings/programme/view.php?m\\_id=49&p\\_id=306](http://www.cosis.net/members/meetings/programme/view.php?m_id=49&p_id=306)

AAPG Annual Meeting, San Antonio, Texas, **20-23 April 2008**. AAPG Convention Department, PO BOX 979 Tulsa, OK 74119 phone 918-560-2660 Fax: 918-560-2684 Email: [rreeder@aapg.org](mailto:rreeder@aapg.org) Web: <http://www.aapg.org/sanantonio>

EAGE Stressing Out Shales Workshop - Compacting and Stressing Out Shales: from Geological to Production Timescales, Berlin, Germany, **28 - 29 April 2008**. <http://www.eage.org/events/index.php?evp=1265&ActiveMenu=2>

NARRATIVE MATTERS 2008. University of Toronto, Toronto, Ontario, Canada, **7 - 10 May 2008**. email: [tbowen@utm.utoronto.ca](mailto:tbowen@utm.utoronto.ca), <http://www.narrativematters.com/>

International Conference on INTERDISCIPLINARY MATHEMATICAL AND STATISTICAL Techniques, IMST 2008 / FIM XVI, Memphis, Tennessee, **16 - 18 May 2008**. Sat Gupta Phone: 336-256-1126 Email: [sngupta@uncg.edu](mailto:sngupta@uncg.edu); [www.mscl.memphis.edu/IMST2008-FIMXVI/](http://www.mscl.memphis.edu/IMST2008-FIMXVI/)

49th Annual Logging Symposium of the SPWLA, Edinburgh, Scotland, **25-28 May 2008**. Society of Petrophysicists and Well Log Analysts. Dr Steve Cuddy, Helix RDS, Westhill, Aberdeen, AB32 6JL, Scotland, Phone: +44 (0) 1224 741 400; Email: [scuddy@helixesg.com](mailto:scuddy@helixesg.com); Web: <http://www.spwla2008.com>

CODAWORK'08, the 3rd Compositional Data Analysis Workshop, Girona, Spain, **27-30 May 2008**. Pepus Daunis-i-Estadella, e-mail: [codawork08@ima.udg.edu](mailto:codawork08@ima.udg.edu), Fax: +34-972-41-87-92, <http://ima.udg.edu/Activitats/CoDaWork08/>

International Workshop on Recent Advances in TIME SERIES ANALYSIS, Protaras, Cyprus, **8 - 11 June 2008**. Rainer von Sachs, Email: [rvs@uclouvain.be](mailto:rvs@uclouvain.be), [www.ucy.ac.cy/~rats2008/](http://www.ucy.ac.cy/~rats2008/)

70th EAGE Conference & Exhibition incorporating SPE EUROPEC 2008, Rome, Italy, **9 - 12 June 2008**. <http://www.eage.org/events/index.php?eventid=57&Opendivs=s2>

8th Scientific Conference SGEM 2008 "Modern Management of Mine Producing, Geology and Environmental Protection", Albena Complex, Bulgaria, **16-20 June 2008**. Ministry of Environment and Water, Bulgaria. Valentina Nikolova, 14, "Kliment Ohridsky" Blvd. 1797 Sofia, BULGARIA, FAX: +359 2 817 2477; EMail: [sgem@sgem.org](mailto:sgem@sgem.org); Web: <http://www.sgem.org>

7th World Congress in PROBABILITY AND STATISTICS, Singapore, **14 - 19 July 2008**. Irene Tan, Fax: (65) 68723919, Email: [wc2008\\_general@nus.edu.sg](mailto:wc2008_general@nus.edu.sg), [www.ims.nus.edu.sg/Programs/wc2008/index.htm](http://www.ims.nus.edu.sg/Programs/wc2008/index.htm)

2008 JOINT STATISTICAL MEETINGS, Denver, Colorado, **3-7 August 2008**. Elaine Powell Phone: (888) 231-3473 Fax: 703-684-8069 Email: [jsm@amstat.org](mailto:jsm@amstat.org), [www.amstat.org/meetings/](http://www.amstat.org/meetings/)

ICG 33rd International Geological Congress, Oslo, Norway, **5-14 August 2008**. Congress Conference AS, Thomas Heftyesgt. 2, P O Box 2694 Solli, No 0204 Oslo, Phone: +47-2256 1930, Fax: +47-2256 0541, [www.33igc.org](http://www.33igc.org). Includes IAMG sponsored sessions and IAMG General Assembly.

GeoMod2008, Villa La Pietra, Florence, Italy, **22-24 Sep 2008**. Consiglio Nazionale Ricerche; Università di Firenze; Vrije Universiteit Amsterdam; International Year Planet Earth; International Lithosphere Program. Giacomo Corti, Via G. La Pira, 4, Phone: +39 055 2757528; Email: [giacomo.corti@unifi.it](mailto:giacomo.corti@unifi.it); Web: <http://www.geomod2008.org>

GEO2008 - Resources and Risks in the Earth System (International Conference and Annual Meeting of DGG and GV), Aachen, Germany, **29 September - 2 October 2008**. Ralf Littke, Institute of Petroleum and Coal, RWTH Aachen, Lochnerstrasse 4-20, 52056 Aachen, GERMANY, Phone: +49/241/80-95757, Fax: +49/241/80-95152, E-mail: [info@geo2008.de](mailto:info@geo2008.de), Web site: <http://www.geo2008.de>

Geological Society of America (GSA), Houston, Texas, **5-9 October 2008**. Celebrating the International Year of Planet Earth, Joint Meeting of GSA, American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM. Hosted by the Houston Geological Society. <http://www.acsmmeetings.org/2008/>

SEG International Exposition, 78th Annual Meeting, Las Vegas, Nevada, USA, **09 - 14 November 2008**. <http://meeting.seg.org/index.shtml>

Eighth International Geostatistics Congress - GEOSTATS 2008, Santiago, Chile, **1-5 December 2008**. Department of Mining Engineering, University of Chile. Amada Plaza, Paseo Bulnes 197. Piso 6, Phone: (56-2) 652 1521 FAX: (56-2) 652 1570, EMail: [info@geostats2008.com](mailto:info@geostats2008.com), Web: <http://www.geostats2008.com>

American Geophysical Union (AGU Fall Meeting), San Francisco, California, USA. E. Terry, AGU Meetings Department, 2000 Florida Avenue, NW, Washington, DC 20009 USA, **15-19 December 2008**. Phone: +1 202 777 7335; Fax: +1 202 328 0566; E-mail: [meetinginfo@agu.org](mailto:meetinginfo@agu.org); Website: <http://www.agu.org/meetings>

AAPG Annual Convention and Exhibition, The Colorado Convention Center, Denver, Colorado, USA, **7-10 June 2009**. American Association of Petroleum Geologists. Randa Reeder Briggs, P.O. Box 979, Tulsa, OK 74101, Phone: 918-560-2660, FAX: 918-560-2684, EMail: [rreeder@aapg.org](mailto:rreeder@aapg.org)

71st EAGE Conference & Exhibition, Amsterdam, The Netherlands, **08 - 11 June 2009**. [www.eage.org/events/](http://www.eage.org/events/)


2009 JOINT STATISTICAL MEETINGS, Washington, DC, USA, **02 - 06 August 2009**. Elaine Powell, Phone: 703-684-1221, Fax: 703-684-8069, Email: [elaine@amstat.org](mailto:elaine@amstat.org), [www.amstat.org/meetings/](http://www.amstat.org/meetings/)

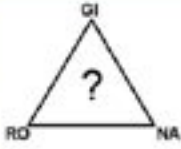
IAMG2009, International Association for Mathematical Geology Annual Conference, Stanford University, California, **16-21 August 2009**. Jef Caers, chairman.

INTERNATIONAL STATISTICAL INSTITUTE 57th Biennial Session in Durban, South Africa, **16 - 22 August 2009**. Shabani Mehta Phone: +31-70-3375737, Fax: +31-70-3860025, Email: [isi@cbs.nl](mailto:isi@cbs.nl), [www.cbs.nl/isi/](http://www.cbs.nl/isi/)



**3rd Compositional Data Analysis Workshop**  
**CoDaWork'08**  
Girona 27-30 May 2008










The CoDaWork'08 Workshop on Compositional Data Analysis is intended as a forum for discussion of research issues related to the statistical treatment and modelling of compositional data, the interpretation of models for compositional data and applications involving compositional data.

The primary goal of the workshop is to identify important potential lines of future research and gain insight as to how they might be tackled. With this goal in mind, we intend to bring together specialist researchers, postgraduate students, data analysts as well as those with a general interest in the field, prepared to summarize and share crucial contributions and recent developments and to participate as members of a brainstorming think tank.

<http://ima.udg.edu/Activitats/CoDaWork08/>





# INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY YEAR 2008 MEMBERSHIP APPLICATION

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# ANNOUNCEMENTS



<http://cosmo.mcgill.ca/>

## Scholarships for Graduate Studies in

### Geostatistics/Stochastic Simulation or Stochastic Optimization

Motivated graduate students are sought for PhD and MSc/MEng studies in the above areas, to work under the research programs of the COSMO – Stochastic Mine Planning Laboratory. COSMO is funded by global mining companies, including AngloGold Ashanti, Barrick Gold, BHP Billiton, CVRD, CVRD-Inco, De Beers, and Newmont.

**Research projects** are largely integrated to combine new stochastic simulation methods and stochastic operations research approaches. Major effort is placed on the development of new 'high-order' spatial mathematical models of geological uncertainty, suitable for modelling complex non-linear, non-Gaussian geological processes and deposits. Stochastic optimization formulations are developed to solve production scheduling problems under uncertain supply. A key component of graduate work is the testing of new methods developed at mine sites world wide, thus providing exposure to operations and interaction of new methods with reality.

**The ideal candidate** should have a degree in mining or geological engineering or mathematics or spatial statistics or closely related fields, and have good analytical skills; good programming skills are an asset.

COSMO Lab offers a high-tech working environment, is part of the oldest mining engineering program of Canada, interacts with other Departments at McGill and Professors in other universities in Montreal, Canada, the USA, Australia, South Africa and South America.

In 2007, McGill University offers a research intensive environment and attracts international students from about 140 countries. In 2007, McGill ranked as the first University in Canada, first public University in North America and overall 12<sup>th</sup> in the world (*Times Higher-QS World University Rankings*).

**Scholarships/research-assistantships** are offered to highly qualified candidates at the maximum NSERC level: \$20,000/year for PhD students and \$17,000/year for MSc/MEng. A generous top-up of \$10,000/year is available for candidates holding NSERC scholarships.

**For further information, please contact:**

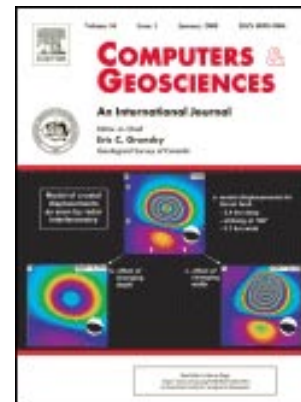
Dr. Roussos Dimitrakopoulos  
McGill University  
Dept of Mining and Materials Eng.  
3450 University Street  
Montreal, Quebec H3A 2A7  
Canada

Tel: (514) 398-4986  
Fax: (514) 398-7099  
[roussos.dimitrakopoulos@mcgill.ca](mailto:roussos.dimitrakopoulos@mcgill.ca)  
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## Computers & Geosciences is looking for a new cover graphic

Computers & Geosciences has been using the same cover graphic since 2001. It's time for a change. IAMG members are invited to submit a cover graphic which depicts a geoscience subject appropriate for Computers & Geosciences. The winning entry will receive a one year free subscription to Computers & Geosciences.

This includes graphics that cover novel computer methods in the geosciences, such as spatial analysis, geomathematics, modelling, simulation, statistical and artificial intelligence methods, e-geoscience, geoinformatics, geomatics, geocomputation, image analysis, remote sensing, and geographical information science. The term Geoscience is used in a broad sense to refer to the physical Earth sciences, including geology, geophysics, geochemistry, oceanography, environmental science, atmosphere and planetary science, hydrology, and physical geography.



Graphics should be submitted in jpeg format (for evaluation only) and be less than 1 Mb in size. **Deadline for Submission: 29-February-2008** The images will be judged by a panel of Associate Editors and members of the Editorial Board some time in the early part of 2008.

Please submit your graphics to: Eric Grunsky Editor-in-Chief Computers & Geosciences  
email: [egrunsky@iamg.org](mailto:egrunsky@iamg.org)

Please place the following title in the Subject Line of the email: **Graphics Submission for Computers & Geosciences Cover**

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This valuable domain name is for sale, and is offered exclusively to IAMG members. Bids are invited, of \$US 500 or above, and the domain will be sold to whomever has submitted the highest bid by midnight (UK time) on 31st January 2008.

Half of any sales proceeds in excess of \$500 will be donated to IAMG general funds.

Please submit bids by email to  
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[Please note that within the European Union including the UK the bid price does not include any value-added tax which might be payable. No tax is payable upon bids from elsewhere].