IAMG Newsletter

No. 60 June 2000

Official Newsletter of the International Association for Mathematical Geology

Contents

CALL FOR PROPOSAL TO ORGANIZE IAMG2003 CONFERENCE

The Association is now receiving proposals to organize the eighth IAMG conference during the summer or fall of 2003.

The deadline to submit proposals is February 15, 2001. Individuals interested in organizing IAMG2003 should follow the instructions "Guidelines to Prepare IAMG Conferences" available at the web site <www.iamg.org>. Bids should be sent to the President.

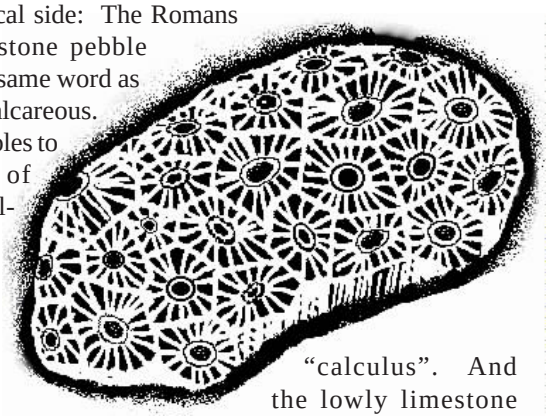
The Association does not have a conference in years in multiples of four. Instead the Association organizes a symposium on mathematical geology in conjunction with the International Geological Congress. Hence there will not be an IAMG conference in 2004. After IAMG2003, the earliest opportunity to organize an IAMG conference will be in 2005.

Election Alert!

The election of the 2000-2004 IAMG Council by the voting members is being held now. Ballots were mailed approximately May 1 and should have been received by all dues paying members. In addition to the Council, voting is being conducted on two proposed amendments to the IAMG By-Laws. Please return the ballots to Pres. Ricardo Olea by July 1, 2000. Refer to Newsletter 59 for details about the offices and the candidates.

From the Editor

What's in a pebble? My daughter wanted to give her dad a geological present, bless her. She picked up some Petoskey stones from Michigan and sent them to me. These lovely small pebbles come from the upper Devonian limestones of the upper peninsula and contain nicely preserved colonial corals of the species *Hexagonaria percarinata*. The corals are practically invisible when the stone is dry, but spring to life when the stone is wet or polished, and holding them in your hand like "worry beads" brings out their beauty. A perfect present for a geologist! After some reflection it occurred to me that a Petoskey stone is also a nice metaphor for "mathematical geology"! How so? Well, the geology is obvious — these pebbles contain a lot of geological history. Like most geological objects they hold a story: from the coral reefs of the upper Devonian sea through burial and uplift to being shaped by the forces of water. Now, to the mathematical side: The Romans called a limestone pebble 'calculus' — same word as in calcite or calcareous. They used pebbles to count and, of course, to "calculate". Hence in today's highschool and college the subject of "calculus". And here we are: the lowly limestone pebble as the basis for math, and with its geological background, a metaphor for mathematical geology.



Looking at the stone itself reveals some additional symbolism. The somewhat irregular, but nicely rounded shape represents the all encompassing though often imperfect science of geology. The hexagonal infrastructure with the very fine radial septa intersecting the concentric rings of the corallite openings pictures the geometric structure and mathematical laws pervading many geological objects and processes.

On another matter: After working in Jülich for the last 13 years I am moving back to the US. The Kansas Geological Survey has graciously offered me a place for a year in Lawrence. So, starting this fall, please send all your correspondence to the new address overleaf.

Harald S. Poelchau

International Association for Mathematical Geology

Officers

President: Ricardo A. Olea, Kansas Geological Survey, 1930 Constant Avenue, Campus West, Lawrence, KS 66047-2598, USA, E-mail: olea@kgs.ukans.edu

Vice President: Carol A. Gotway Crawford, National Center for Environmental Health, Centers for Disease Control and Prevention, MS E70, 1600 Clifton Rd. NE, Atlanta, GA 30333, USA, phone: (404) 639-2504, Fax: (404) 639-2575, E-mail: cdg7@cdc.gov

Secretary General: Thomas A. Jones, Exxon Production Research Co., P. O. Box 2189, Houston, TX 77252-2189, USA, phone: 713-431-6546; Fax: 713-431-6336, E-mail: tom.a.jones@exxon.sprint.com

Treasurer: Daniel M. Tetzlaff, Baker Hughes, P. O. Box 820050, Houston, TX 77282-0050, USA, Phone: (713)-625-5395, Fax: (713)-625-5311, E-mail: dan.tetzlaff@bakeratlas.com

Editors

Computers & Geosciences: Graeme F. Bonham-Carter
Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada, Phone: (613) 996-3387, fax: (613) 996-3726, E-mail: bonham-carter@gsc.emr.ca

Mathematical Geology (and IAMG Past President) Michael Ed. Hohn
West Virginia Geological Survey, P. O. Box 879, Morgantown, WV 26507-0879, USA, E-mail: hohn@geosrv.wvnet.edu

Natural Resources Research: Daniel F. Merriam
Kansas Geological Survey,1930 Constant Avenue, University of Kansas, Lawrence, KS 66047-2598, USA
E-mail: dmerriam@kgs.ukans.edu

IAMG Monograph Series Jo Anne DeGraffenreid
Kansas Geological Survey,1930 Constant Avenue, University of Kansas, Lawrence, KS 66047-2598, E-mail: MsDeG@kgs.ukans.edu

IAMG Newsletter: Harald S. Poelchau
Kansas Geological Survey, 1930 Constant Avenue, Lawrence, KS 66047-2598, USA, E-mail: hpoelchau@iamg.org

Councilors

Olivier Dubrule, Elf Exploration Production, Avenue Larribau, 64000 Pau, FRANCE, Phone: 33 (0)559836728, Fax: +33 (0)559835743, E-mail: olivier.dubrule@elf-p.fr

Cedric Griffiths, CSIRO Mathematics and Information Sciences, EA Cornish Building, Waite Rd., Urrbrae, South Australia, 6014, AUSTRALIA, Phone: +618 8303 8787 Fax: +618 8303 8763,E-mail: cedric.griffiths@dpr.csiro.au

Stephen Henley, Resources Computing International, 185 Starkholmes Rd,Matlock,Derbyshire DE4 5JA, UK, Ph.+44 1629 581454, Fax +44 1629 581471, e-mail: steve@SiliconDale.co.uk

Ute C. Herzfeld, Universität Trier, FB VI, Geographie/Geowissenschaften, Geomathematik, D-54286 Trier, GERMANY, Phone: +49 651 201 4611, Fax: +49 651 201 381, E-mail: uch@denali.uni-trier.de

Danie G. Krige, P. O. Box 121, 1716 Florida Hills, SOUTH AFRICA, Phone: +27 11 475 4479, Fax: +27 11 475 4926, E-mail: omricon@iafrica.com

Tetsuya Shoji, Dept. of Environmental Studies, School of Engineering, The University of Tokyo, Tokyo 113-8656, JAPAN, ph. +81-3-5841-7018, fax +81-3-5841-7080, e-mail: shoji@geosys.t.u-tokyo.ac.jp

Special IGC Councilor:

Hernani A. F. Chaves, Av. Pasteur, 404, URCA - Rio de Janeiro - RJ - BRASIL, CEP22290-240, Fax: (055-21) 295-8094, e-mail: hernani@31igc.org

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Webmaster: Eric Grunsky, Alberta Geological Survey, 4999 - 98th Ave., Edmonton AB T6B 2X3, CANADA Tel: 780 422 2454, email: egrunsky@iamg.org

Committee Chairs

WG Quantitative Methods in Environmental Geology: Andrea G. Fabbri
Geological Survey, ITC, Hengelosestraat 99, P.O. Box 6, 7500 AA Enschede, The Netherlands, ph.: +31-53-487-4282, fax.: +31-53-487-4336, e-mail: fabbri@itc.nl, Internet: http://www.itc.nl

Awards Committee: Vera Pawlowsky Glahn
Universidad Politécnica de Catalunya - Depto. de Matemática Aplicada III - ETSI de Caminos, Canales y Puertos, UPC - Campus Nord (C2), Jordi Girona Salgado 1-3, E-08034 Barcelona, Spain, phone: +34-93 401 6917, fax: +34-93 401 1825, e-mail: vera.pawlowsky@upc.es

Education Committee: John C. Tipper
Geologisches Institut, Albertstr.23-B, D-79104 Freiburg i.Br., Germany, phone: +49 761 203 6476, fax: +49 761 203 6483, e-mail: john@perm.geologie.uni-freiburg.de

Membership Committee: Jan Harff
Institut für Ostseeforschung Warnemünde, Seestr. 15, 18119 Rostock, Germany, phone: +49 381 5197 350, fax: +49 381 5197 352, e-mail: jan.harff@io-warnemuende.de

Publications Committee: Frederik P. Agterberg
Geological Survey of Canada, 601 Booth St., Ottawa, Ontario, Canada K1A 0E8, phone: +1 613 996-2374, fax: +1 613 996-3726, e-mail: agterberg@gsc.emr.ca

PRESIDENT'S FORUM

GETTING TO KNOW IAMG

"Any serious attempt to state 'what our business is' must start with the customer, his realities, his situation, his behavior, his expectations, and his values."

P. F. Drucker

- Should we have a session on artificial intelligence at an upcoming IAMG conference?

- Should IAMG stop sending the Newsletter by conventional postal mail?

- Why do members discontinue their IAMG membership?

These are just a few questions that when asked, one receives vague answers or no answers at all. Hence, when I, as one of the approximately 50,000 members of the Society of Petroleum Engineers (SPE), received a questionnaire last fall requesting my assessment of SPE—which I provided—I realized that we needed to do something similar in the IAMG. By January of this year, the Council approved the idea and appointed the following members to a special Opinion Survey Commission:

Graeme Bonham-Carter
Eric Grunsky
Thomas A. Jones
Vera Pawlowsky-Glahn
and myself as chairman.

The modal IAMG member is a 45-year old university professor ... active in the application of geostatistics and GIS to petroleum geology and environmental problems

Graeme and Vera were appointed in their capacities as presidential candidates, Tom as serving Secretary General, and Eric to prepare an on-line version of the questionnaire through the Internet. I was primarily responsible for general coordination and tabulation of results. Commission members, with the enthusiastic collaboration of some Council members and candidates to the 2000-04 Council, rapidly adapted and expanded the original SPE questionnaire from 38 to 68 questions. The survey was completed in four months at a total direct cost to the Association of US$888.96 for printing and mailing.

The questionnaire was mailed to all members since 1997—a total of 715 individuals—of whom only 435 had renewed their membership by March when the questionnaires were dropped in the mail. I received 138 answers, 101 of them by conventional mail and 37 through the Internet. The Commission was pleased with the turnout, which is 35% higher than the responses to the previous mailing to all members done two years ago to amend the Constitution. 135 of the responses were from members (31%), an impressive proportion for a long questionnaire at a time when opinion surveys have fallen in worldwide disrepute.

Still, any survey that is short of being a census covering 100% of a population may be suspected of being biased. The few checks that are possible in this instance tend to indicate that the survey statistics match the complete but short information about the members in the hands of Treasurer Tetzlaff. For example:

- 33% of the respondents have been members for three years or less, while 32% of the 1999 members were members for three years or less;

- 73% of the respondents have been members for eight years or less, while 62% of the 1999 members were members for eight years or less;

- 58% of the respondents subscribe to one journal, while 63% of the 1999 members subscribed to one journal.

As you can see, this scant evidence tends to support the hypothesis that responses to the Opinion Survey represent a good sample of the entire membership, thus giving general validity to the findings summarized in detail beginning on page 4. What follows are my personal remarks on the findings.

...our publications are of paramount importance to our members ... not all of them are satisfied with what goes into our journals

OUR MEMBERS (Section H, questions 50-68) Although Section H was last in the questionnaire, let me start by characterizing our membership, because knowing our membership explains to a large extent several of the answers in the other sections.

The modal member is a 45-year old university professor who is active in the application of geostatistics and GIS to petroleum geology and environmental problems (q. 65-68). He joined the Association only two years ago attracted by the possibility of receiving our journals at the very affordable rates available to members (q. 52, 51, 29-30).

Members in industry came in a surprising high third place, ahead of those doing consulting or being self-employed.

That the IAMG is an utterly heterogeneous organization shows through the answers to the questions related to professional affiliations and areas of interest (q. 56 & 66). The list of professional organizations that IAMG members belong to has almost as many entries as the number of respondents. AAPG—to which IAMG is an affiliated member—is at the top of the list with 30 responses, implying that about one in four IAMG members belongs to that organization also. This is in agreement with the fact that petroleum geology is of interest to one out of three respondents.

Respondents marked all 26 areas of interest offered in the questionnaire, with 3.5% of the selections being under "Others." The interest is not uniform. Geostatistics takes the lion's share among all areas of interest with about 2/3 of the respondents having some interest in the subject. Fittingly, the distribution for the degree of interest in geostatistics is neither Gaussian nor symmetric!

Geochemistry, geography and GIS, and geophysics scored higher than other areas to which IAMG has devoted more attention in the past, such as hydrology, mining, and marine geology. Artificial intelligence (AI) came in a dismal 20th place, providing a well-documented answer to the opening question in this column.

On the demographic side, the age of the respondents ranges from 28 to 74 years old, with an average of 50, which is 10 years more than the average age of the 20 members at the foundation of the Association in Prague, August 22, 1968. The present age distribution and answers to question 54 denote that aging is among the reasons why we are permanently losing members, a factor that is frequently ignored.

According to question 52, individuals are primarily attracted to the IAMG through its journals. Surprisingly, activities tried in the past should not be considered effective based on the responses to question 50. For example, having an IAMG booth at non-IAMG conferences ranked first among the seven suggested alternatives in question 48, but only one respondent said that he learned about IAMG through an IAMG booth. The papers in our journals were by far the most common reason given for learning about and for joining the organization (q. 50, 51). The best way to promote IAMG seems to be the reference to papers in our journals by authors publishing in non-IAMG journals.

The Opinion Survey tends to suggest that the typical pattern for an IAMG member starts with her or his marvel at discovering some very interesting articles in our journals, which results in applying for membership in order to begin receiving the journal regularly. Over the years, members may retire, shift interests, or find fewer papers of interest in IAMG journals than originally expected. Eventually the member discontinues membership. Unfortunately not very many former members responded to the questionnaire to provide a more solid answer to the third question at the beginning of this column.

Answers to questions 57 and 58 reveal that IAMG members are mostly on their own when it comes to join IAMG. They receive little encouragement from employers either to join or to participate in our activities. This fact may have some impact on our high turnover.

Involvement in IAMG activities shows a healthy situation, with members declaring that they have been more active in IAMG activities recently, outnumbering those who say that they are slowing down.

Remarkably, only one respondent declared no electronic mail connection, a new reality started in the 1990s that has changed the way to communicate worldwide. Surprisingly, a majority, however, prefer to read a paper copy of the Newsletter, which answers the second opening question.

GENERAL ASSESSMENT (Section A & F, q. 1-5; 35-37) The respondents are in general satisfied with the way things are in the Association.

However, the ratings may be too generous for the entire survey. This possibility is suggested, for example, by the responses to Question 5 that was included mainly as a control question. The Association does not really make a planned effort to provide broad professional information beyond mathematical geology (career, social, environmental, etc.). For that reason, it was expected that responses to question 5 should be in the lower end of the scale, not in the middle as it turned out in practice.

GOVERNANCE AND LEADERSHIP (Section E, questions 32-34) Respondents are mildly satisfied with the Council, although the quality of representation, management, and communication offers room for improvement, particularly in terms of informing the broad membership about the important decisions.

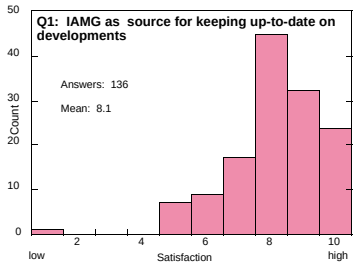
CONFERENCES (Sections C, questions 19-26) According to information provided by the Treasurer, IAMG has members in 38 countries this year, an average of about 7 members per country other than the United States. This geographical diversity adds to the problems presented by heterogeneity of professional interest when it comes to organizing IAMG conferences.

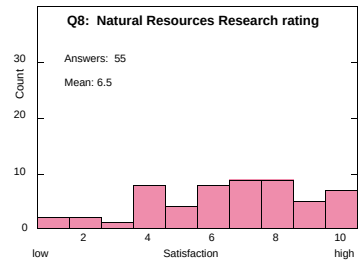
IAMG has had 5 conferences on three continents (q. 19). The sentiment to have more conferences closer to home is understandable (q. 26), but there are only so many annual conferences that can be organized each year. Besides, IAMG has little control over where to have conferences as the Council is restricted to selecting sites from what historically has been a short list of places where members are willing to organize them. Such lists have never had more than 2 sites.

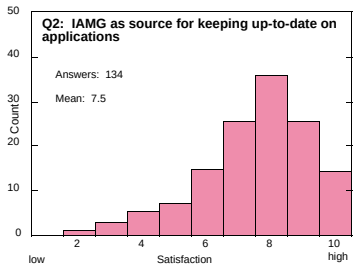
On the technical side, respondents were moderately satisfied with what they have obtained from the IAMG conferences. The main complaints are similar to those related to publications: failure to address the interest of every single member (q. 26).

continued on p. 6

Membership Opinion Survey Results







Q9. REASONS FOR POOR RATING OF JOURNALS

A. GENERAL COMMENTS

Few articles address applied problems at unsophisticated levels	4
Articles do not match papers at the conferences	1
Very little in any of the IAMG journals is of relevance	1
Modern papers are seldom cited outside the IAMG journals	1

B. COMMENTS ABOUT COMPUTERS & GEOSCIENCES

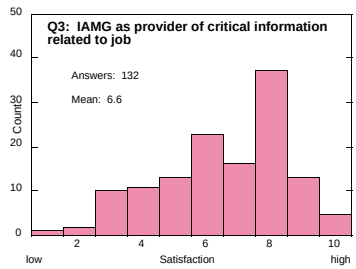
Too many papers that look more as user's guide of codes than real specific development starting from basic scientific methods	1
Quality of papers is generally low; review process need to be more rigorous	1
Too much emphasis on tool development and not enough serious applications	1

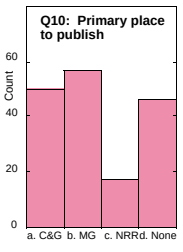
C. COMMENTS ABOUT MATHEMATICAL GEOLOGY

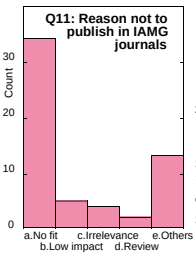
The journal has reach an academic level good for statisticians and mathematicians that is unapproachable and not practical to many geologists	9
Articles are not relevant to my research	2
Too heavy on geostatistics	2
Decadence relative to papers in the 1970s and '80s	2

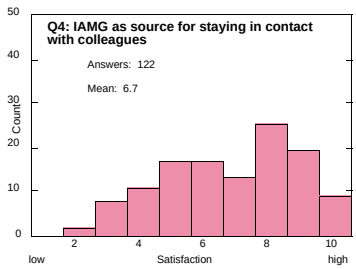
D. COMMENTS ABOUT NAT. RESOURCES RESEARCH

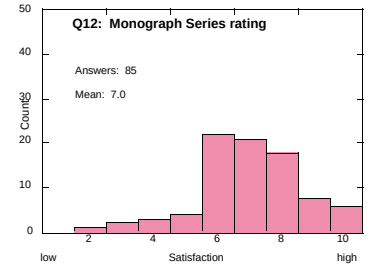
Articles do not cover my research interest	8
A journal without a clear niche	3
Papers are of poor quality; NRR has almost no reviewing standards	3
Articles are not referenced in the journals that I read	2
Too similar to other more prestigious journals, such as AAPG and SPE	1
NRR needs more cutting edge papers	1
NRR should not exist	2

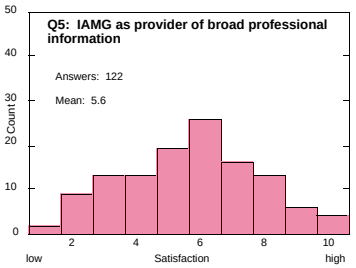






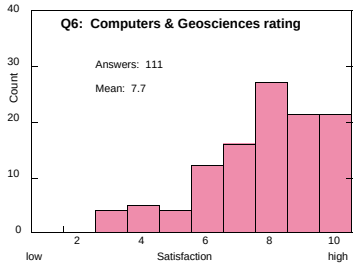


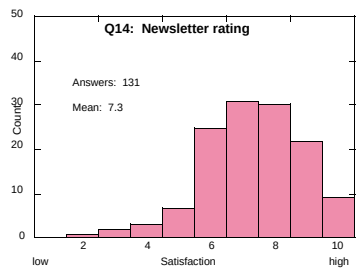


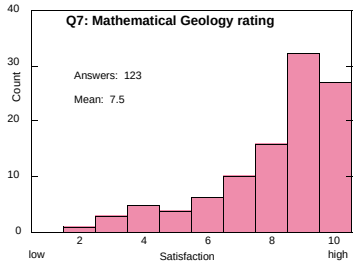


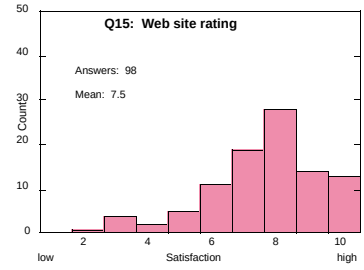
Q13. Reasons for poor rating of Monograph Series

	No. of answers
The topics are not up-to-date enough	2
The monographs do not address critical issues	3
The series does not have enough titles	2
Series is largely academic with no relevance to industry	2
The series covers topics that are not relevant to my work	1
Most volumes are too specialized	1







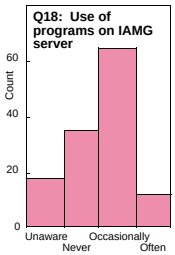


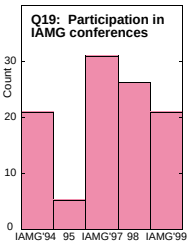
Q16. REASONS FOR POOR RATING OF NEWSLETTER

The newsletter looks much like an insider publication, without much professional news or semi-technical information	6
Information comes too late	1
It is too infrequent	1
I miss the lively articles of the 1970's	1

Q17. REASONS FOR POOR RATING OF INTERNET SITE

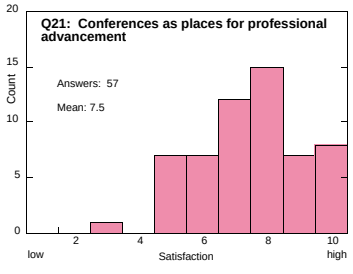
There is not enough useful information	4
The site is static; there is no interactivity	1

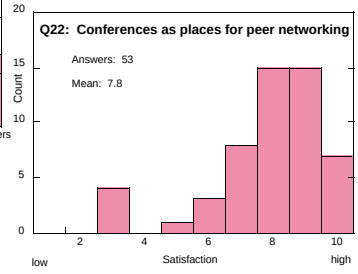


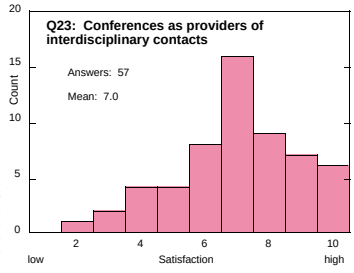


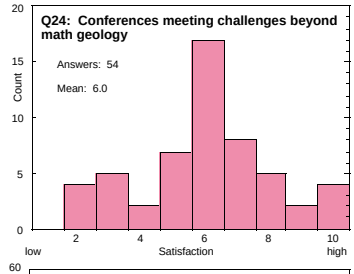
Q20. WHY DID YOU REGISTER AS A NON-MEMBER AT AN IAMG CONFERENCE DESPITE THE EXTRA COST AND LACK OF MEMBERSHIP BENEFITS?

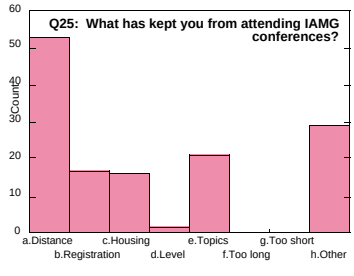
1. As a Canadian government employee, conference registration fees are paid for me, but membership fees are not.
2. The conference was my first contact with IAMG. At the time I was not sure I wanted to be a member





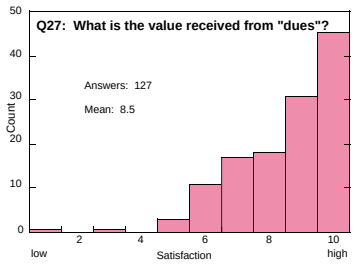






Q26. WHAT WOULD INDUCE YOU TO ATTEND FUTURE IAMG CONFERENCES?

	no. of answers
Location closer to home	22
Having more time and money at my disposal	17
Better focus on a single subject of interest to me	9
Relevance of conference sessions	6
Good technical program	5
Join conference with a larger organization with some common interest, such as SEPM or EAGE	3
Minimizing the total cost to attend	3
Broadly applicable short courses	2
Coming out of retirement	2
Greater participation from non-academic and non-government attendees	2
Get more geology and geophysics into the program	2
Holding the conference at the right time of the year	2
Publication of proceedings in a journal	1
Being sure that I have produced an excellent paper worthy of presentation at an IAMG conference	1
Better planning on my part	1
Large attendance	1
Bigger names in geostatistics	1
Meeting an audience interested on my research	1
More emphasis in new techniques	1
To improve my skills in the English language	1
Location in places not vacation-like	1



Q28. REASONS FOR LOW RATING OF VALUE OF JOINING IAMG

Dues are reasonable but utility of publications is low	3

Q29: Does employer pay IAMG "dues"?

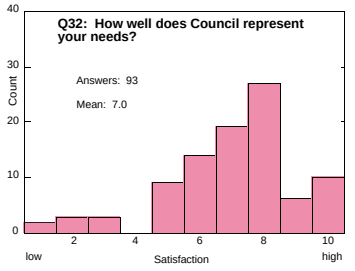
a. Yes 21 b. No 110

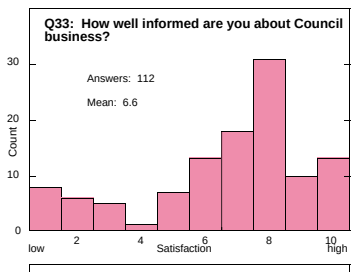
Q30: Is personal payment of "dues" a hardship?

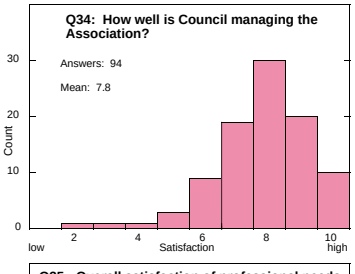
a. Yes 5 b. No 106

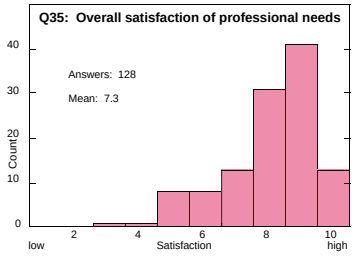
Q31. REASONS WHY PERSONAL PAYMENT OF "DUES" IS A HARDSHIP

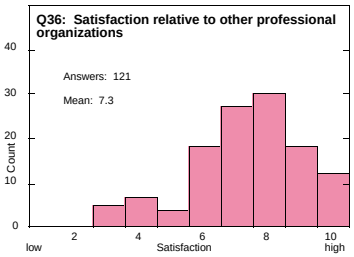
Exchange rate for dollars too high	3





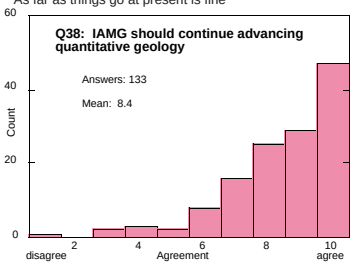


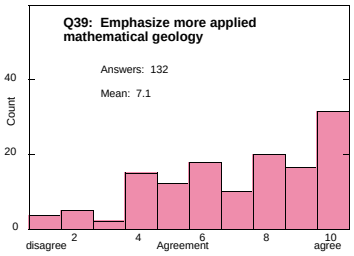


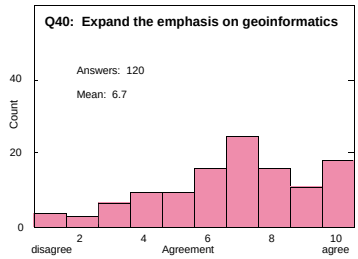


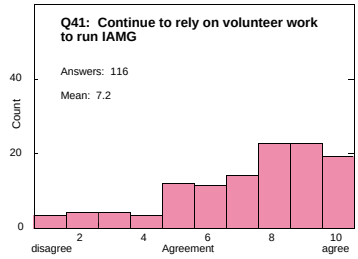
Q37. **HOW CAN IAMG IMPROVE YOUR OVERALL MEMBERSHIP EXPERIENCE?**

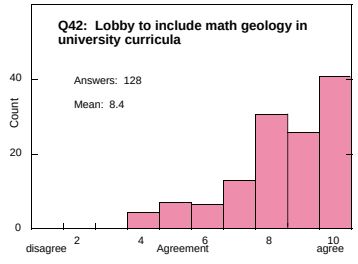
	no. of answers
Become more relevant to practical geological problems and less a forum for abstract mathematical schemes	7
Increase the standards and recognition for the journals	5
Have conferences at more centrally located sites	5
Organization of more workshops and short courses	4
Have a theory journal, such as the theory and methods issued by the Royal Stat. Soc., and a practical application journal, such as Technometrics	2
Work toward a broader recognition within industry	2
Interact more with other societies	2
I mprove education function	1
Have more source code available in C&G	
Attract more young members	1
Allow newcomers to have a more active participation in the IAMG activities	1
Wider and more areal representation from the world	1
Provide an attractive platform beyond the classical disciplines	1
Publish better review articles	1
Invite big names to write more in Newsletter on breaking ideas	1
Better promote the Association	1
Better promote geoinformatics	1
Improve access to past papers published by the Association	1
Reduced preference for technological research	1
Have greater transparency in the process for the election of officers.There is a need to correct (unfair?) perception that the IAMG is run by a clique	1
Increase information in Newsletter about employment opportunities	1
Change name	1
As far as things go at present is fine	2

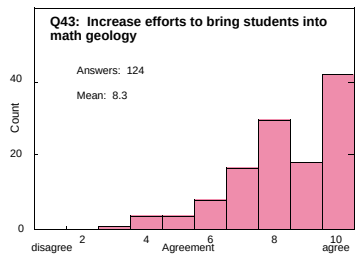


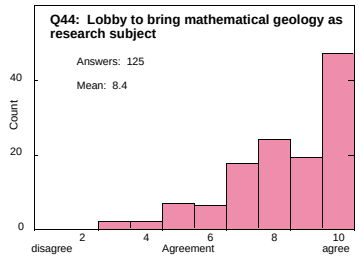


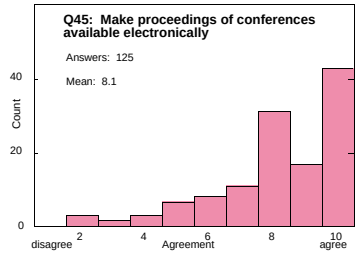


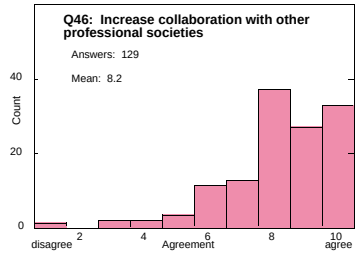


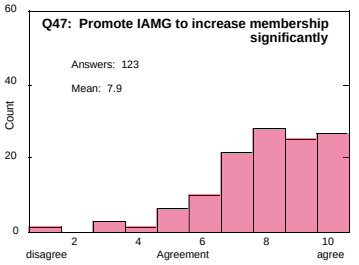




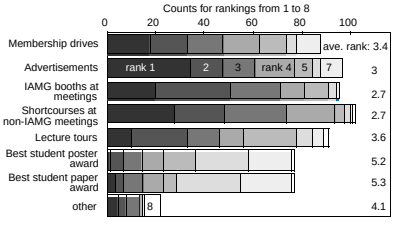








Q48: Activities for increasing membership



Q48h. OTHER ACTIVITIES
- Increase access to web pages
- Focus on the development of the Mathematical Geology journal
- People will join if you are relevant to them
- Specialized topical monographs
- Association with other professional organizations
- Sponsor special sessions at non-IAMG conferences
- We should increase our relevance to practical applications
- Require membership to receive priority in publishing papers in Association journals
- Make the articles in "Mathematical Geology" accessible also to non-mathematicians
- Support meetings and networking of young scientists

Q49. **WHAT IS THE MOST IMPORTANT THING IAMG NEEDS TO DO TO HELP MEMBERS MEET THE CHALLENGES THEY WILL FACE IN THE NEXT 5 TO 10 YEARS?**

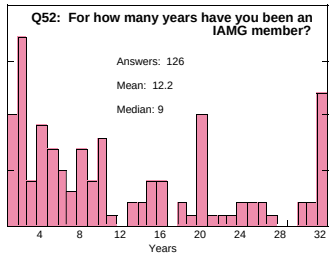
	No.of answers
Focus on the improvement of the IAMG journals	13
Give higher priority to demonstrate and teach relevance of quantitative techniques to solve practical geol. problems	12
Support the advancement of emerging fields to keep members at the leading edge	9
Work with universities to promote the teaching of mathematical geology	7
Educate employers as to why mathematical geologists are useful and essential	6
Work with industry to expand the impact of applied mathematical geology	5
Make efforts to increase communication among mathematical geologists for better exchange of ideas	5
Give more priority to the advancement of geoinformatics	5
Give higher priorities to the advancement of fields other than geostatistics	2
Restore a better balance between geology and mathematics for all IAMG activities	2
Support and organize regional workshop tours	4
Increase IAMG membership significantly to become a more visible and respected organization	4
Keep organizing conferences	3
Publish more invited papers by noted geomathematicians	2
Work on the reduction of the library subscription rate for Computers & Geosciences	2
Enhance electronic dissemination of information	2
Facilitate software exchange	1
Have a permanent address for the Association	1
Start a series of lecture tours	1
Give research grants to college Faculty members	1
Give more priority to the advancement of GIS	1
Work with governmental agencies to expand the impact of applied mathematical geology	1
Publish more monographs	1
More support for local activities	1
Keep on trucking	5

Q50. **HOW DID YOU FIRST LEARN ABOUT IAMG?**

	No.of answers
Reading the journals	44
Colleague	21
Advisor	15
Founding member	8
From Dan Merriam	6
From John Harbaugh	2
Kansas Geological Survey publications	6
Interest in mathematical geology	2
Attending an IAMG conference	4
Attending International Geological Congress	3
APCOM meeting	1
Reference to an IAMG paper in a non-IAMG publication	4
IAMG Booth	1
Web site	1
An award	1
Computer Oriented Geological Society	1
From non-IAMG Newsletter	1
Advertisement in journal	1

Q51. **WHAT BROUGHT YOU TO IAMG?**

	No. of answers
The papers in the journals of the IAMG	40
Interest in mathematical geology	26
Relevance to career & desire to keep up with technology	24
Software	9
Opportunity to interact with other mathematical geologists	7
Conferences	6
Excellent value of membership	5
Recommendations from other members	4
Benefits in general	2
Geostatistics	3
An award	1
Help to promote mathematical geology	1



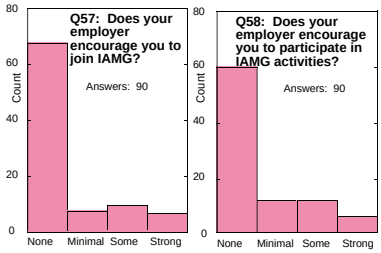
Q53: Are you an IAMG member in 2000?
Yes 131 No 3

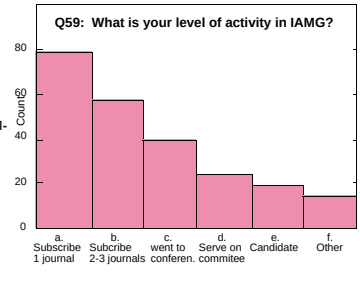
Q54. **What made you discontinue your IAMG membership?**

	No. of answers
1. Retirement	2
2. Irrelevance of papers in Mathematical Geology	1

Q56. **WHAT PROFESSIONAL/SCIENTIFIC ORGANIZATIONS DO YOU BELONG TO?**

	No.of answers
1. AAG	1
2. AASP	1
3. ACS	1
4. Air and Waste Management Association	1
5. American Assoc. for the Advancement of Science (AAAS)	5
6. American Association of Petroleum Geologists (AAPG)	30
7. American Geophysical Union (AGU)	23
8. American Institute of Professional Geologists	1
9. American Mathematical Society	1
10. American Metereological Society	1
11. American Rock Mechanics Association	1
12. American Society for Quality	1
13. Amer. Soc. for Photogrammetry &Remote Sensing (ASPRS)	4
14. American Statistical Association (ASA)	14
15. American Water Resources Association	1
16. AMS	2
17. Asociación Interamericana de Ingeniería Sanitaria	1
18. Association of Exploration Geochemists	5
19. Association of Exploration Geophysicists (AEG)	1
20. Assoc. of Professional Engineers and Geoscientists - Alberta	1
21. Australasian Institute of Mining and Metallurgy (AusIMM)	3
22. Australian Institute of Geoscientists (AIG)	1
23. Brazilian Society of Geophysics	1
24. Brazilian Society of Petroleum Geologists	1
25. British Geotechnical Society	1
26. British Society of Soil Science	1
27. Canadian Institute of Mining and Metallurgy	2
28. Canadian Society of Petroleum Geologists	1
29. Canadian Society of Remote Sensing	1
30. Chemometrics Society	1
31. CIM	1
32. CNR - Institute for Space Astrophysics	1
33. Committee for Quantitative Stratigraphy	1
34. CSEG	1
35. Dallas Geological Society	1
36. Deutsche Geologische Gesellschaft	3
37. DGMK-Germany	1
38. Dutch Geological Earth Sciences Foundation	1
39. Dutch Hydrological Association	1
40. EEGS-ES	1
41. EGS	2
42. Engineer Association in Quebec	1
43. Environmetrics	1
44. European Association of Exploration Geophysicists (EAEG)	2
45. European Geophysical Society	2
46. European Mathematical Society	1
47. Fachsektion Hydrologie	1
48. Geochemical Society	1
49. Geological Society of America (GSA)	17
50. Geological Society of India	1
51. Geological Society of South Africa	1
52. Geologische Vereinigung (GV)	4
53. Geostatistical Association of Australia (GAA)	2
54. Geological Association of Canada	2
55. Geospatial Information and Technology Association	1
56. IAGE	1
57. IAGLR	1
58. IASCAV	1
59. IEEE	2
60. Institute of British Geographers	1
61. Institute of Mathematical Statistics	2
62. Institute of Mining and Metallurgy (UK)	1
63. Institute of Navigation	1
64. IMM	1
65. ISSS	1
66. International Association for Hydrological Sciences (IAHS)	3
67. International Association for Landscape Ecology	1
68. International Association of Hydrology	1
69. International Association of Hydrogeologists (IAH)	2
70. International Association of Sedimentologists	1
71. International Association of Statistical Computing	1
72. International Biometrics Association	1
73. International Environmetrics Society	1
74. International Statistical Institute (ISI)	3
75. International Stereology Society	1
76. Italian National Research Council	1
77. Japanese Society of Computing Statistics	1
78. Japan Society of Geoinformatics	1
79. JGR	1
80. Korea Society of Geospatial Information	1
81. Korean Statistical Association	1
82. Latin American Association of Organic Chemistry	1
83. MEMS	1
84. MICA	1
85. MSA	1
86. Mineralogical Association of Canada	1
87. National Geographical Society	1
88. National Research Council	1
89. NGF	1
90. National Ground Water Association (NGWA)	2
91. North American Council on Geostatistics (NACOG)	1
92. NSS	1
93. NYAS	1
94. Ontario Geoscientists Association	1
95. Ordem dos Engenheiros de Portugal	1
96. Palaeontological Society	2
97. Professional Engineers and Geoscientists - Alberta	1
98. Professional Engineers and Geoscientists - British Columbia	2
99. Professional Engineers of Ontario	1
100. Professional Geoscientists of Ontario	1
101. QRA	1
102. RAS	1
103. Real Sociedad Mathemática Española	1
104. Remote Sensing & Photogrammetric Assoc. of Australia	1
105. Remote Sensing Society (RSS)	4
106. Royal Dutch Academy of Sciences	1
107. Royal Dutch Geology-Mining Association	2
108. Royal Geographical Society	1
109. Royal Society of South Australia	1
110. Royal Statistical Society	1
111. SGE	1
112. Sigma Xi	4
113. Simulation Society of Australia and New Zealand	1
114. Sociedad Geológica de España	1
115. Societa Geologica Italiana (SGI)	1
116. Society for Industrial and Applied Mathematics (SIAM)	4
117. Society for Sedimentology (SEPM)	8
118. Society of Economic Geologists	2
119. Society of Exploration Geophysicists (SEG)	7
120. Society of Explorationists in Emirates	1
121. Society of Mining Engineers (SME)	8
122. Society of Petroleum Engineers (SPE)	14
123. Society of Professional Well Log Analysts (SPWLA)	3
124. Society of Sedimentary Petrologists and Mineralogists	1
125. Soil science Society of Germany	1
126. South African Institute of Mining Engineers	1
127. SSSA	2
128. The Geological Society (of London)	8
139. The Geologists' Association	1
130. TSOP	1
131. Western Interior Paleontological Society	1





Q60: **How is your level of activity in IAMG recently?**
a. Increasing 35 b. Decreasing 18 c. The same 83

Q61. **IF YOUR LEVEL OF ACTIVITY IS DECREASING, PLEASE TELL US WHY?**

	No. of answers
There is too much mathematcs and not enough geology in IAMG	4
Different professional demands	4
I served important positions in the past	2
Retirement	2
I have been attracted by other profess'l societies	1
It was too burdensome to cont inue being r egional editor for C&G	1

text continued from p. 3

PUBLICATIONS (Sections B & D, questions 6-18; 27-31) Considering the importance given to IAMG publications throughout the questionnaire, ratings and comments in sections B and D deserve the maximum attention.

The monograph series needs more advertising. The series rates well among those who have read one or more of the volumes, but a high 39% of the respondents have not noticed its existence (q.12). The problem must be even more serious outside the IAMG. Release of the sixth monograph should be used by the Association and the publisher as an opportunity for better promotion.

While there is disagreement about the quality and content of the journals in particular, there is a consensus that subscriptions to our journals are generously priced. In fact, at an 8.5 rating, question 27 about value received from "dues" exhibits the highest degree of satisfaction. Subscription to journals is the main direct benefit received in exchange for the annual payment members make to the IAMG Treasurer. Considering that such payments go in their entirety to the publishing houses for journal subscriptions, they can hardly be called dues. If in addition members attend IAMG conferences, with the discount received in registration fees, subscription to a single journal ends up being free.

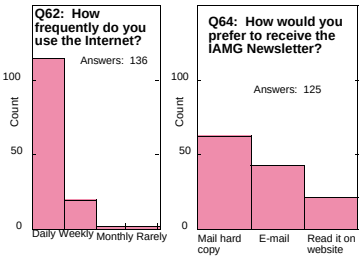
One of the most surprising results from the survey is that about one in three respondents mentioned that none of our journals is a good place to publish their work, primarily because the respondents are only marginally in mathematical geology (q. 10, 11). Most likely they will be the first members to quit if subscription price to the journals goes up significantly.

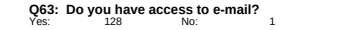
The anomaly concerning the unwillingness of some of members to submit papers to IAMG journals tends to be compensated by the well-known fact that other individuals do like to publish in our journals, but do not care to become members. Last year, for example, according to my cursory research, from the 77 papers published in "Computers & Geosciences," 74% had no IAMG members in the list of authors. In addition, 51% of the 47 papers in "Mathematical Geology" and 36% of the 22 papers in "Natural Resources Research" had no IAMG members in the author list. Perhaps too much of the work by members is going into the proceedings of the IAMG conferences.

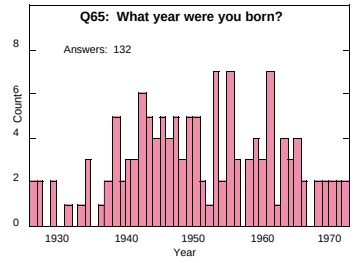
Criticism of the journals in general is a consequence of the heterogeneity of IAMG membership. Given the diversity of interests represented in the membership, it is impossible for any journal to consistently satisfy all members all the time in terms of content.

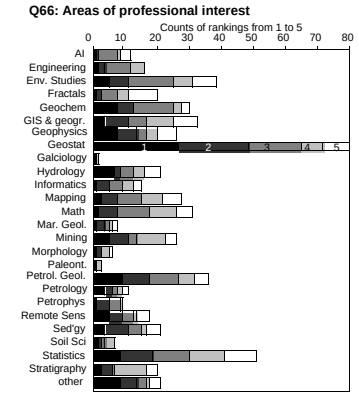
Increasingly the Association seems to be honoring its name and turning into a professional organization "for mathematical geology" instead of being a group "of mathematical geologists." With 75% of the respondents interested in either geostatistics or statistics (q. 66), there is a minority who feel that articles in the journals, particularly in "Mathematical Geology," have gone too far in terms of the mathematics, offering too little in terms of geology (q. 9, 37, 49).

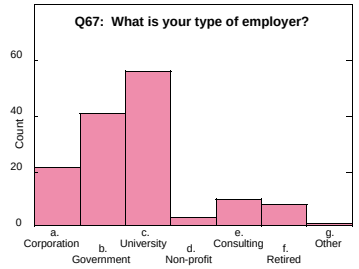
A different but related point of contention is the sentiment that IAMG needs to focus more on demonstrating that mathematical geology is a convenient tool for solving practical problems (q. 9, 37, 49). Currently 88% of the members are either doing research or teaching, which is probably close to the historical dominance that scientists and academicians have always had in IAMG. Such a constituency explains why the IAMG publications have always been a forum for publishing results from research in mathematical geology to fight the battle of "publish or perish." While continuing to serve such a legitimate need, IAMG should devote more effort to advancing the technological side of mathematical geology, which is an integral part of the objectives of the organization stated in the Statutes (see the web site: www.iamg.org).

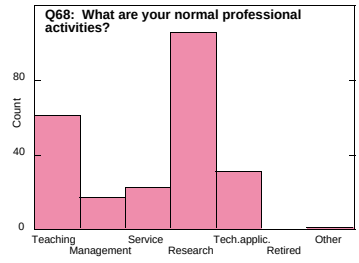












The Opinion Survey Commission:

Graeme Bonham-Carter, Eric Grunsky, Thomas A. Jones, Ricardo A. Olea, Chairman, Vera Pawlowsky-Glahn

with special thanks for the active collaboration of Margaret Armstrong, Geoff Bohling, Tim Coburn, Steve Hanely, Mike Hohn, Harald Poelchau and Dan Tetzlaff

If we have learned anything from the Opinion Survey, it is that our publications are of paramount importance to our members (q. 52) and that not all of them are satisfied with what goes into our journals (q.9, 37, 49). After doing the first part of the exercise recommended by Peter Drucker—to learn about the realities, expectations and needs of our members—IAMG needs to move into the harder phase: to adjust to the demands.

While we have the luxury of publishing three journals, one possibility that I have favored in the past has been to have the more theoretical and mathematically oriented papers going into "Mathematical Geology" and the more applied and geologically oriented papers going into "Natural Resources Research," thus minimizing the exposure of readers to papers that they do not want to read. This has proved harder to sell and implement than to preach. Simultaneously, IAMG should make an effort to attract members and authors willing to publish more about the good results that can be obtained from the application of quantitative tools that have been developed over the past 30 years. In many cases those tools remain underutilized and poorly understood.

There is a second form of subscription to our journals other than membership subscription—library subscriptions. Library subscriptions are significantly more expensive than member subscriptions and are the livelihood both for the publishers and for IAMG through royalties. The reader should know that royalties from "Computers & Geosciences" went down 11% last year. Although the information does not come from the Opinion Survey, I mention it here to emphasize the importance of working for an increase in the acceptance of our journals, even beyond our membership.

FUTURE DIRECTIONS (Sections G, questions 38-49) Although the survey indicates that nothing compares in priority to the need to improve the acceptance of our journals, the Survey included 10 propositions intended to test the degree of support for possible future priorities and expansions in activities (q. 38-47). All of them easily passed the minimum 5.0 rating that one may interpret as the threshold for approval. A significant increase of membership (q. 47) most likely should precede implementation of most of the other propositions.

The highest degree of approval went to increasing lobbying to bring mathematical geology into the curriculum of universities and to bring mathematical geology into the list of research subjects of national and international evaluation committees (q. 42, 44), hardly a surprise for a constituency dominated by professors and scientists.

The lowest degree of approval went to the promotion of geoinformatics (q. 39), which is at the very least curious considering that simultaneously respondents rated "Computers & Geosciences" as the IAMG's best journal (q. 6-8), computers are replacing paper to communicate scientific results, and that hardly any quantitative method applied to geology can be employed without the assistance of computers.

I invite you to examine the complete tabulation of results, make your own conclusion, and send your opinions to the Editor of the Newsletter to start a healthy exchange of opinions with the best of intentions to work for an IAMG even more efficient and more responsive to your own needs.

Ricardo Olea

Free Internet Access to Landolt-Börnstein Database!

Landolt-Börnstein, the largest collection of scientific data (250 volumes) in physics, chemistry, bio-, geo- und astrophysics and astronomy, is now available online! Until the end of this year you may register and use the electronic database for free on the internet (http://link.springer.de/series/lb). One drawback: only the volumes before and including 1990 are available. The full electronic edition will be completed in 2001, but by then the user will be charged for full text downloads, although Table of Contents and abstracts will still be free. It is planned to extend and complete by then the areas "applied physics", "chemistry" und "materials science" in order to make the data collection more relevant for engineers.

Association Business

A Tribute to Peter Henn

The life of every successful journal requires cooperation between the sponsor and the publisher. Components of this team include the science editor(s), the publisher, the contributors, and the subscribers (readers). Computers & Geosciences is no exception to this formula. Founded in 1975 by the International Association of Mathematical Geology, the sponsoring organization, and the publisher, Pergamon Press/Elsevier, have cooperated during the past 25 years to establish and maintain a first-class journal. Started as a quarterly, it now has ten issues per year.

The international journal was established for the rapid publication of computer programs in widely used languages and their applications. It has now expanded that mission to include all aspects of computer-oriented quantitative applications in the earth sciences. The journal was an outgrowth of the earlier Kansas Geological Survey Computer Contributions (and the later Geosystems Geocom Programs) and was established to fill a need in the earth sciences.

During the life of C&G there have been two principal editors-in-chief and only two coordinating editors from the publisher's side of the joint venture. Dan Merriam and Graeme Bonham-Carter have guided the journal since it's inception from the scientific side (John Cubitt was co-editor-in-chief for 4 years, and Jeff OLeary had a brief spell at the helm), and Harry Holt and Peter Henn have represented the publishers interest.

Peter Henn, Senior Publishing Editor, has for 24 years—almost the whole life of the journal—done yeoman's duty as the publisher's representative responsible for C&G. His tenure has gone through both editors-in-chief as well as a transformation from one publisher to another. Not even Peter can remember how many production editors and personnel have changed in his time, but through it all he has consistently and effectively supported the journal and its objectives. Part of the success of the journal then is the result of Peter's guidance and help from the publisher's perspective as part of the team.

Peter's background in the earth sciences and in the publishing business served the Association and the journal well. His steady and firm hand in dealing with both the scientific editors and production editors gave stability to the operation. This commitment to quality was obvious to everyone working with the journal and indirectly to those reading the journal.

Peter recently has been reassigned to other duties within the Elsevier organization and thus passes his mantle to another. His efforts have been much appreciated, especially by those who have worked closely with him, and his presence will be sorely missed. We wish him all the best in his new capacity and want him to know that his efforts on behalf of C&G and the IAMG were and are much appreciated. Good luck Peter!

Dan Merriam, Kansas Geological Survey
Graeme Bonham-Carter, Geological Survey of Canada

Certificate of Appreciation for Peter Henn

Peter Henn, Senior Publishing Editor first with Pergamon and now with Elsevier, who was coordinating the publication of Computers & Geosciences from the publisher's side, has been reassigned to new duties after being publisher's representative responsible for C&G for 24 years. Elsevier's new representative responsible for C&G is Karel Nederveen in Amsterdam. Peter Henn was also responsible on the publishing side for the book series Computers Methods in the Geosciences, edited by Dan Merriam, which currently has 16 titles. Peter Henn is not an IAMG member. To acknowledge Peter Henn's efforts IAMG has decided to present him with a Certificate of Appreciation and the following citation:

"To Peter Henn, in recognition of his exceptional work on the publishing side for building the journal Computers & Geosciences to its position as a first class international journal."

IAMG Now Has On-line Membership Directory!

The IAMG has established an on-line membership directory that is accessible by IAMG members only. This directory contains names, addresses, telephone/fax numbers and email addresses of each IAMG member. This directory will enable IAMG members to conveniently obtain contact information about other members. The Membership Directory can be searched by Last Name, Organization or Country. Access to the directory is restricted to members only by an account number and password. IAMG members with valid email addresses have received an email notice advising them of their account number and password. Please note that in June all passwords had to be changed because of a security problem. New password are being sent to members with valid email addresses. IAMG members with no email address will receive a letter via the post which will inform them of their account number and password. If you haven't received a new password by August, please contact...

Eric Grunsky, IAMG Website Manager

Support for Arezzo2000

Council approved, by a vote of 8 to 3, a grant in the amount of US$2,000 to support the Second International School of Fluids Geochemistry to be held in Arezzo, Italy, September 5-8, 2000, organized by the Italian Geochemical Society.

IAMG2002 in Berlin!

Council selected Berlin as the site for the IAMG2002 conference by a vote of 6-5 over the Greek group's proposal of Santorini. Most Council members were comfortable with both proposals and regret having had to select one site over the other.

The conference will take place in **Berlin, September 15-20, 2002**. Berlin is the capital of Germany--a city which has always been in flux and is at present undergoing radical change. There exists a New Berlin with innovative architecture of the 21st century, with luxury shopping streets and old quarters with restored historical buildings bordering inviting parks. Berlin is going to become again a bridge between East Europe and West Europe. Three airports, Tegel, Schönefeld and Tempelhof serve both domestic and international flights. There are also good connections by train to the main European cities. Further details about characteristics of the city, such as lodging, climate, and cultural activities, will be offered in the different circulars.

Tentative technical program:

It is planned to start Sunday, Sept. 15th at 18:00 with an icebreaking party followed by three days of plenary and parallel technical sessions. Plenary sessions will include lectures by invited speakers on the state-of-the-art geo-informatics and mathematical 3D/4D-modeling and visualization. The other technical sessions will concentrate on other subjects to be decided upon by the scientific committee. During the last two days of the conference there will be tutorial workshops and short courses. At the end of the conference a geological excursion to Rüdersdorf will be offered, which is the biggest (6 x 1 km^2) Muschelkalk-quarry in northern Germany and a famous geological site. Possible other destinations are Potsdam, which is in the UNESCO list of protected cities, and other interesting sights of the environments of Berlin.

Conference chair: **Wolfdietrich Skala**
Conference vice chair: **Heinz Burger**,
both of FU Berlin, Dept. of Geosciences

Tentative International Scientific Committee:
Graeme Bonham-Carter, Geol. Survey of Canada, Ottawa, Canada
Ricardo Olea, Kansas Geol. Survey, USA
Andrew Frank, Technische Univ. Wien, Austria
Vera Pawlowsky, UPC Barcelona, Spain
Heinz Schweppe, Freie Universität Berlin, Germany
Nina Gorelikova, Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry, Russian Academy of Science, Russia

Local Organizing Committee:
Sybill De Vito-Egerland, FU Berlin, Congress Management
Ulf Bayer, FU Berlin; Dept. of Geoscience / GFZ Potsdam,
Hannes Thiergärtner, FU Berlin, Dept. of Geoscience
Rene Prissang, FU Berlin, Dept. of Geoscience
Reinhard Schoele, FU Berlin, Dept. of Geoscience
Agnes Schumann, FU Berlin, Dept. of Geoscience
Kerstin Munier, FU Berlin, Dept. of Geoscience
Christian Zick, FU Berlin, Dept. Mathematics and Computer Science
Jörg Bechlars, FU Berlin ZE Computing Center
Maria Theresia Schafmeister, Univ. of Greifswald, Inst. for Geology
Helmut Schaeben, Univ. of Freiberg (Chair of the Geoinformatics Section of the German Geol. Soc.)

Conference Secretariat:
Claudia Gummersbach
IAMG 2002 - Conference Secretariat
FU Berlin, Department of Geology, Geophysics and Geoinformatics
Malteserstr. 74 - 100
D 12249 Berlin (Germany)
Phone: +49 30 7792 570, Fax: +49 30 7752 075
e-mail: iamg2002@zedat.fu-berlin.de

IAMG Awards

The Awards Committee (H. Burger, J. Cubitt, J. C. Davis, J. Harbaugh, V. Pawlowsky-Glahn) has completed selection of award recipients for 2000:

2000 Krumbein Medal: Richard J. Howarth

2000 Griffiths Award: Lawrence J. Drew

Richard J. Howarth was elected from a field of 11 candidates, while Lawrence J. Drew had four competitors. Following the By-Laws and Guidelines, evaluation of 100% of all nominees has been based on resumes and accompanying statements distributed electronically among all members of the Committee. This time, some additional work was necessary to bring the information into a format readable by all committee members, not only because many nominees had already been in the previous round, but also because our Association has made significant progress in that respect.

According to the Guidelines, Committee members assigned numerical scores from 0 to 10 to all candidates in relevant categories that vary from award to award, rather than voting for a single candidate, which would be equivalent to a binary system in which one nominee gets 1 point and all other 0 points. Such scores allow for more precise evaluations, making ties more unlikely, which is important in a committee of 5 when, as in the past, some members may be away from office at the time of deliberations.

As agreed by the awards committee, nominees who did not make it either in this round or in the previous one will not be considered for the next selection. Therefore, in two years fresh nominations for the Krumbein Medal and the Griffiths Awards will be urgently needed.

Coming up are now the 2001 Felix Chayes Prize and Andrei B. Vistelius Award. Please look at the call for nominations (see Newsletter back page). If you do not nominate your favorite geomathematicians, they will never receive the recognition they deserve.

I would like to thank the following persons for their active support to the Awards Committee during the 2000 selection process, either as members and/or submitters of nominations and/or writers of laudations: **Frits Agterberg, Heinz Burger, Hernani A. Fernandes Chaves, John Cubitt, John C. Davis, Roussos Dimitrakopoulos, John Harbaugh, Richard McCammon, Ricardo A. Olea, John H. Schuenemeyer, Tetsuya Shoji**. It makes the work much more pleasant, although my wish to have a list that does not fit into the Newsletter has not yet been realized!

Presentation of all the awards is scheduled to take place during the upcoming IGC conference. The year 2000 recipients of the Krumbein Medal and the Griffiths Awards are the first ones in a long time scheduled to receive these awards in their year of nomination. This system, started last year with the 1999 Felix Chayes Prize and Andrei B. Vistelius Award, makes it definitely clear that indeed the Association is presenting only two awards per year.

The Awards Committee, in collaboration with Webmaster Grunsky, organizers of IAMG Conferences, Editors Bonham-Carter and Hohn, and Newsletter editor Harald S. Poelchau continues its task of properly honoring the recipients. The recipients are listed in the Association's website in the Internet, Krumbein medalist citations will be published in Mathematical Geology and laudatios for the Griffiths Award are published in Computers & Geosciences.

Vera Pawlowsky-Glahn
Chair, Awards Committee

2000 John Cedric Griffiths Teaching Award to LAWRENCE J. DREW

Lawrence J. Drew was born in Astoria, New York, and grew up in Lempster, New Hampshire. He attended Towle High School in Newport, eight miles north of Lempster. He went on to the University of New Hampshire where he graduated with a BSc Degree in Geology and Chemistry. Following graduation, he was accepted in the Graduate School at Pennsylvania State University in what was then the Department of Mineralogy and Petrology. Interestingly enough, his acceptance letter was signed by one John C. Griffiths. More interesting was his first encounter with "Griff" who always insisted on being addressed that way. Griff asked Larry what he would like to be. Larry said, "A mineral deposit geochemist." Griff then took a piece of paper on which he drew a Venn diagram, pointed to it, and said that mathematical geology was the future, not that other "stuff." Larry's future was sealed.

Larry took his MSc and PhD in Mineralogy and Statistics at Penn State and completed his graduate work in 1966. He worked for a time at the research laboratory at the Cities Service Oil Company in Tulsa, Oklahoma, but his primary goal was to become a research geologist at the United States Geological Survey. The long-awaited call came on June 8, 1972, and he joined a new branch at the USGS that was being formed to study assessment methods to estimate the quantity and quality of the nation's undiscovered mineral and mineral-fuel resources. It has been in this capacity that Larry has expended his efforts and carried out his research for the past 28 years and which has, interestingly enough, earned him recognition as much as a teacher as that of a research scientist.

Larry has published over 100 scientific papers, written two books, has conducted workshops throughout the world, and been invited on numerous occasions to be the keynote speaker at national and international meetings and conferences. To better understand his role as a teacher, one needs to revisit an interview of Griff by Larry in one his Directions columns that he wrote for the journal *Nonrenewable Resources*. In the interview, Larry asks Griff to remember a homily that Griff used to instruct students on how to gauge what kind of contribution they have made with a piece of research they had completed and presented at a professional meeting. "You mean my admonition about watching your audience for feedback," Griff responds. Larry says, "I think you used to call it 'wisdom'." Griff answers, "Watch your audience, and, if they clap politely, you have done nothing. If they hoot and howl, you are headed in the right direction. If they crucify you, you have found the truth." Larry has made effective use of Griff's homily in his writings and in his appearances before an audience.

The qualities of Larry as a teacher are found in his writings. In his first book, "Oil and Gas Forecasting", Larry leads the reader through the process of forecasting oil and gas discovery rates and the associated task of determining the distributional form of oil and gas field size distributions. The reader is exposed to Larry's recollections based on more than twenty years as a witness and a participant in this field. In the process, the reader becomes the student much as Larry was the student when Griff as Professor led Larry away from determinism and toward statistical empiricism.

In his second book, "Undiscovered Petroleum and Mineral Resources," Larry describes the confrontations played out in the marketplace of ideas where political-economic-environmental forces vie for influence over the use of land, most often public land. In the foreword, Professor DeVerle Harris, himself the 1993 William C. Krumbein Medalist, points out that the reader is given a "close up and personal" view of the development of methodology and the strident controversies that arose over specific assessments and assessment methodology. As Harris points out, "what makes this book unique is that it is also a candid 'inside' view of the personalities and thoughts of those involved in the development and implementation of petroleum- and mineral-resource assessment." Larry instills in the reader a view of the evolution of ideas and methods as a real-life drama involving individuals, as well as technical issues. What better way for a student to become educated about a robust, highly quantified, active field of research.

The greatest measure of Larry Drew as teacher devolves from the columns that he wrote for the journal *Nonrenewable Resources*. Over the course of seven years, Larry contributed 25 columns on topics that touched on aspects of nonrenewable resources. Whether it was the "Plight of the Quarryman," "The 1997 Climate Conference in Kyoto," "The Dematerialization of Society," "Land Ethics," "Irresistible Holes in the Ground," "Why We Do Resource Assessment," "Who Has the Best Ideas?", or even, as mentioned earlier, "An Interview with John Cedric Griffiths," Larry brought to the reader fresh insight into the issues and the challenges that confront our society. It is in keeping with the tradition that Griff instilled in his students which was to question authority, to challenge existing dogma, and to apply new, geomathematical approaches to current geological problems.

Larry, it is with pleasure that we salute you as the 2000 Griffiths Award winner; we urge you to continue your efforts to educate the future generation of mathematical geologists in the same spirit as did your predecessors.

Richard B. McCammon
US Geological Survey, retired
Sequim, Washington

2000 William Christian Krumbein Medal to RICHARD J. HOWARTH

Richard Howarth was born on 27 June 1941 and grew up amidst the effects of the WWII on London, England. He attended Highgate School in north London and performed creditably at both 'O' Level (age 15/16 examinations in a broad sweep of subjects) and 'A' Level (age 17/18 examinations, specialising in maths and science).

Richard had, however, from an early age regularly visited Lyme Regis on England's south coast with friends of the family. This area of Dorset is famous for it's Jurassic sediments and ammonite fossil hunting, and it drew out of Richard a lifetime's interest in geology. This was despite the pressures exerted by the family to make art his specialisation and ultimate career. The presence of 2 Royal Academicians in the family cannot have helped with choosing the science route! Nevertheless, Richard showed the quiet strength of character that was to become one of his trademarks and decided to undertake a degree in geology at Bristol University in 1960.

It was during this period that Richard was first introduced to numerical geology when, studying vertebrate palaeontology, he was struck by a paper on numerical taxonomy. Little did he realise at the time how important to his career this chance discovery would be. In 1963 after graduation with a B.Sc. 2i with Honours in Geology, Richard decided to continue onto a Ph.D. and approached his Head of Department about the new world of carbonate reservoir studies as a potential thesis topic. He was, to put it bluntly, told to think again – "This is no job for a gentleman"! In fact he was 'encouraged' to look at the more 'traditional' problem of whether the Donegal Tillites or Boulder beds, as they were then known, were really of glacial origin. Into the large field area in Donegal strode Richard under the supervision of Dr. (now Professor) Bernard Leake, only to find that he had drawn the short straw with poor and limited outcrops compared to the northern part of the field region, which was being studied by another student under Professor Wally Pitcher. Undaunted Richard turned to the new area (for geologists that is) of statistics to help resolve the issues. During his Ph.D., he undertook the statistical calibration of the first XRF spectrometer to be installed in a British university geology department and began using multivariate methods for the interpretation of geochemical and other data.

As his Ph.D. was conducted under the auspices of a Shell scholarship, Richard went to work for Shell Coal (Bataafse International Petroleum Mij N.V.) in The Hague on completion of his doctorate in 1966. There he was placed on a top-secret project to use statistical tools to correlate stratigraphic sequences around the World to hydrocarbon occurrences. Although the project was highly successful and he enjoyed working for Peter Dearborn, a Swiss geologist Richard rates as one of the brightest he has ever met, social life (or should I say lack of it) in The Hague was not to his or his wife's liking. Consequently, when they were considering an offer to move within Shell to Amsterdam, it was opportune that they should be approached by Professor John Webb at Imperial College in London to join the fledgling Applied Geochemistry Research Group (AGRG) under Ian Thornton.

Richard J. Howarth, University College, London (photo by Peter J. Strachan)

Imperial then became Richard's home from 1968 to1985 initially as Post-Doctoral Research Fellow (1968-1972), then Probationary Lecturer (1972-1975), Lecturer (1975-1978) and finally Reader in Mathematical Geology (1978-1985). His principal activities during this time concerned the unique and innovative application of statistical and computing methods to mapping and interpretation of regional geochemical survey data for mineral exploration, geological and epidemiological purposes. He wrote the software that underpinned the production of regional geochemical atlases of Northern Ireland, England and Wales, Uganda, Nepal, parts of Zimbabwe, Colorado in the US and Georgia. Although these activities were rewarding from a scientific viewpoint, Richard found the Department to be highly compartmentalised and jealousy, especially of the AGRG's finances, was rife. When (now Sir) John Knill took over the running of the Department, members of the AGRG were forced to teach introductory geology courses as well as maintaining their research activities. Richard thereafter became rapidly disillusioned and started looking for alternate ways in which his talents could be employed.

He applied to British Petroleum and in 1985 was asked to join the central computing resource, acting as an internal consulting service. After one year, he was requested to work more closely with the geologists in Sunbury-on-Thames (just to the West of London) as most of them had little idea about the potential use or abuse of statistical applications in exploration or production of petroleum. He quickly made his mark with the stratigraphers in particular and eventually he was seconded and then moved permanently into the Applied Statistics Group (1988). It was during this time he met Dr John Athersuch, then an up and coming BP biostratigrapher, with whom he now works as a consultant in John's company Stratadata.

Amongst the numerous projects Richard undertook at BP were biostratigraphic data analysis, chemical stratigraphy, applying estimation techniques for regional hydrocarbon reserve calculations, petrophysical data analysis and study of uncertainty in rock property prediction, inter-laboratory comparison of petrophysical data, calibration of Sr-isotope dating methods, techniques for the univariate and multivariate laboratory quality control, human resource database studies and statistical analysis of engine test and fuel oil databases. All of these were interesting and challenging, but eventually BP decided in one of it's innumerable downsizing exercises of the time that statistics was not core to it's business and subsequently Richard agreed to accept a redundancy package when in 1993 he reached the age of 50.

This enforced change of careers has however been remarkably beneficial in that it has freed Richard to undertake and indulge in activities he had been thinking about for many year but never had the time to put into action. He now splits his time between acting as a self-employed consultant in mathematical geology and the role of Visiting Professor of Mathematical Geology at University College London. In his role as a consultant, he has conducted projects

continued on p. 16

Member News

We are sorry to report the passing of Dr. **Allan L. Gutjahr**, professor emeritus of mathematics, on Jan. 3, 2000, from lymphoma. He was 62.

Allan Gutjahr was a much-loved math professor and well-known hydrology researcher at New Mexico Tech. Gutjahr received his Ph.D. in Statistics at Rutgers in 1970, joined the New Mexico Tech faculty in 1971 and worked to establish a program in probability, statistics, and their applications. He was one of a handful of researchers who established the field of stochastic groundwater hydrology. He was chairman of the Mathematics Department for three years and served for two-and-a-half years as Vice President for Academic Affairs and for six years as Vice President for Research, stepping down in 1997.

See also
www.nmt.edu/mainpage/alumni/goldpan/obit/gutjahr.html

Harbaugh honored with educator award

John W. Harbaugh, professor of geological and environmental sciences and of petroleum engineering, was given the Distinguished Educator Award by the American Association of Petroleum Geologists at their Pacific Section meeting in Monterey on April 29. The award recognizes the distinguished and outstanding contributions to geological education and counseling of students. Harbaugh was singled out for more than 40 years of instructing undergraduates and graduates since he began teaching geology at Stanford in 1955

Ulf Nordlund has left the University of Uppsala (Sweden). He can still be reached through his old address and e-mail..

Michel David (1945-2000)

Michel David, Professor of Geostatistics at École Polytechnique, Montréal and Fellow of the Academy of Sciences, Royal Society of Canada, died on May 10, 2000 in Laval, Québec. He left behind his wife Ellen and their two children Kaitlin and Justin, as well as a remarkable legacy.

An "Ingenieur civil des mines" from the University of Nancy in 1967, Michel was trained by the founder of geostatistics Georges Matheron. Michel came to École Polytechnique in Montreal to establish the first regular courses in geostatistics for future mining engineers and geologists in the Americas. He went on to receive his MSc (1969) and PhD (1973) degrees in operations research from the University of Montreal, became an assistant professor before completing his PhD and a full professor at the Department of Mineral Engineering in his 30's.

Michel applied his work and ideas to numerous mining projects and operating mines worldwide, consulted with over 60 mining companies from Canada and the US to Chile, South Africa, Thailand, to Papua New Guinea, Australia. If humans were capable of carrying out activities on other planets, Michel would have been there to see more and learn more!

Michel will be remembered as the brilliant, passionate, enthusiastic and pragmatic teacher and mentor he was so many of us. Michel will be remembered as the curious, intuitive, adventurous, thinker beyond boundaries and the trivialities of everyday life. Michel will be remembered as the unique individual who accomplished in short period of time more than most people do in a full lifetime. Michel will be remembered as one of those who lead people to change the way they do things

Roussos Dimitrakopoulos
Michel Dagbert

Member News cont'd on p. 10

Member News cont'd from p. 9

Cedric M. Griffiths has moved. He explains:

I have started working for the CSIRO Petroleum Division. My new position at CSIRO is 'Leader - Predictive Geoscience' within the Division of Petroleum Resources. I will be continuing to develop research projects and demonstration applications in the field of forward stratigraphic modelling as applied both at basin and reservoir scales, using a variety of approaches. I will be building a team to continue the work that we started at the University of Adelaide and develop strong collaborations both within various existing CSIRO mathematics, geomodelling, mining and hydrology groups and internationally.

Dr. Cedric M. Griffiths
CSIRO Petroleum
c/o CSIRO Mathematics and Information Sciences
EA Cornish Building, Waite Rd., Urrbrae,
South Australia, 6014
Tel: +618 8303 8787Fax: +618 8303 8763

In memoriam Colin Ferguson 1945-1999

It is with sadness that we report the death of Colin Ferguson from cancer. Colin published in a wide variety of fields, including field geology, metamorphic petrology, strain analysis, rheology, statistical methods, finite element analysis and theoretical mechanics. Following an appointment as lecturer at the University of Nottingham, he was a Research Associate at the Kansas Geological Survey, Professor and Head of the Geology Department at Birkbeck College, University of London, and Professor of Environmental Science at Nottingham Trent University. Those who knew him will recall his gentle spirit but incisive mind, and his capacity for original and imaginative thought that he expressed so lucidly in his publications.

John Doveton

Cancún 2001

A note of thanks to AMPG and its President, Alfredo Guzman

As Chairperson of the Organizing Committee for **IAMG's annual conference in 2001, 'Cancún 2001'**, I wish to express our thanks and appreciation for the valued support received from the Mexican Association of Petroleum Geology (AMPG). Through the good offices of Alfredo E. Guzman, AMPG President, and funding provided by AMPG, members of the Organizing Committee in Kansas and members of the Local Committee in Mexico were able to attend the 3rd Joint International Congress of AMPG and AAPG in Boca Del Rio, Veracruz *(see related story on p. 19)*. It was an excellent opportunity to plan and promote 'Cancún 2001'. In addition to myself, other Committee members attending were **David Collins** of the Kansas Geological Survey, **José Luís de la Rosa** of the Comisión Federal Electricidad in Merida and **Moisés Dávila** of the Comisión Federal Electricidad in Veracruz. In addition to his position as President of AMPG, Alfredo E. Guzman is Executive Coordinator of Exploration Strategies for Petroleos Mexicanos (PEMEX). He is also the Honorary Chairman of 'Cancún 2001', working with the Organizing Committee toward the success of the Cancún conference since the site was selected by the IAMG Council.

In addition to the opportunity for face-to-face discussions between members of the Organizing Committee in Lawrence, Kansas, and Local Committee members in Mexico, the AMPG/AAPG conference generated a large number of fruitful contacts. Posters promoting IAMG's conference were prominently displayed, stirring considerable interest. Gerardo Basurto, Technical Assistant on Exploration Strategies for PEMEX, worked diligently with IAMG members during their stay in Boca del Rio and has joined the Local Organizing Committee. In addition to contacts within Mexico, we met many geoscientists from throughout South America, including Raul Mossman of Rio de Janeiro; President of AAPG's newly organized Latin America Region. Raul has continued to provide encouragement and useful contact information.

Planning for the conference is proceeding at a brisk pace. Site inspections have been made to determine the best possible arrangements for conference facilities in Cancún. In addition to the natural beauty of the location, numerous options have been developed to provide attendees the opportunity to see and appreciate the unique cultural history and geology of the region. Look for details regarding the official conference hotel in Cancún, excursion recommendations, and other conference related plans to be posted soon on the conference web site www.kgs.ukans.edu/Conferences/IAMG/index.html. The Organizing Committee is confident that the location, facilities, and opportunities for scientific interchange with a broadening range of international scientists will provide a worthwhile conference experience.

The Organizing Committee believes that the strong and generous support of AMPG, including an article published in the AMPG Newsletter, is largely responsible for the encouraging number of abstract submissions already received from geoscientists in Mexico. IAMG members are reminded that the **deadline for submission of abstracts for 'Cancún 2001' is January 31, 2001**.

Jorgina A. Ross, Chairperson
'Cancún 2001' Organizing Committee

IAMG Journal Report

Mathematical Geology: Best Paper Awards for 1997 &1998

Each year, the editorial board of *Mathematical Geology* selects an outstanding paper published in that journal to receive the *Best Paper Award*. In selecting a best paper, the editorial board used the following criteria: a best paper represents a significant advance by presenting a new concept or method with important applications, or a breakthrough on a long-standing problem; is well-written, clearly-illustrated, and referenced comprehensively; and is likely to be cited often in the literature for many years.

The best paper for **1997** is: **J. L. Mallet**, "Discrete Modeling for Natural Objects": vol.. 29, no.2, p. 199-219. The author is with the Institut National Polytechnique de Lorraine, École Nationale Supérieure de Géologie.

The best paper for **1998** is: **Ting Ting Yao** and **André G. Journel**, "Automatic Modeling of (Cross) Covariance Tables Using Fast Fourier Transform": vol. 30, no. 6, p. 589-615. Dr. Yao is with ExxonMobil Upstream Research Company, Houston, Texas, and Dr. Journel is Professor in the Department of Petroleum Engineering at Stanford University.

To recognize their achievement, the authors will each receive a year's membership in the IAMG with a subscription to *Mathematical Geology*. Congratulations to all three individuals.

See yo' in Rio!

The beginning of the 31st IGC is now very close. We are very excited about this meeting which will provide us all with a good opportunity to exchange information in our particular field and discuss the development of the Geological Sciences in the third millennium (http://www.31igc.org).

It is also an opportunity to attend the IAMG 2000. We will have a full two weeks program (see below) with five special symposia and 14 general symposia with ca. 300 papers presented, many by key speakers. Besides, we have the conferences by our two medallists, and the General Assembly on Friday, August 11 and after the Assembly a "dinner and drinks get together party" in an inexpensive place close to the hotels will be prepared.

Hernani A.F. Chaves
IAMG -IGC Councillor

1-1 Prospects for the Geological Time Scale in the 21st Century [IAMG/CQS/UNESCO] James Ogg (USA) - Felix Gradstein (Norway) - Paulo Milton Barbosa Landim (Brazil)
11-2 Geostatistical Evaluation of Mining Ore Bodies According to Their Geology [IAMG] Margaret Armstrong (France) - Normand Champigny (France) - Armando Remacre (Brasil)
12-4 Economic and Technical Analysis of Mining and Oil Resources [IAMG] Michael Schmidt-Thomé (Germany) - Marco Antonio G. Dias (Brazil)
24-1 Quantitative Methods in the Earth Sciences [IAMG] Daniel F. Merriam (USA) - Vera Pawlowsky-Glahn (Spain)
24-2 Appraisal of Mineral and Energy Resources [IAMG/ISME] Lawrence Drew (USA) - John M. A. Forman (Brazil)
24-3 Cyclic Sedimentation [IAMG] Frits P. Agterberg (Canada) – Walther Schwarzacher (UK)
24-4 Use and Future of Geological Data Base [IAMG/COGEOINFO] Ali Al-Mishwat (Kuwait) - José Brandle (Spain)
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NRR v. 9, no. 1 (2000)

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Multivariate statistical analysis in the assessment of hydrochemistry of the northern Korinthia Prefecture alluvial aquifer system (Peloponnese, Greece), by K. Voudoouris, A. Panagopoulos, and J. Koumantakis

Natural geological weighing lysimeters: calibration tools for satellite and ground surface gravity monitoring of subsurface water mass change?, by W.E. Bardsley and D.I. Campbell.

Modeling permeability changes caused by hydrothermal circulation, by P. Gouze and A. Coudrain-Ribstein

BOOK REVIEW

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A couple of years ago, John C. Tipper (Chair, IAMG Education Committee) wrote to Krumbein Medallists soliciting mathematical-geology review articles to be published under the aegis of IAMG in general geological journals. His request stimulated me to write "***Variability of igneous rocks and its significance***" [Proceedings of the Geologists' Association, 2000, Vol. 111, no. 1, pp. 1-15]. Unfortunately, specific reference to the Education Committee's series was not included.

In addition to the geological general public, IAMG members (who probably do not scan the PGA regularly) may find the paper useful because it reviews concept development over 40 years or so and, inter alia, deals with compositional data.

E. H. T. Whitten

In 1999, two volumes of the journal ***Mathematische Geologie*** (ISSN 1431-8016) have been issued. This journal is edited by the IAMG founding member Hannes Thiergärtner, Berlin, and it is published by the CPress Publishing House, Dresden (Germany).

Volume 3 (April 1999): *Mathematical Methods Applied to Environmental Investigations.* Editor H. Thiergärtner. 106 pages, boards. Price 48 DM. Content:

Utilization of probability weighted moments for regionalization of statistical distribution functions for floods [in German].

Univariate geostatistical evaluation of selected results of a multivariate pollutant study in the Mulde riverplains of Bitterfeld [in German].

Use of multivariate statistical methods to investigate the origin of pollutants in the Mulde riverplains of Bitterfeld [in German].

Multivariate pattern recognition analysis applied to geo-ecological areal classification in Berlin.

Integrated assessment of radiological and non-radiological risks at contaminated sites.

GEOSTAT OFFICE for environmental and pollution spatial data analysis.

Description of reaction and transport processes in the zone of aeration of mine dumps.

Waterbalance model of the zone of aeration for optimization of landfill-covers using the models AERA and BOWAHALD-3D [in German].

Volume 4 (September 1999) - *Progress in Geoinformatics.* Editor H. Thiergärtner. 138 pages, boards. Price 48 DM. Content:

Integrant effects of mathematical geology.

Iterative geological modelling [in German].

Research results of the geomodelling and their importance [in German].

Estimation of palaeontological data [in German].

Reconstruction and simulation of geological structures.

Spatial modelling in geology and its practical use.

Computer assisted 3D modelling and planning for the cement industry of El Salvador.

Geological 3D modelling of the Plattenkalk group, Western Crete [in German].

Geological 3D modelling of the volcanic island of Santorini (Thera) [in German].

Earth surface systems as complementary (evolving and responding) geosystems. Example: Baltic Sea area.

Investigations on the changing volumes of aperiodic oscillating oxygen conditions in the basins of the Baltic proper.

Computation of global water availability and water use at the scale of large drainage basins.

Hierarchical numerical classification at different decision levels applied to evaluation of industrial sites contaminated in the past [in German with extended English abstract].

Recent Books of Interest

Michalewicz, Z., University of North Carolina, Charlotte, NC, USA Fogel, D.B., La Jolla, CA, USA

How to Solve It — Modern Heuristics

1999. XI, 469 pp. 174 figs. 7 tabs., 3-540-66061-5, DM 69, Springer-Verlag Berlin/Heidelberg

This book is the only source that provides comprehensive, current, and detailed information on problem solving using modern heuristics. It covers classic methods of optimization, including dynamic programming, the simplex method, and gradient techniques, as well as recent innovations such as simulated annealing, tabu search, and evolutionary computation. Integrated into the discourse is a series of problems and puzzles to challenge the reader. The book is written in a lively, engaging style and is intended for students and practitioners alike. Anyone who reads and understands the material in the book will be armed with the most powerful problem solving tools currently known.

Schafmeister, M.-T., Universität Greifswald

Geostatistik für die hydrogeologische Praxis

1999. XVII, 172 S. 81 Abb., 17 Tab., 3-540-66180-8, DM 79, Springer-Verlag Berlin/Heidelberg

Die Autorin erläutert die Methoden der Geostatistik und deren Anwendung speziell in der hydrogeologischen bzw. umweltgeologischen Praxis. Nach der Einführung in die Theorie der ortsabhängigen Variablen und deren Bedeutung für hydrogeologische und umweltbezogene Fragestellungen wird die räumlich-statistische Datenanalyse - die Variographie - vorgestellt. Anschließend werden die Familie der geostatistischen Schätzmethoden - das Kriging - sowie Algorithmen der stochastischen Erzeugung von Parameterfeldern - die geostatistische Simulation - dargestellt. Abgerundet wird der Inhalt mit Methoden der Probenahmeoptimierung für Fragen der Boden- und Grundwasserkontamination. Alle Abschnitte des Buches werden anhand praktischer Fallstudien illustriert. Auch die Einsatzmöglichkeit leicht zugänglicher, preiswerter Programme wird beschrieben und diskutiert.

Güting, H., Fernuniversität Hagen, Germany, **Papadias, D.**, Hong Kong University of Science and Technology, China, **Lochovsky, F.**, Hong Kong University of Science and Technology, China (Eds.)

Advances in Spatial Databases

6th International Symposium, SSD'99, Hong Kong, China, July 20-23, 1999, Proceedings

1999. XI, 371 pp., 3-540-66247-2, DM 86, Springer-Verlag Berlin/Heidelberg

This book constitutes the refereed proceedings of the 6th International Symposium on Spatial Databases, SSD'99, held in Hong Kong, China in July 1999. The 17 revised full papers presented were carefully selected from 55 submissions. Also included are short papers corresponding to three invited talks and industrial applications presentations. The papers are organized in chapters on multi-resolution and scale, indexing, moving objects and spatio-temporal data, spatial mining and classification, spatial join, uncertainty and geological hypermaps, and industrial and visionary application track.

Fischer, G., University of Bremen, Germany, **Wefer, G.**, University of Bremen, Germany (Eds.)

Use of Proxies in Paleoceanography — Examples from the South Atlantic

1999. X, 735 pp. 339 figs., 18 in color, 46 tabs., 3-540-66340-1, DM 298, Springer-Verlag Berlin/Heidelberg

The book is on methods of reconstruction of past climate, climate changes, oceanography of the South Atlantic (including the Southern Ocean) and the cycling of biochemical components in the ocean. Information about past ocean conditions is provided by so-called paleoceanographic proxies (parameters with approximate unobservable environmental variables, e.g. surface water temperature). Use of proxies and their development has been a major theme of the Collaborative Research Project at the University of Bremen for almost 10 years. In this volume we summarize our results in relation to these proxy studies. Each chapter gives an overview of a specific proxy, provides particular findings obtained in the South Atlantic and ends with an outlook on future perspectives with respect to the proxy described. Therefore it is suitable for lecturers, graduate students and scientists working in the field of climate reconstruction from ocean sediments.

Hall, C.W., Arlington, VA, USA

Laws and Models — Science, Engineering, and Technology

1999. Approx. 460 pp., 0-8493-2018-6, DM 127 , Springer-Verlag Berlin/Heidelberg

This encyclopedic work compiles more than 1,200 laws and models found in science and engineering literature. Written in a clear, accessible style, each entry includes a statement of the law or model, its date, keywords, a brief biography of the people involved in its formulation, sources of information, and cross-references. The author includes models not usually found in such compilations, such as dimensionless groups, models from more recently evolved areas of engineering, and models from education and business.

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Storch, H.v., GKSS Research Center, Geesthacht, Germany, **Navarra, A.**, Bologna, Italy (Eds.)

Analysis of Climate Variability Applications of Statistical Techniques

2nd ed. 1999. XVI, 342 pp. 91 figs., 13 tabs., 3-540-66315-0, DM 139, Springer-Verlag Berlin/Heidelberg

Various problems in climate research, which require the use of advanced statistical techniques, are considered in this book. The examples emphasize the notion that the knowledge of statistical techniques alone is not sufficient. Good physical understanding of the specific problems in climate research is needed to guide the researcher in choosing the right approach to obtain meaningful answers. The second edition of this book, originally based on contributions given during a school sponsored by the European Union on the Italian island of Elba, continues to be based on these general principles. The general outline has been kept the same, covering aspects such as the examination of the observational record, stochastic climate models, analytical techniques, e.g. EOF, teleconnections and so on, but the chapters have been revised and updated, in some cases extensively, to cover the advances in the field in the years since the first edition.

Dobrovolski, S.G., Water Problems Institute, Moscow, Russia

Stochastic Climate Theory: Models and Applications

1999. XIV, 282 pp. 167 figs., 13 tabs., 3-540-66310-X, Springer-Verlag Berlin/Heidelberg

The author describes the stochastic (probabilistic) approach to the study of changes in the climate system. Climatic data and theoretical considerations suggest that a large part of climatic variation/variability has a random nature and can be analyzed using the theory of stochastic processes. This work summarizes the results of processing existing records of climatic parameters as well as appropriate theories: from the theory of random processes (based on the results of Kolmogorov and Yaglom) and Hasselmann's "stochastic climate model theory" to recently obtained results.

de Boer, R. , University of Essen, Germany

Theory of Porous Media — Highlights in Historical Development and Current State

1999. XVI, 618 pp. 176 figs., 3-540-65982-X, DM 159, Springer-Verlag Berlin/Heidelberg

Porous media theories play an important role in many branches of engineering, including material science, the petroleum industry, chemical engineering, and soil mechanics, as well as biomechanics. This book offers a consistent treatment of the material-independent fundamental equations of the theory of porous media, formulates constitutive equations for frictional materials in the elastic and plastic range, and traces the historical development of porous media theory. Thus, for the first time, a unique treatment of fluid-saturated porous solids is presented. The corresponding theory is explained by its historical progression, and its current state is thoroughly described.

Lliboutry, L.

Quantitative Geophysics and Geology

2000. Approx. 415 pp. 1-85233-115-1 DM 98, Springer-Verlag Berlin/Heidelberg

For the first time, a book is available that bridges the gap between geology and geophysics. Its integrative approach presents students and researchers in these disciplines with other methodologies as they try to understand the Earth's processes. The book covers the gamut of Earth Sciences, from earthquakes and seismic exploration to thermal convection and the orogenic processes. Each chapter starts with the well-established facts and then proceeds through a logical framework to the most conjectural questions, such as continental drift in Paleozoic and Precambrian times or mantle convection. Many of the issues discussed here have not yet found unanimously agreed solutions, but the extensive references point the reader to further possibilities.

Ricardo A. Olea, The University of Kansas, Kansas Geological Survey, USA

Geostatistics for Engineers and Earth Scientists

Kluwer Academic Publishers, Boston , Hardbound, ISBN 0-7923-8523-3, 1999, 328 pp. NLG 280.00 / USD 135.00 / GBP 87.75

Engineers and earth scientists are increasingly interested in quantitative methods for the analysis, interpretation, and modeling of data that imperfectly describe natural processes or attributes measured at geographical locations. Inference from imperfect knowledge is the realm of classical statistics. In the case of many natural phenomena, auto- and cross- correlation preclude the use of classical statistics. The appropriate choice in such circumstances is geostatistics, a collection of numerical techniques for the characterization of spatial attributes similar to the treatment in time series analysis of auto-correlated temporal data. As in time series analysis, most geostatistical techniques employ random variables to model the uncertainty that goes with the assessments. The applicability of the methods is not limited by the physical nature of the attributes.

Geostatistics for Engineers and Earth Scientists presents a concise introduction to geostatistics with an emphasis on detailed explanations of methods that are parsimonious, nonredundant, and through the test of time have proved to work satisfactorily for a variety of attributes and sampling schemes. Most of these methods are various forms of kriging and stochastic simulation. The presentation follows a modular approach making each chapter as self-contained as possible, thereby allowing for reading of individual chapters, reducing excessive cross-referencing to previous results and offering possibilities for reviewing similar derivations under slightly different circumstances. Guidelines and rules are offered wherever possible to help choose from among alternative methods and to select parameters, thus relieving the user from making subjective calls based on an experience that has yet to be acquired.

Geostatistics for Engineers and Earth Scientists is intended to assist in the formal teaching of geostatistics or as a self tutorial for anybody who is motivated to employ geostatistics for sampling design, data analysis, or natural resource characterization. Real data sets are used to illustrate the application of the methodology.

R.A. Reyment and **E. Savazzi**, University of Uppsala, Sweden

Aspects of Multivariate Statistical Analysis in Geology

1999, 292 pages, Elsevier, Paperback,ISBN 0-444-50412-5, Price US$76 / NLG 150, Hardbound,ISBN 0-444-82568-1, Price US$139.50 / NLG 275, www.elsevier.nl/locate/isbn/0444825681

The book presents multivariate statistical methods useful in geological analysis. The essential distinction between multivariate analysis as applied to full-space data (measurements on lengths, heights, breadths etc.) and compositional data is emphasized with particular reference to geochemical data. Each of the methods is accompanied by a practically oriented computer program and backed up by appropriate examples. The computer programs are provided on a compact disk together with trial data-sets and examples of the output. An important feature of this book is the graphical system developed by Dr. Savazzi which is entitled Graph Server.

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A Fresh Look at the Basis of Geostatistics

"Studies in Mathematical Geology" No. 6, *Modern Spatiotemporal Geostatistics*, by **George Christakos**, is now in the hands of the publisher, Oxford University Press. Publication date and price (with member discount) will be announced at the IGC in Rio. This will be the first IAMG monograph to appear since *Computers in Geology: 25 Years of Progress* (Davis and Herzfeld, 1993), which marked the Association's Silver Anniversary. It will also be the first monograph to appear since Dick McCammon relinquished the editorial reins of the series he founded. But most importantly, this is the first monograph on the subject of spatiotemporal geostatistics.

Of course you'd never buy a book without carefully reading the promo on the dust jacket; but as you probably know, our monographs go unclad. Thus, the following description is offered to arouse your interest:

George Christakos has used a modern formalism to document the powerful techniques of Bayesian maximum entropy (BME) developed during the past decade to study spatiotemporal phenomena, proposing a novel framework for modern geostatistics that is mathematically rigorous and covers a wide range of physical applications. Among the issues treated in depth in *Modern Spatiotemporal Geostatistics* are important geostatistical operations that depend on physical geometry (including covariance and variogram permissibility, interpolation, and estimation). The epistemic status of space/time mapping is advanced, with its view of the map as a visual representation of a scientific theory regarding the spatiotemporal distribution of the natural variable. Such an approach incorporates the interpolation methods of traditional geostatistics, with spatial statistics as special cases, and allows for the unification of previously separate classes of random fields including intrinsic, heterogeneous, fractal, and wavelet random fields.

Modern Spatiotemporal Geostatistics is filled with examples, applications, and case studies from the earth sciences, environmental engineering, human-exposure analysis, and geography, including the important connections between modern spatiotemporal geostatistics and GIS analysis. The book is a sincere effort to get to the heart of traditional geostatistics, acknowledging its previous successes even as it seeks to identify its current limitations.

The author's intent is to maintain the vitality of the field by urging practitioners to "take a few steps along the path of creativity and innovation." Thus, in his concluding chapter, George issues a call to research, "... an appeal for establishment of a multidisciplinary conception of modern geostatistics aimed at novel ideas and models that consider the advances of numerous scientific disciplines in which geostatistical methods can be applied." Buy it, try it, use it, you'll like it!

JoAnne DeGraffenreid

…from the Treasurer's Corner

$$$ in 1999

The following tables show our Balance Sheet and Statement of Revenue and Expenses, respectively, for 1999 compared to 1998.

INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY
Preliminary Balance Sheets - Cash Basis *
Dec. 31, 1998, and Dec. 31, 1999

	Dec-98	Dec-99
CASH ASSETS		
Cash in checking	$30,441	$59,305
Cash in other accts.	$5,256	$25,091
OTHER ASSETS		
(Investments @ market value)		
Unit Invest. trust - Corp. (Bnk. of Am. Inv.)	$6,784	$0
Unit Invest. trust - US Treas. (S. Barney)	$68,054	$52,450
FNMA bond (Bnk. of Am. Inv.)	$10,188	$0
US Treas. notes (Bnk. of Am. Inv.)	$50,209	$50,907
US Treas. bonds (Bnk. of Am. Inv.)	$102,988	$99,924
Floating Rate Acc. (Bnk. of Am. Inv.)	$199,322	$211,149
Mutual funds (Smith Barney)	$16,436	$37,597
Money funds (Smith Barney)	$5,778	$2,127
GNMA fund (Bank of NY)	$4,594	$4,679
TOTAL ASSETS	$500,050	$543,229
LIABILITIES	$0	$0
FUND BALANCE		
Balance at beginning of period	$441,253	$500,050
Net unrealized gain (loss) on investments	$17,767	($13,027)
Excess of revenue over expenses	$41,030	$56,206
Balance at end of period	$500,050	$543,229
TOTAL LIABILITIES & FUND BALANCE	$500,050	$543,229

INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY
Preliminary Statement of Revenue and Expenses – Cash Basis *
Years ended Dec. 31, 1998, and Dec. 31, 1999

	1998	1999
GROSS REVENUE		
Member dues & Monograph orders	$37,281	$49,225
Royalties (Plenum/Kluwer: MG, NR)	$14,462	$13,980
Royalties (Elsevier: CG)	$46,375	$47,066
Royalties (Oxford: Monographs)	$106	$186
IAMG conference reimbursements	$0	$8,504
Donations of IAMG conf. Surplus	$3,188	$0
Interest income:		
Checking & corporate & return on ppal.	$571	$6,163
GNMA (Bank of NY)	$329	$85
Government securities	$4,872	$5,690
Dividends:		
Bnk. of Am. Inv. (bonds, notes & mutual)	$2,563	$13,996
Smith Barney (mutual & money funds)	$1,293	$1,649
Unit Investment trusts	$499	$0
Gain on sale of stock	$26,976	$0
Gifts & donations received	$0	$15,900
Other income (refunds to IAMG)	$25	$1,708
TOTAL GROSS REVENUE	$138,540	$164,152
EXPENSES:		
Journal subscriptions	$35,779	$40,584
Monograph orders	$1,647	$1,069
Travel expenses	$13,488	$11,347
IAMG conferences	$15,000	$11,403
Joint meetings	$5,715	$9,500
Grants & prizes	$5,000	$5,251
Computer expenses & web site	$2,521	$6,806
IAMG booths at other meetings	$1,826	$2,624
Nat. Resources Research Promotion	$0	$3,300
Postage & postal fees	$1,561	$1,876
Supplies, printing, medals, plaques	$1,673	$6,706
Newsletter	$5,731	$3,646
Legal and accounting	$1,200	$1,200
Investment expense & bank charges	$3,669	$1,828
Contract labor	$827	$720
Refunds	$118	$84
Miscellaneous	$535	$0
TOTAL EXPENSES	$96,289	$107,945
EXCESS OF REVENUE OVER EXPENSES	$42,250	$56,206

**These tables have not yet been reviewed by a certified public accountant. Final figures may differ.*

In summary, our assets have increased from slightly over $500K to over $543K. Proceeds from investments have been modest due to a conservative investment policy, which ensured stability and low risk. As usual, most of the income was from royalties. During 1999 we received a large donation from the Mathematical Geologists of the United States, an organization that ceased to operate, and a contribution from the International Union of Geological Societies toward the organization of IAMG'99.

Many of the year-to-year fluctuations in revenue and expenses depend on whether some transactions were accounted for at the end of one year, or beginning of the next. We account on a cash basis, meaning that transactions are accounted when money is actually transferred. Other year-to-year changes, however, are "real". For example, we did spend more on computers and the web site in 1999 than in previous years. It is impossible to provide all accounting details in the space of this article. Feel free to email me any questions you may have.

Membership Accounting

During 1999 the IAMG membership increased, after a few years of decline. The following table shows some membership data for the period 1996-1999:

Year	Joiners	Rejoiners	**Total**	Quitters	Singlers
1996			**670**	200	115
1997	71	12	**553**	94	18
1998	67	6	**532**	88	21
1999	108	54	**606**		

"Joiners" are members that joined the IAMG in the year indicated and had never been members before.

"Rejoiners" are members that rejoined the IAMG after at least one full year of not being members. Large numbers in this column would reflect our ability to renew the interest of past members in our organization.

"Total" is the total number of members for each year, regardless of any other fact.

"Quitters" represents members who did not join the following year (some may have rejoined later). This number includes the singlers.

"Singlers" is our informal name for members who joined for a single year; they had not been members before and never joined again since. Large numbers in this column would reflect failure to interest new members, or short-term pressure to make them join.

The empty boxes reflect incomplete or yet unavailable numbers.

Two facts stand out:

1.There was a large number of members who joined for 1996 only. Further statistics (not shown here) indicate that 107 of the 115 "singlers" of 1996 joined at the Osaka meeting (where, unlike later IAMG meetings, membership was a requirement for attendance). Most likely, they were interested in the meeting, but not in long-term membership.

2.There was an inflow of members in 1999, mainly due to "rejoiners". Possibly, the web site and a circular sent to previous members had a positive effect on re-attracting previous members.

We hope that the empty boxes on the lower right continue to be empty next year!

The number of countries represented by our membership has also

increased in 1999. The newest countries are in Africa and Eastern Europe. The table below shows the number of countries represented and the three countries with the largest number of members each year. We welcome Australians to the first three! (they had one more member than Canadians)

Year	**Countries**	Largest	Second	Third
1996	**41**	USA	CANADA	GERMANY
1997	**43**	USA	GERMANY	CANADA
1998	**41**	USA	GERMANY	CANADA
1999	**49**	USA	GERMANY	AUSTRALIA

Electrifying News

By request from Eastern European members, starting this year, we accept Visa Electron cards for paying member subscriptions. Visa Electron is a debit card popular in Europe. It is not the same as a regular Visa card, which is a true credit card. If you pay with Visa Electron, simply check the Visa box in the renewal form and provide the appropriate card number. As with all card payments, do not forget to enter the expiration date and signature. We hope that this will be good news for our members, particularly in Eastern Europe, where it is much easier to get a Visa Electron than a so-called "major" credit card.

FAQs (Frequently Asked Questions)

Q: How much of the money I pay goes to the journal subscription and how much goes to membership dues?

A: All the money you pay is used for subscriptions. Additionally, the IAMG absorbs the mailing costs of monographs and part of the cost of student subscriptions to Computers and Geosciences. None of the member's payment is used specifically for "dues", but you must subscribe to a Journal to be a member. The financial statement for 1999 appears to show a greater revenue for "dues" (journal orders) than the corresponding expense because payments were received in December 1999 that were not sent to the publishers until January 2000.

Q: So where does the IAMG get the money for paying those extra costs plus other expenses?

A: The major income sources are: (1) royalties that the publishers pay for institutional subscriptions to IAMG publications, (2) proceeds from investments, and (3) donations. Additionally, none of the IAMG officers receives any remuneration from the IAMG for their work, so these proceeds (which are also tax free because we are a non-profit organization) can go a long way.

Q: Why does it take so long to get my journals after sending payment?

A: Membership renewal orders are processed once a month by the IAMG Treasurer. The Treasurer sends a list and payment to the publisher of each journal. The publisher in turn may take another month to process the order, and then send the journals directly to IAMG members *via surface mail*. The whole process can take about 90 days. However, if you do not receive your journals within that time, please contact the Treasurer (dan.tetzlaff@bakeratlas.com). This system is certainly not the fastest or error-free, but it is the least expensive.

Q: I attended the IAMG annual meeting and paid the higher rate for non members. Doesn't that make me a member?

A: No. The higher non-member rate for IAMG meetings does not include membership. If you join the IAMG and pay the lower member rate, you will not only pay less money overall for the meeting, but you will also be a member for that year and receive the corresponding journal(s). IAMG conventions are organized by a local institution of the country where they take place. By agreement with the IAMG, they charge a lower rate to IAMG members to encourage them to join. This year (as every four years) the IAMG will meet at the 31st International Geologic Congress (in Rio de Janeiro, Brazil), but will not hold a separate, independent meeting.

Daniel Tetzlaff
IAMG Treasurer
dan.tetzlaff@bakeratlas.com

Did you know that.....

the Association's web site *www.iamg.org* is ranked #13211 out of 329066 domains in the WebsMostLinked.com database? The domain's popularity was checked and ranked it relative to the other domains on the net. This is a very good ranking considering the IAMG is less than 500 members!

If you haven't visited *www.iamg.org* in a while, you should! The website has had a facelift and looks much more professional and easier to use then ever before. You'll find a lot of interesting and important information.

Howarth - continued from p. 9

as diverse as chemostratigraphy, company recruitment performance and pipeline corrosion analysis. In contrast, at UCL he has concentrated on the application of modern statistical methods in the Earth Sciences and the history of the development and application of quantitative methods in geology and geophysics. He has for example spent considerable time bringing to publication stage a book on the history of geophysics from its beginnings to the 1950's.

He has also during this period increased his burgeoning publications list to over 140. This now includes books on Computer applications in geology (1982), Statistics and data analysis in geochemical prospecting (1983) and Applied geochemistry in the 1980's (1986), the internationally renown Wolfson geochemical atlas of England and Wales, plus numerous journal contributions and reports on resource assessment, computer mapping, statistics, analytical error and quality control, pattern recognition, history of geology and geophysics, isotope stratigraphy and applied geochemistry. He has also continued his active role in supporting the IAMG, as a Charter Member (1968), Council Member (1977-1984) and on the Editorial Boards of Mathematical Geology (1977-1980) and Computers & Geosciences (1978-1995), together with numerous other societies such as The Geological Society where he acted as Honorary Secretary (1993-1996) and is a Chartered Geologist (1993).

Richard has somehow still managed to retain an interest in art (it must be in the genes) and he has accumulated a large book collection on contemporary art, most of it late 20th century painting, sculpture and photography. Wherever possible this collection is augmented by modern prints and paintings, but wall space in his house is at a premium due to the addition of numerous antiquarian science books on geophysics, mathematics and physics, a collection of modern fiction that veers from detective stories to AS Byatt and JG Farrell, and non-fiction such as biographies and the history of warfare. Taking into consideration, Richard's catholic music tastes with plenty of minimalism (Kronos Quartet, Latin Jazz, Massive Attack, Kurt Weill, early harpsichord music etc.) and a 25-year involvement with the Richmond Film Society, we begin to appreciate the wide-ranging and eclectic interests that impact Richard's working and home life. It is amazing to us mere mortals that so much can be packed into one lifetime.

Digressing for an amusing moment, Richard told me that the Richmond Film Society shows mostly foreign 'arthouse' productions and yet he holds the record for choosing the film which caused the greatest number of audience 'walkouts' during the performance – a Swiss film called "Diary of a Flea Circus Director", which he loved when he saw it at a viewing session but most of the members found it too boring or obscure to be bothered with.

Richard, it is with great pleasure that the International Association for Mathematical Geology recognise your significant contribution to the IAMG and the geoscience profession as a whole by awarding you the IAMG's highest award the William Christian Krumbein Medal for the year 2000.

John Cubitt
Energy Resource Management Limited
Newhaven
Church Street
Holt
Wales LL13 9JP

Top Ten Signs You Might Be a Geologist --

10. If you have ever had to respond "yes" to the question, "What have you got in here, rocks?"
9. If you have ever taken a 22-passenger van over "roads" that were really intended only for cattle.
8. If you have ever found yourself trying to explain to airport security that a rock hammer isn't really a weapon.
7. If your rock garden is located inside your house.
6. If you have ever hung a picture using a Brunton as a level.
5. If your collection of beer cans and/or bottles rivals the size of your rock collection.
4. If you consider a "recent event" to be anything that has happened in the last hundred thousand years.
3. If your photos include people only for scale and you have more pictures of your rock hammer and lens cap than of your family.
2. If you have ever been on a field trip that included scheduled stops at a gravel pit and/or a liquor store.

And the #1 sign that you might be a geologist . . .

if you have ever uttered the phrase "have you tried licking it" with no sexual connotations involved.

INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY
2000 MEMBERSHIP APPLICATION/RENEWAL

Name _____

Address _____

_____

_____

_____

Country _____

Optional Information:

E-mail _____

Phone _____

Fax _____

REQUIRED: **IAMG DUES. Check at least one journal (subscription includes annual dues).**

- ❑ Mathematical Geology ..... US$ 32.00
- ❑ Computers & Geosciences, regular ..... $ 71.00
- ❑ Computers & Geosciences, student (proof of enrollment required) ..... $ 35.50
- ❑ Natural Resources Research (previously Nonrenewable Resources) ..... $ 49.00

OPTIONAL: **IAMG Monograph Series. Circle prices of desired monographs.**

- ❑ #2: "Oil and Gas Forecasting – Reflections of a Petroleum Geologist" by Lawrence J. Drew ..... US$ 42.00
- ❑ ~~#3: "Geostatistical Glossary and Multilingual Dictionary" edited by Ricardo Olea ..... $ 31.50~~
- ❑ ~~#5: "Computers in Geology – 25 Years of Progress" ed. by John J. Davis and Ute Herzfeld ..... $ 38.50~~

NOTE: Monographs #1, #3, #4 and #5 are no longer available

TOTAL ..... US$ _____

I wish to pay by:
❑ Check (payable in U.S. currency drawn on a U. S. bank, to:
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Upcoming Meetings

4th International Symposium on SPATIAL ACCURACY ASSESSMENT in Natural Resources and Environmental Sciences, Amsterdam, **12-14 July 2000**. Symposium chair Dr Gerard B.M. Heuvelink, University of Amsterdam, Nieuwe Prinsengracht 130, 1018 VZ Amsterdam, The Netherlands. E-mail: accuracy@frw.uva.nl, http://www.gis.wau.nl/Accuracy2000

"GEO-INFORMATION FOR ALL" (19th International Congress of the International Society for Photogrammetry and Remote Sensing), Amsterdam, **16–22 July 2000**. Prof. K.J.Beek, PO Box 6, 7500 AA Enschede, The Netherlands; Phone: +31 (0) 53 4874214; Fax: +31 (0) 53 4874200; E-mail: beek@itc.nl

4th Int'l DYKE CONFERENCE, Itala Game Reserve, KwaZulu-Natal, South Africa, **25–28 July 2000**. E-mail: muninenn@pro.und.ac.za

IAG Int'l Symp. on GRAVITY, GEOID AND GEODYNAMICS 2000, Banff, Alberta, **31 July-4 Aug. 2000**, Susan Austen, Conference Management Services, University of Calgary, 1833 Crowchild Trail, N.W., Calgary, Alberta, Canada T2M 4S7, austen@ucalgary.ca, www.ucalgary.ca/~sideris/GGG2000/GGG2000.html

Society of EXPLORATION GEOPHYSICISTS, Calgary, Canada, **6–11 August 2000**. SEG Business Office, Phone: +1-918 497 5500; Fax: +1-918 497 5557; Website: seg.org

31st Int'l GEOLOGICAL CONGRESS - Geology and Sustainable Development: challenges for the Third Millennium, Rio de Janeiro, Brazil, **6-17 August 2000**. IGC Secretariat Bureau, Av. Pasteur, 404, Anexo 31 ICG, Urca, Rio de Janeiro - RJ - CEP 22.290-240, Brazil, Tel. (0055-21) 295-5847, Fax: (0055-21) 295-8094, E-mail: 31igc@cristal.cprm.gov.br, Website: www.31igc.org

JOINT STATISTICAL MEETINGS "Celebrate Diversity in Statistics", Indianapolis, Indiana, **13-17 August 2000**. Am. Statistical Assoc. / Inst. of Math. Statistics Int'l Biometric Society, ENAR and WNAR Statistical Soc. of Canada. E-mail: meetings@amstat.org; phone (703) 684-1221.

GOLDSCHMIDT 2000, Oxford, UK, **3–8 September 2000**. P. Beattie , Cambridge Publications, Publications House, PO Box 27, Cambridge UK CB1 4GL; Phone: +44-1223 333438; Fax: +44-1223 333438; E-mail: Gold2000@campublic.co.uk; Website: http://www.campublic.co.uk/science/conference/Gold2000/

XXI. Congress Int'l Assoc. of HYDROGEOLOGISTS "New Approaches to Characterising Groundwater Flow", Univ. of Munich, **10-14 Sept. 2000**, Inst. of Hydrology, GSF Nat'l Research Centre of Environment and Health GmbH, Ingolstädter Landstr. 1, D - 85764 Neuherberg, Germany, http://agh.iaag.geo.uni-muenchen.de

ECCOMAS2000, European Congress on Computational Methods in Sciences and Engineering, Barcelona**, 11-14 September 2000**. SEMNI, Edificio C-1, Campus Norte (UPC), C/Gran Capitán, s/n, 8034 Barcelona, Spain, ph. +34 93 401 6487, fax: +34 93 401 6517, e-mail: eccomas2000@etseccpb.upc.es, http://cimne.upc.es/cimne/congresos/eccomas.htm

Geographical Domain & Geographical Information Systems - EuroConference on the Ontology and Epistemology for SPATIAL DATA STANDARDS, La Londe-les-Maures (France), **22 - 27 September 2000**, Chaired by Stephan Winter (Vienna, Austria), Dr. Josip Hendekovic, Phone: +33 388 76 71 35, fax: +33 388 36 69 87, http://www.esf.org/euresco/00/lc00153a.htm

SPE Annual Meeting, New Orleans Louisiana, **1 - 4 October 2000**. 214-952-9393. SPE Annual Technical Conference and Exhibition, Dallas, Texas, U.S.A.

Recent advances in SHEAR WAVE TECHNOLOGY for reservoir characterization: A new beginning? (SEG, EAGE), Boise, Idaho, USA, **1-6 Oct. 2000**. Reinaldo J. Michelena, PDVSA Intevep Sector Santa Rosa Los Teques, Edo. Mir, Phone: (+58) 2 908 6855, E-Mail: michelen@intevep.pdv.com, Web: seg.org/meetings/srwboise2000/

Computer Simulation in RISK ANALYSIS AND HAZARD MITIGATION (Int'l Conf.), Bologna, Italy,**15–18 October 2000**. Karen Savage, RISK 2000/1479, Wessex Inst. of Technology, Ashurst Lodge, Ashurst, Southampton, SO4O 7AA, UK; Phone +44-238 029 3223; Fax: +44-238 029 2853; E-mail: ksavage@wessex.ac.uk

Managing EARTHQUAKE RISK in the 21st Century, Palm Springs, California, USA, **12–15 November 2000**. Website: www.eeri.org/

GEOLOGICAL SOCIETY OF AMERICA, ann. mtg., Reno, Nev., **13-16 Nov. 2000.** GSA Meetings, Box 9140, Boulder, CO 80301-9140. Phone: 303/447- 2020, ext. 164. Fax: 303/447-1133

geoENV2000 3rd European Conf. on Geostatistics for Environmental Applications, Avignon, France, **22-24 Nov. 2000**. Unite de Biométrie, INRA, Domaine St. Paul, Site Agroparc, 84914 Avignon cedex 9, France; ph. +33 432 712170, fax: +33 432 712182, email: geoenv2000@avignon.inra.fr http://www.avignon.inra.fr/biometrie/geoenv2000

DEEP WATER RESERVOIRS of the World, research conf., Houston, Tex. **3-6 Dec. 2000**. GCSSEPM Foundation, WWW: http://www.gcssepm.org

Advanced RESERVOIR CHARACTERIZATION for the 21st Century, research conf., Houston, Texas, **5-8 Dec. 2000**. GCSSEPM Foundation, WWW: http://www.gcssepm.org

FROM MAGMAS TO MUD (and back), Mineralogical Soc. Millennium Conf. on the generation, diagenesis, metamorphism, and anatexis of mudrocks, University of Reading, UK, **13-15 Dec. 2000**. Dick Merriman, British Geological Survey, Keyworth, Nottingham, NG12 5GG, U.K. Phone: 44 (0)115 936 3417. Fax: 44 (0)115 936 3352. E-mail: r.merriman@bgs.ac.uk

GEOSYNTHETICS in the Next Millennium, ann. conf., Philadelphia, Pa., **14-15 Dec. 2000**. Ms. Marilyn Ashley, Geosynthetic Institute, 475 Kedron Ave., Folsom, Pa. 19033-1028. Phone: 610/522-8440. Fax: 610/522-8441. E-mail: marilyn.ashley@coe.drexel.edu

AGU Fall Meeting, San Francisco, Calif., **15-19 Dec. 2000**. AGU Meetings Dept., 2000 Florida Ave., NW, Washington, DC 20009. Phone: 202/462-6900. Fax: 202/328-0566. E-mail: meetinginfo@agu.org, www.agu.org/meetings

Spatial Methods for Solution of ENVIRONMENTAL AND HYDROLOGIC PROBLEMS: Science, Policy and Standardization, Reno, Nevada, USA, **25–26 January 2001**. Dr. Vernon H. Singroy, Canada Center for Remote Sensing, 588 Booth St., Ottawa, ONT K1A 0Y7, Canada. Phone: +1-613 947 1215; E-mail: Vern.Singhroy@GeoCan.NRCan.gc.ca

EAGE European Association of Geoscientists and Engineers 63rd Conference & Technical Exhibition, Amsterdam, The Netherlands, **11-15 June 2001**. Website: www.eage.nl

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS (Annual Meeting), Denver, Colorado, **3-6 June 2001**. AAPG Conventions Dep't, P O Box 979, 1444 S. Boulder Ave., Tulsa, OK 74101-0979, USA. Phone: +1 918 560 2679; Fax: +1 918 560 2684 or 800/281-2283; E-mail: dkeim@aapg.org

WATER-ROCK INTERACTION, Sardinia, Italy, **10–15 June 2001**. Rosa Cidu, Dipartimento di Scienze della Terra, via Trentino 51, I-09127 Cagliari, Italy; E-mail: cidur@unica.it

Sixth SIAM Conference on Math and Comp Issues in the Geosciences (SIAG/GS), (GS01), Boulder, CO, **11-14 June 2001**. SIAM Conference Department, 3600 University City Science Center, Philadelphia, PA 19104-2688 Phone: (215) 382-9800, Fax: (215) 386-7999, E-mail: meetings@siam.org

International Conference on GEOMORPHOLOGY (5th), Tokyo, Japan, **23–28 August 2001**. Prof. Kenji Kashiwaya, Dept. of Earth Sciences, Kanazawa University, Kakuma, Kanazawa 920-1192, Japan; Phone & Fax +81-76 264 5735; E-mail: kashi@kenroku.kanazawa-u.ac.jp; wwwsoc.nacsis.ac.jp/jgu/

International Association of MATHEMATICAL GEOLOGY (6th Int'l Conference), Cancún, Mexico, **6–16 September 2001**. Gina Ross, Kansas Geological Survey; E-mail: aspiazu@kgs.ukans.edu; Website: www.kgs.ukans.edu/Conferences/IAMG/index.html

Society of EXPLORATION GEOPHYSICISTS, San Antonio, Texas, USA, **9–14 September 2001**. SEG Business Office, Phone: +1-918 497 5500; Fax: +1-918 497 5557; Website: seg.org

GEOLOGICAL SOCIETY OF AMERICA (Annual Meeting), Boston, Massachusetts, USA, **5–8 November 2001**. GSA Meetings Dept., P.O. Box 9140, Boulder, CO 80301-9140, USA; tel: +1 303 447 2020; fax: +1 303 447 1133; meetings@geosociety.org; www.geosociety.org/meetings/index.htm

AAPG (Annual Meeting), Houston, Texas, USA, **10–13 March 2002**. AAPG Conventions Dept., P.O. Box 979, Tulsa, OK 74101-0979, USA; Phone: +1-918 560 2679; Fax: 1-918 560 2684; convene@aapg.org; www.aapg.org

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Conference Reports

Textures in Geology - Freiberg

A short course "Textures in Geology" was held at the Geology Department of Freiberg University of Mining and Technology, Saxony, Germany, March 27 - 30, 2000, and chaired by Prof. Helmut Schaeben. Lectures were presented by faculty members as well as Karsten Kunze from the Geology Department at ETH Zürich and Heinrich Siemes from the Mineralogy Department of RWTH Aachen. The course attracted participants from universities and research institutions, from Freiberg and abroad (Brazil, Denmark, Portugal, Switzerland).

Texture, i.e. crystallographic, or lattice, preferred orientation, is a constitutive property of polycrystalline materials like rocks. The texture reveals information about fabric developments and deformation mechanisms. In addition, it provides a first degree approximation of macroscopic anisotropic physical properties of rocks. The course gave an introduction to aims, techniques and applications of quantitative texture analysis of rocks.

Many crystals are anisotropic with respect to their physical properties, e.g. heat conductivity or thermal expansion. A well known example is quartz, for which thermal expansion changes from positive to negative relative to different crystallographic directions.

Whether a polycrystalline specimen is isotropic or not depends on the statistical distribution of orientations. In case of a well developed preferred orientation the specimen behaves approximately as anisotropic as a single crystal; in case of a random orientation distribution it is isotropic since anisotropies cancel out.

Amongst other causes, the texture of marble slabs employed as building facades or tombstone decoration is thought to significantly influence the spectacular phenomena of bending, fracturing, spalling and shattering of the initially intact slab.

That seismic waves travel with different speed along or across ocean ridges has been known since the 60's; recently it has been explained with texture changes during mantle convection.

The subject of texture analysis is experimental measurements, analysis, and interpretation of preferred orientation. Mathematically, texture analysis by diffraction data may be seen as an application of spherical tomography, with roots dating back almost 100 years to the pioneering work of mathematicians Paul Funk and Johann Radon to reconstruct a function from its mean values along certain manifolds. It is one of the few instances in history that the spherical case to reconstruct a function defined on a sphere from its means along circles preceded the corresponding Cartesian case.

The series of lectures fit well into the university's concept of interdisciplinary cooperation of geosciences, mathematics and engineering sciences.

Helmut Schaeben

Mike Hohn and Dan Merrriam at GSA in Denver manning the IAMG booth and having a good time!

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From the mouths of babes ....
...gleaned from essays of 5th and 6th graders:

Many dead animals in the past changed to fossils while others preferred to be oil.

To most people solutions mean finding the answers. But to chemists solutions are things that are still all mixed up.

IAMG presence at the 3rd Joint International Congress of AMPG/AAPG

As President of the Mexican Association of Petroleum Geologists (AMGP, Asociación Mexicana de Geólogos Petroleros), it was my pleasure to meet IAMG members attending the 3rd Joint International Congress of AMPG/AAPG. Our Congress was held in Boca del Rio, Veracruz, Mexico, from October 10th to the 13th, 1999, on the occasion of AMPG's 50th anniversary.

Seeking to improve interaction with geoscientists in Latin America, IAMG's Council generously provided funds as sponsors of the Joint Congress. In a reciprocal gesture, AMPG sponsored participation at our Joint Congress by representatives of the Organizing Committees for IAMG's 2001 annual conference to be held in Cancún, Mexico ('Cancún 2001'). **Jorgina Ross**, Chairperson of the IAMG Organizing Committee, and **David Collins**, Committee member, traveled from the Kansas Geological Survey in Lawrence, Kansas. **José Luís de la Rosa** from Mérida and **Moisés Dávila** from Veracruz represented IAMG's Local Organizing Committee.

Standing by one of the posters promoting the IAMG conference in Cancún 2001 are (left to right) José Luís de la Rosa, Moisés Dávila, Alfredo Guzman, and Gina Ross at the AMPG/AAPG Joint Congress in Boca del Rio.

The theme for the AMPG/AAPG Joint Congress was 'Revitalization of Mature Petroleum Provinces'. In keeping with the theme, numerous papers and poster sessions focused on techniques for petroleum prospect analysis made possible by advances in technology and improved methods of analysis. These included the use of coherence cube analysis of 3-D seismic data, high-resolution aeromagnetic surveys, and ray-tracing techniques to resolve sub-salt plays. Many presentations dealt with applications in mature provinces in Mexico, such as the Burgos Basin in northern Mexico and south Mexico's Mesozoic reservoirs, but studies of major provinces throughout the world were well represented.

The Congress was a proud celebration of 50 years of distinguished contributions by AMPG to the advancement of petroleum geology. Special recognition was given to AMPG founders and past presidents. It provided a forum for an excellent exchange of the latest scientific advances in our field. In addition, It is hoped that useful connections were made by members of IAMG that will contribute to the success of your conference, 'Cancún 2001'.

Alfredo E. Guzman, President, AMPG

Executive Committee member for the
3rd Joint International Congress of AMPG/AAPG

Position at Universidad Politécnica de Catalunya (Barcelona, Spain) Dept. Applied Mathematics III

The Department of Applied Mathematics III invites applications for a **tenure-track assistant professorship** in geostatistics and applied mathematics to begin in September-October 2000.

Teaching duties consist of approximately 8 hours per week in two 15 week-semesters in probability, statistics, geostatistics and other applied mathematical subjects for Geological and Civil Engineering students.

Candidates are expected to conduct their own research projects in Geostatistics, Geological or Civil Engineering, or related fields as well as to advise junior researchers.

Minimum requirements are: a) high level Spanish language; b) PhD in Mathematics, Statistics, Engineering or related Sciences; c) developed curriculum vitae in applied math. and statistics with special emphasis in geosciences.

Interested candidates should send a detailed curriculum to Prof. Juan José Egozcue, egozcue@ncsa.es before July, 15, 2000.

CALL FOR AWARD NOMINATIONS

The Association invites all members to submit nominations for the **Felix Chayes Prize 2001** and the **Andrei B. Vistelius Award 2001**, according to the following rules and subsequent guidelines:

Deadline: January 15, 2001

Documents that should accompany the proposal:

- a short statement summarizing the relevant qualifications of the nominee;
- a curriculum vitae of the nominee.

The Awards Committee is working through electronic mail. Therefore, please use the following support of documents:

- e-mail or diskette;
- in rtf format or as simple text files (ASCII code). Please remember that **not** everybody has the latest versions of Word or other text processors like LaTeX!

Award descriptions, guidelines, and recipients, as approved by the Council, November 11, 1997, can be found in the IAMG web page www.iamg.org. Please, have a look at it before submitting your proposal!

Send to: vera.pawlowsky@upc.es

or

Vera Pawlowsky-Glahn
Awards Committee Chair
Universitat Politécnica de Catalunya
E.T.S. d'Enginyeria de Camins, Canals i Ports
Departament de Matemática Aplicada III
Jordi Girona Salagado, 1-3, modul C2
08034 Barcelona, SPAIN

International Association for Mathematical Geology
c/o Dr. Harald S. Poelchau
Forschungszentrum Jülich ICG-4
D-52425 Jülich
Germany

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