

ASSOCIATION ANNOUNCEMENT

THE NINTH GENERAL ASSEMBLY OF THE INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY

Tuesday, October 6, 1998

President Ricardo Olea opened the General Assembly at 6:37 p.m. in the Vesuvio Room of the Hotel Intercontinental Terme, Ischia, Italy, site of IAMG'98.

1. REPORTS FROM OFFICERS

1.1. President's Report

The Association continues to be in good scientific and financial standing.

Abiding by the Statutes, regular administrative business has been conducted by the Council, primarily taking advantage of the modern capabilities offered by electronic mail. Standing committees have assisted the Council in dealing with five specialized areas of permanent concern: awards, education, environment, membership, and publications.

This year, for the first time since its inception, the Association does not have a founding member in its Council, which signals a passing of responsibilities to a new generation. Decisions of the past that were trivial undertakings for our founding fathers are progressively less obvious to many and practices that were appropriate twenty years ago are no longer the most convenient way to go. During these two years, Council has spent a great deal of its efforts learning how to best run the Association, borrowing from the best traditions of the past and adapting them to new circumstances. This first General Assembly outside of an International Geological Congress is a token of efforts to abide by fair and logical laws and regulations. The Constitution has been complemented with general, flexible guidelines summarizing and updating past practices to add consistency and efficiency to our activities.

Since the last Ordinary General Assembly of 1996, in basic fulfillment of its mission, fiscally independent committees have organized two IAMG conferences, and another conference is scheduled for next year; in addition, the Association has co-sponsored or participated in the organization of eight more meetings. The Internet site continues its expansion to offer more information and services; the journals and the Newsletter continue to be published regularly. The three journal Editors-in-Chief and the Editor of the Oxford Monograph Series continue to operate independently for routine editorial business, but since 1997 they are also members of a Publications Committee; this Committee discusses problems of common interest and establishes future guidelines intended to safeguard and improve our publications.

1.2. Vice President's Report

One of my goals as IAMG Vice President has been to increase collaboration between statistical organizations and the IAMG. I am hoping this increased collaboration will help to make statisticians more aware of the interesting problems in geology and the environmental sciences, and also help make IAMG scientists more aware of recent advances in statistical methodology that might be useful in their research.

In support of this goal, I recently organized an Invited Paper Session (co-sponsored by the American Statistical Association's Section on Statistics and the Environment) titled "Advances in Geostatistics" on behalf of IAMG for the Joint Statistical Meetings (JSM) held 9 – 13 August 1998, in Dallas, Texas. In this session, Dr. Isobel Clark spoke on "Geostatistical Estimation Applied to Highly Skewed Data," Dr. Christian Lantuejoul presented "Conditional Simulation of Random Sets," and Dr. Peter Dowd presented his recent work on "Incorporating Model Uncertainty in Geostatistical Methods of Risk Analysis." Dr. Michael Hohn served as a discussant. I think this session went very well and that statisticians attending the JSM found these talks interesting and informative.

IAMG has also received an invitation from the International Statistical Institute (ISI) to organize an invited-paper meeting for their 52nd Biennial Session, 10 – 18 August 1999, in Helsinki, Finland. IAMG has been affiliated with the ISI since its inception, but collaboration between the two organizations had lapsed. Consequently, I am pleased that IAMG is once again connected to the ISI and that IAMG members will have increased opportunities to participate in ISI meetings. At the request of President Olea and after approval from the IAMG council, I've organized the following IAMG/ISI session:

Tentative Invited Meeting Title: Statistical Aspects of Physical and Environmental Science.

Speaker 1: Dr. Ute C. Herzfeld, Geomathematik/Universitat Trier, GERMANY
Tentative title: New approaches to the statistical analysis of satellite and remote-sensing data

Speaker 2: Dr. Graeme F. Bonham-Carter, Geological Survey of Canada, CANADA
Tentative title: WofE--a GIS tool for statistical integration of mineral exploration datasets

Speaker 3: Dr. Paul Switzer, Department of Statistics, Stanford University, USA
Tentative title: Indoor air pollution: Spatial time-series measurement and models

Discussant: Dr. Peter I. Brooker, Department of Geology and Geophysics, University of Adelaide, AUSTRALIA

I am interested in any suggestions you might have concerning increased collaboration between IAMG and statistical organizations. In particular, I am very open to suggestions concerning session themes and speakers, outreach programs and workshops, and joint training opportunities. I also welcome and encourage your participation in these efforts.

1.3. Treasurer's Report

Treasurer Dan Tetzlaff presented a Balance Sheet (Table 1) and Statement of Revenue and Expenses (Table 2). These cover different time periods: January 1 – December 31, 1997, and January 1 – August 31, 1998, so the numbers are not directly comparable from one year to the next. In short, the IAMG is very well off financially, and it is expected that the IAMG will increase its funds during 1998 by more than \$50,000.

Dan Merriam pointed out that most of the IAMG's income is due to royalties from the journals. He reminded the membership that John Davis negotiated favorable contracts with the journal publishers years ago to provide the current levels of income.

1.4. Secretary General's Report

During my tenure, I have been involved in activities expected of a Secretary General. I have set up agendas for Council meetings, and have written and distributed minutes of the meetings to the Council members. I also established the agenda and wrote minutes for the Ninth General Assembly in Ischia. Another activity was designing and ordering plaques that were presented to the four award winners.

A large responsibility is writing an annual report to the IUGS. Highlights in the reports of our past two years are presentation of the two Annual Meetings, IAMG'97 and IAMG'98. IAMG also supported eight other meetings:

- Workshop on Advances in Quantitative Stratigraphy, Xian, China, August 1996.
- Computerized Modeling of Sedimentary Systems, Guestrow, Germany, October 1996.
- Data Analysis and Computer Technology and their Application for Geochemical and Geoenvironmental Research, Lviv, Ukraine, October 1996.
- Geologische Vereinigung, Juelich, Germany, February 1997.
- Mining Příbram Symposium and Sixth International Symposium on the Application of Mathematical Methods and Computers in Mining, Geology, and Metallurgy, Prague, Czech Republic, October 1997.
- IAMG/ASA Session, Joint Statistical Meetings, Dallas, Texas, August 1998.
- NATO Advanced Study Institute on "Deposit and Geoenvironmental Models for Resource Exploitation and Environmental Security", Matrahaza, Hungary, September 1998.
- Fourth International Biennial Symposium "Application of Mathematical Methods and Computer Technology in Geochemistry and Environmental Protection", Kiev, Ukraine, September 1998.

This year brought a feather to IAMG’s cap, as the IUGS granted US\$1,000 to provide travel expenses for scientists from the former Soviet Union and developing countries to IAMG’98.

During 1998, I coordinated amending the IAMG’s Statutes and Bylaws. This consisted of developing the changes, wording the ballot, writing material showing the proposed changes, and mailing and counting ballots. The results of the balloting are discussed below.

2. AMENDMENTS TO STATUTES AND BY-LAWS

During 1997 and 1998, the Council determined that several amendments were needed for the IAMG Statutes and Bylaws. These ranged from modifications to improve operations to changing the awards system to removal of obsolete items. A mail ballot was sent to all members in early 1998, as follows:

		FOR	AGAINST
Article 1	affiliation with AAPG	97	6
Article 4 and Bylaw 8	appoint committee chairs	102	1
Article 4	removes end of committees	102	1
Articles 5 and 6	fits Assemblies with Annual Meetings	102	1
Article 12	Council quorum to 50%	101	2
Articles 17 and 18	updates accounting	103	0
Bylaw 3	remove old IGC membership	101	2
Bylaws 8 and 9	delete - obsolete	99	2
Bylaws 14 and 17 and Article 4	revised awards	101	1

There were two abstentions in the 103 votes cast. The results of the mail ballot were validated by unanimous vote of the membership at the General Assembly.

Three additional subjects were presented to the General Assembly. Comments returned with the ballots pointed out that an inconsistency existed in the Statutes relative to creation of the new Awards Committee (Article 11), and that Committees and Commissions were not defined (Article 4). In addition, the amount charged for membership dues needed to be clarified (Bylaw 1). The General Assembly unanimously approved the three proposed amendments.

The amended Statutes and Bylaws are in Appendix A. The previous Statutes and Bylaws may be found in *Mathematical Geology*, v. 29, p. 604 – 612.

3. COMMITTEE REPORTS

Reports from various IAMG Committees were given to the Officers in written form. These reports are presented here for the information of the membership.

3.1. Awards Committee (Vera Pawlowsky-Glahn, Chair)

During the Eighth General Assembly of IAMG held in Beijing on 8 August 1996, the IAMG adopted two new awards, the John C. Griffiths Medal and the Felix Chayes Medal, thereby increasing the number of IAMG awards from two to four. The Andrew B. Vistelius Award (formerly known as the President's Award) and the William Christian Krumbein Medal are the pre-existing awards.

The increase in number of awards posed problems with respect to criteria for selecting recipients. Changes were also precipitated by establishment of the Chayes Prize, which includes an endowment with a cash award. Accordingly, soon after the Beijing meeting, President Ricardo Olea created the IAMG Awards Commission, and charged it with the task of devising (1) appropriate definitions for each of the four awards, and (2) guidelines for selection of recipients. President Olea stressed that each award should be distinct, and that the IAMG's system of awards should form a coherent whole.

John W. Harbaugh (USA) chaired the Commission; other members were Frits Agterberg (Canada), Graeme Bonham-Carter (Canada), Hernani Chaves (Brazil), Carol Gotway Crawford (USA), John Cubitt (Great Britain), Ghislain de Marsily (France), Olivier Dubrule (Great Britain), Thomas Jones (USA), Richard McCammon (USA), Vera Pawlowsky-Glahn (Spain), and E. H. Timothy Whitten (Great Britain).

The Commission reviewed the IAMG's awards, and proposed a new system of awards. Initial drafts of definitions and guidelines for the four awards were prepared by John Harbaugh. The Awards Committee prepared modifications that were accepted by the Council on May 22 and July 28, 1998. The current version of the IAMG's award definitions and guidelines can be found in Appendix B and on the IAMG's web home page: <http://www.iamg.org>.

Four major changes were made to the system of awards:

1. The awards originally designated as the Griffiths Medal and the Chayes Medal have been renamed the Griffiths Award and the Chayes Prize. These changes were made to increase the contrast between the four awards. Thus, the IAMG now has one designated medal, one prize, and two awards.
2. Each of the four awards is to be presented on a biennial basis, not every year as had been the previous custom for presentation of the Krumbein Medal and the Vistelius Award. A biennial schedule allows for presentation of two awards each year, the

Krumbein Medal and Griffiths Award being awarded in even-numbered years and the Chayes Prize and Vistelius Award in odd-numbered years.

3. Each award is to be presented in the year in which the recipient is selected. Previously, the actual presentation of an award would lag one or more years following selection. Not until 2000 will the year of nomination and year of presentation coincide fully, but the first awards to be presented in the same year of nomination are the 1999 awards that will be presented at IAMG'99 in Trondheim. The 1998 awards also will be presented in 1999. The delay is the result of a mixture of previous traditions in which the awards were presented on an expired-year basis, as well as the time that it has taken to review and modify the overall system of awards.
4. All awards are to be presented at the Annual Meeting of the IAMG, to which each recipient is invited with the expectation that a keynote address will be delivered dealing with issues of the recipient's choice, thus enhancing the honor for both the recipient and the IAMG. Travel expenses are provided by IAMG.

The Awards Commission also recommended that a standing committee was needed to oversee the IAMG's award system, resulting in establishment of the IAMG Awards Committee on 11 November 1997. Since its inception, the Awards Committee has been composed of five members: Heinz H. Burger (Germany), John C. Cubitt (England), John C. Davis (USA), John W. Harbaugh (USA), and Vera Pawlowsky-Glahn (Spain). John Harbaugh served as the committee's chairman from its inception until he was succeeded by Vera Pawlowsky-Glahn in May 1998.

The current version of the IAMG's award definitions and guidelines can be found on IAMG's web home page. From now on, laudations of award recipients can be found on the initial pages of the proceedings of the IAMG's Annual Meeting, on the IAMG's web home page, and in the IAMG journals. The Krumbein Medal and the Vistelius Award will be featured in *Mathematical Geology*, and the Chayes Prize and the Griffiths Award in *Computers & Geosciences*.

Four awards were presented in October 1998 at the IAMG's annual meeting in Ischia, Italy. The Krumbein Medal for 1996 was presented to Jan E. Harff (Germany), the 1996 Griffiths Award was presented to John H. Doveton (USA), the 1997 Chayes Prize was presented to the Subcommittee on Data Bases for Petrology, and the 1997 Vistelius Award was presented to Gert Jan Weltje (The Netherlands).

The presentation ceremony at Ischia was an emotional affair, particularly because Dr. Irene Hendry Chayes, Felix Chayes' widow, attended the conference, having been invited by the IAMG to present the first Chayes Prize. Dr. Chayes and Mrs. Natalie C. Tenney, sister of Felix Chayes, provided an endowment for the Chayes Prize that will permit a cash award to accompany each presentation in perpetuity, for which IAMG is deeply grateful to Dr. Chayes and Mrs. Tenney.

3.2. Education Committee (John Tipper, Chair)

The IAMG Education Committee was reconstituted during 1998 in order to better reflect its principal activity: the editorial oversight of the series “Mathematical Geology: Studies for Students” (SfS). Committee membership is now Margaret Armstrong (Centre de Geostatistique, Ecole des Mines de Paris), Pierre Goovaerts (Department of Civil Engineering, University of Michigan), John Harbaugh (Department of Geological Sciences, Stanford University), Thomas Jones (Exxon Production Research Company), Helmut Mayer (Geomathematik, Universitaet Trier), and John Tipper (Geologisches Institut, Albert-Ludwigs Universitaet).

Two articles in the SfS series have appeared so far:

Webster, R., 1997, Regression and functional relations: *European Journal of Soil Science*, **48**, 557-566.

Horgan, G. W., 1998, Mathematical morphology for analyzing soil structure from images: *European Journal of Soil Science*, **49**, 161-173.

A few other manuscripts for the SfS series are being considered by the committee, and these should go to journals in late 1998. A larger number of other manuscripts have also been promised by a variety of authors, and the committee hopes that some of these manuscripts will be ready in 1999. All members of the committee are convinced of the need to maintain momentum for the series, and would therefore encourage all potential authors either to contact them personally to obtain further information or to look at the committee’s page on the IAMG web site: <http://www.iamg.org>.

3.3. Membership Committee (Jan Harff, Chair)

The IAMG had 523 members in September 1998. This is down 27 from 1997 and 126 from 1996. Table 3 shows the number of members from the ten countries with the most members. The table shows that IAMG is losing North American members, whereas membership is growing in the European countries. The large change in Japanese membership is related to attendance at the Osaka meeting.

The IAMG should concentrate in two areas:

1. We should start more activities in education and training for our scientific youth that want to gather experience in those fields of science to help move into a professional career. Such training opportunities will also be valuable to those colleagues who have lost jobs and must change specialties. Along this line, I would like to recommend special memberships for unemployed colleagues.
2. We should focus our program on more applied aspects. I agree with President Olea that the incorporation of more aspects of industrial interest without losing track of fundamental scientific goals could lead to a remarkable increase of membership.

In addition, I have a big concern that is caused by the loss of science and culture in Russia and the Ukraine since 1990. Russian scientists played a world-leading role in mathematical geology during the sixties, seventies and eighties. The economic disaster in Russia destroys science and culture continuously. Let's look for possibilities to support gifted scientists from this part of the world to survive as scientists and to keep their knowledge of mathematical geology. Perhaps it is not too late. We should think, for instance, of special research or teaching grants for Russian scientists.

During the Committee's meeting in Ischia, Italy, it was decided to focus on activities to attract scientific youth to the IAMG. The Committee will promote:

- Special sessions during the annual conferences where participants can discuss professional issues of interest to beginning geoscientists. The first session will be organized during the IAMG'99 meeting in Trondheim.
- Special low-cost conferences for young scientists giving the possibility to present their first scientific results (e.g., from Diploma and Doctoral theses). A first conference is under discussion to be held in 2000 in Italy.

G. J. Weltje has volunteered to assist the organizers of the conferences to prepare these meetings and to represent the interests of the scientific youth within the Membership Committee.

New members of the Membership Committee include G. J. Weltje (The Netherlands), M. Armstrong (France), and N. Gorelikova (Russia).

3.4. Publications Committee (Frits Agterberg, Chair)

The Publications Committee was formed in June 1997; it consists of Graeme Bonham-Carter (Editor-in-Chief, *Computers & Geosciences*), Michael Hohn (Editor-in-Chief, *Mathematical Geology*), Daniel Merriam (Editor-in-Chief, *Natural Resources Research*, after 1 January 1999), Richard McCammon (Editor-in-Chief, *Nonrenewable Resources*, until 31 December 1998), Jo Anne DeGraffenreid (Editor, *International Association for Mathematical Geology Studies in Mathematical Geology*), Niichi Nishiwaki-Nakajima, John Tipper, and Frits Agterberg (Chairman).

The Committee's inaugural meeting was held 25 September 1997 during IAMG'97 in Barcelona, Spain. It was attended by 23 colleagues who offered suggestions on IAMG publication matters. A smaller meeting took place 6 October 1998 during IAMG'98 on Ischia Island, Italy. During the past year the Committee was concerned with the following items:

1. Nominations of Editors of our journals and Monograph Series. Dick McCammon has retired as Editor of our Monograph Series. Jo Anne DeGraffenreid was selected as his successor and her nomination was approved by IAMG Council. She has recruited Tom Jones and Heinz Burger as Associate Editors. Jo Anne also became a Member of our

Committee in December 1997. Dan Merriam has taken over from Dick McCammon as Editor-in-Chief of *NRR*. From January 1999 onward, the name of the journal will be *Natural Resources Research* instead of *Nonrenewable Resources*. Dan has formed a new editorial advisory board and appointed a large number of associate editors in charge of various topics of natural resources research.

2. Quality and scope of our publications. The current practice of peer review of papers submitted for publication in our journals is for the Editor-in-Chief to appoint two referees. Additional reviewers may be called in if the initial two reviewers disagree, or when major revisions are required. Guest editors may be appointed for special issues provided that the standard peer review process is followed. The Editor-in-Chief retains the right to reject or request modification of any paper submitted for publication. Only original papers will be published.

The Committee became concerned with authorship and originality of ideas because of a case of alleged plagiarism brought by IAMG member Bob Crovelli against Jingzhen Xu, Xiadong Liu, Zhangming Chen, and Chunwen Gao who published an article (*Nonrenewable Resources*, Vol. 6, No. 4, 1997, pp. 277-280) based on Crovelli's methodology without acknowledgements. The evidence was studied by a subcommittee consisting of Niichi Nishiwaki, John Tipper and Frits Agterberg, who confirmed Crovelli's findings. However, lack of experience was agreed upon as the most likely explanation. The matter will be resolved by publication of an apologia by Xu et al. with comment by Crovelli in the forthcoming December (1998) issue of *Nonrenewable Resources*.

3. Ways to promote our publications. During the year several new initiatives were discussed and submitted to IAMG Council for approval. These included: (a) for student members, *Computers & Geosciences* is offered at 25% discount from Elsevier, discount that is matched by the IAMG, which means that students end up paying 50% of the subscription rate paid by regular IAMG members; (b) acceptance of Elsevier's new offer of a discounted 1-year subscription to new IAMG members who sign up for *Computers & Geosciences* at booths where *C&G* is on display at large conferences other than our own; the Association now matches the Elsevier discount of 20 per cent off the regular subscription rate set for 1998 and later years; consequently, during their first year, these new members pay 60% of the regular subscription rate; (c) proposal by Dan Merriam to ask the Energy Minerals Division of the American Association of Petroleum Geologists to co-sponsor *Natural Resources Research* in order to help ensure the viability of the journal; and (d) proposal by Graeme Bonham-Carter to prepare, at the Geological Survey of Canada in Ottawa, a set of four new posters for the IAMG booth at the annual meeting of the Geological Society of America to be held in late October 1998 at Toronto, and other IAMG booths at later meetings. The first poster deals with the IAMG in general, and there will be a poster for each of our journals.

4. Impact of electronic publications and use of compact disks. As one of the first international earth science journals, *Computers & Geosciences* now is online. The Editor's Home Page (<http://www.nrcan.gc.ca/gsc/iamg/cghome.html>) is frequently used

to download codes for computer programs (over 1000 programs/month). The Committee recommended and Council approved a proposal by Graeme Bonham-Carter, Editor-in-Chief of *Computers & Geosciences*, to make a feasibility study to put out a compact disk with all the code from *C&G* up to the end of 1999, which would be 25 complete issues. Plenum is considering production of online versions of *Mathematical Geology* and *Natural Resources Research*.

5. Contracts with publishers and royalties. Committee members have participated in discussions regarding renewals of existing contracts and have assisted the IAMG Treasurer with verification of royalty payments. Elsevier has offered to publish IAMG monographs. An important issue during the year was how to ensure the continuation of *NRR* which suffers from lack of institutional and member subscriptions. Until a few years ago the IAMG made a significant financial contribution to produce *NRR*, but currently it is published by Plenum at their risk. Last fall, Plenum proposed incorporating *NRR* into *Mathematical Geology*, although partial autonomy was to be retained (8 issues/year of *MG* as it is now and 4 issues/year of *NRR*). We are maintaining the status quo (two separate journals), but Dan Merriam will need our support to ensure that *Natural Resources Research* becomes commercially as well as scientifically successful.

Individual Editor's reports follow.

***Computers & Geosciences* (Graeme Bonham-Carter, Editor-in-Chief)**

At the time of writing this report, eight issues have gone to press, but there will be the full ten issues this year, as normal. Table 4 shows the total number of published pages per volume in recent years; note that there has been a change. This mainly reflects the reduction in the number of pages per paper, principally caused by moving code from the journal to the IAMG server. This has been compensated for to some extent by increasing the number of papers per issue. 1996 was the first full year of the operation of the IAMG FTP site for code. We are now adding about 50 programs per year to the web site, which represents about half of the total number of papers published per year.

In 1997 (volume 23) there were three special issues, and in the current year, two special issues have appeared; issue 10 will be a part special issue. Several special issues are planned for 1999. Special issues provide a mechanism for maintaining the size of the journal at its current level, and for bringing collections of papers about thematic topics to the readers.

Computers & Geosciences Online has now been in full operation since volume 23, number 8 (October 1997), and is free to all subscribers until at least 1999. Papers can be read at the desktop, and printable Adobe files can be downloaded and printed. They look exactly like reprints, and colour figures can be reproduced if a colour printer is used.

Webmaster Grunsky reports below on the number of programs downloaded from the IAMG FTP site, and progress on the Silver CD project to scan all programs previously printed in the journal.

The 1997 Best Paper Award went to T. R. Smith, B. Birnir, and G. E. Merchant for two companion papers: "Towards an elementary theory of drainage basin evolution: I. The theoretical basis, and II. A computational evaluation" in volume 23, number 8, pages 811-849. There were several other strong contenders.

During the year, Elsevier announced that the present arrangement under which authors pay no page charges for colour if separations are supplied would be terminated. However, they relented when strong arguments for retaining the current policy were presented. Starting in January 1999, a new manuscript style will be introduced, in the interests of standardization to improve the efficiency of producing the online version.

Volume 25 will have a new cover, selected from four entries to the cover competition. The winning design is by Eric Grunsky and depicts a statistically derived multi-element geochemical surface draped over a DEM and illuminated from the side.

***Mathematical Geology* (M. E. Hohn, Editor in Chief)**

Volume 30 of *Mathematical Geology* will include 51 papers, and will be 1042 pages in length. Production has been on time, with new manuscripts going to the publisher, Plenum Press, about six months before publication, as planned. Issues appear to be coming out on time as well.

I am well into 1999 in preparation of new issues; vol. 31, numbers 1 and 2, have been received by Plenum, and I have enough accepted papers for another two to three issues. Several papers from IAMG'97 will appear this year. I have an energetic book review editor, and we hope to have at least one book review per issue. Selection of best papers for the last several years is in progress.

About a year ago I created a Web site for the journal, which includes instructions to authors, names and addresses of the editorial board, and tables of content. The content of the site is in response to the types of queries I receive from authors and readers. It includes a link to the IAMG, of course.

I have not encountered any problems since I began as Editor-in-Chief. There are the usual difficulties with slow reviewers and overly long manuscripts. I have tried to broaden my reviewer base, in part to relieve the workload of my editorial board, but also to increase awareness of our journal. I am pleased in general with the mix of papers that we receive. Although there seems to be a disproportionate number of papers on geostatistics, this is an area with much research activity, especially as applications have spread from mining to petroleum engineering and the environment.

4. WEBMASTER

The primary web service for the IAMG is currently located and managed by the Geological Survey of Canada in Ottawa. The primary administrative contact and web site manager is Eric Grunsky.

Developments on the IAMG world wide web site for 1998

The IAMG Newsletter is now available in Adobe Acrobat format (pdf) for downloading from the IAMG web site. Arrangements have been made with Harald Poelchau to provide a brief pdf file for each newsletter, starting with issue number 56. A special site will be prepared on the IAMG web site where the newsletters can be obtained. Files in pdf format can be read and printed using the Adobe Acrobat Reader, which is available free from Adobe Systems.

The IAMG established its first mirror site in Europe earlier this year. Robert Marschallinger kindly assisted in getting the University in Salzburg to provide the mirror site. The university recently agreed to create daily mirror updates, thus minimizing any delay from information provided on the Ottawa server. Attempts at establishing mirror sites in Australia and Asia have not yet met with success.

At the request of President Ricardo Olea, I am in the process of establishing an IAMG member database that will be provided to any member who browses the IAMG web site. Policy issues regarding member participation are being worked out with the Council.

FTP and WWW access statistics

Starting this year, access statistics to the IAMG web site are available in graphical form from the home page. These statistics will be updated on a half-yearly basis. The graphical statistics can be viewed at <http://www.iamg.org/ftplogs/ftpsummary.htm> and <http://www.iamg.org/wwwlogs/wwwsummary.htm>.

Access to the ftp site and computer programs continues to increase. During the past year, monthly access to the site varies from 800 to 1400 hits per month. These hits do not include administrative access. When viewed from the date of commissioning (June 1994), access to the ftp site has been progressively increasing. When access to the individual volumes is examined, the pattern appears to be periodic. The reason for the periodicity is not clear, but may be related to a combination of access during the academic year and the release of *C&G* issues.

Access to the IAMG home page and associated pages linked to it have steadily increased. During 1998, the site was accessed more than 1000 times each month. During 1997, site visits were less than 700 per month. Access to the home page and associated pages do not exhibit the degree of periodicity as the ftp access statistics. Access statistics are currently not available at the mirror site in Europe.

A list of the most popular programs can be seen at <http://www.iamg.org/ftpstats.html>. The programs currently are listed by Volume, Number, and Paper Sequence Number. It is hoped that titles and author names will be linked to the list soon. Also, because of different path names associated with different servers, a given program may have two or three sets of access numbers. These discrepancies will be addressed soon.

In summary, the IAMG web site continues to be popular and the IAMG is working toward providing more services to its members and the general public. Access to both the *Computers & Geosciences* programs and the IAMG home page continues to increase. Access to the computer programs exceeds access to the other IAMG services.

Silver CD Project

In April, Graeme Bonham-Carter and I discussed the possibility of creating a single compilation of computer programs that were published during the first 25 years of *Computers & Geosciences*. A proposal was put forward to the IAMG Council for testing the feasibility of carrying out such a task. Approval was given to evaluate the feasibility of scanning old program code and using OCR (optical character recognition) technology to convert old programs. The monetary limit was set at US\$10,000.

A scanner, CD-writer, and OCR software package were obtained by August. Two volumes of *Computers & Geosciences* (volumes 8 and 16) were provided by Peter Henn (Elsevier Science) for the trial study. Volume 8 was chosen as it represents program code printed in 1982 which has a mix of older-style print copy and dot-matrix printers that were popular at the time. Volume 16 was chosen as it represents program code from 1990 which has a mix of laser print, dot-matrix print, and older IBM 1400-series mainframe printers.

To date, the two volumes have been scanned and preliminary tests are being carried out on the OCR transcription. A formal report will be presented to Council when the tests are complete.

In conjunction with the scanning is a campaign to solicit digital code from previous authors. A letter will be published in the IAMG Newsletter and in *Computers & Geosciences* that will ask previous authors to provide digital source code via e-mail or diskette. It is hoped that some of the OCR transcription and error checking can be eliminated using this approach.

5. ADJOURNMENT

The General Assembly meeting was adjourned at 7:19 p.m.

November 1998
Secretary General IAMG

Table 1.

INTERNATIONAL ASSOCIATION FOR
MATHEMATICAL GEOLOGY
BALANCE SHEETS – CASH BASIS
December 31, 1997, and August 31, 1998

	Dec 1997	Aug 1998
	-----	-----
CASH ASSETS		
Cash in checking	\$ 74,803	8,416
Cash in other accounts	19,301	7,816
 OTHER ASSETS (Investments at market value)		
Unit Investment Trust – Corp.	7,477	6,466
Unit Investment Trust – US Treas.	70,396	67,661
FNMA bond	10,238	10,212
US Treasury notes	76,385	49,620
US Treasury bonds	91,973	99,475
Mutual funds	16,728	211,241
Common stock	68,467	--
GNMA fund (Bank of NY)	4,265	4,488
Prague Account	1,220	1,220
	-----	-----
TOTAL ASSETS	\$ 441,253	466,615
	=====	=====
 LIABILITIES		
FUND BALANCE		
Balance at beginning of period	365,758	441,253
Net unrealized gain (loss) on invest.	10,455	--
Transfer	3,853	--
Excess of revenue over expenses for the period	61,187	25,362
	-----	-----
Balance at end of period	441,253	466,615
	-----	-----
TOTAL LIABILITIES AND FUND BALANCE	\$ 441,253	466,615
	=====	=====

COMMENTS ON BALANCE SHEET

1. All common stock was sold in 1998 and placed in a floating-rate account managed by van Kampen, and listed in the sheet under Mutual Funds.
2. Matured Government securities and excess cash were placed in the same account.
3. A portion of the assets in said account is designated as the “Chayes Fund”, and will be used to fund the Chayes award. The value of this “fund” will be tracked for internal purposes only, but will not appear on financial statements. As of August 31, 1998, its value was \$94,535.

Table 2.

INTERNATIONAL ASSOCIATION FOR
 MATHEMATICAL GEOLOGY
 STATEMENTS OF REVENUE AND EXPENSES – CASH BASIS
 Year Ended December 31, 1997, and Period January 1 – August 31, 1998

	Jan-Dec 1997	Jan-Aug 1998
	-----	-----
GROSS REVENUE		
Membership dues and monog. orders	\$38,962	35,332
Royalties (MG, NR)	13,842	14,462
Royalties (CG)	44,237	--
Royalties (Monographs)	161	105
IAMG Conference reimbursements	--	--
Share of revenue from IAMG Conference	--	--
Donation of IAMG Conference surplus	--	3,188
Interest income:		
Checking and money market accounts	1,681	603
GNMA (Bank of NY)	412	223
Government Securities	10,186	6,298
Dividends:		
Nations Securities	1,037	3,807
Smith Barney	797	785
Unit Investment Trust	640	371
Other income	525	25
Gain on sale of stock	--	29,738
Gifts (common stock and pub. royalties)	14,400	--
	-----	-----
TOTAL REVENUE	126,880	94,937
	-----	-----
EXPENSES		
Journal subscriptions and member dues	37,384	34,636
Monograph orders	2,076	1,190
Travel expenses	1,227	1,334
IAMG Conferences	7,809	15,000
Joint Meetings	2,700	5,715
Grants and Prizes	--	--
Computer expenses and web site	5,686	1,760
IAMG booths at other meetings	803	1,075
Postage	1,095	671
Supplies and printing	711	1,258
Newsletter	2,464	3,442
Legal and accounting	1,200	1,200
Investment expense and bank charges	1,481	1,397
Contract labor	--	779
Refunds	608	118
Miscellaneous	449	--
	-----	-----
TOTAL EXPENSES	65,693	69,575
	-----	-----
EXCESS OF REVENUE OVER EXPENSES	\$61,187	25,362

COMMENTS ON STATEMENT OF REVENUE AND EXPENSES

1. THE STATEMENT OF REVENUE AND EXPENSES COMPARES A 12-MONTH PERIOD WITH AN EIGHT-MONTH PERIOD. THIS MUST BE KEPT IN MIND WHEN COMPARING THE TWO COLUMNS.
2. Royalties for Computers and Geosciences (Royalties CG) in excess of \$46,000 are expected in October 1998.
3. A reimbursement of approximately \$10,000 from IAMG'98 is expected in November 1998.
4. Expenses for travel and awards estimated at \$15,000 are likely to be incurred in October and November 1998.
5. An amount of \$1,000 was donated to the IAMG by the IUGS to support the IAMG 1998 Annual Conference, but was sent directly to the conference organizer. Therefore, that amount does not appear in this balance sheet.

Table 3. IAMG membership development from July 1996 to August 1998, for ten countries with most members

Country	Members 1998	Change from 1996 to 1997	Change from 1997 to 1998
USA	200	-6	-12
Germany	35	3	2
Canada	31	-6	-5
Australia	29	4	-5
Japan	26	-87	-1
United Kingdom	25	-8	0
Spain	18	1	-1
Italy	15	4	3
France	13	1	4
The Netherlands	12	5	-2

Table 4. Statistics on last 10 years of *Computers & Geosciences*. Current issue is incomplete, but will have 10 issues.

Volume	24 (1998)	23 (1997)	22 (1996)	21 (1995)	20 (1994)
# issues	(8)	10	10	10	10
# pages	(803)	1134	1194	1208	1482
# papers	(86)	110	98	90	76
Mean length (pp/paper)	9.3	10.3	12.2	13.4	19.5
# programs on server	(43)	49	53	20	11

Table 4 (continued).

19 (1993)	18 (1992)	17 (1991)	16 (1990)	15 (1989)	14 (1988)
10	10	10	8	8	6
1582	1500	1500	1246	1338	964
106	79	87	70	88	48
14.9	19.0	17.2	17.8	15.2	20.1
9	6	11	10	12	4

APPENDIX A: STATUTES AND BY-LAWS OF THE IAMG

Statutes and By-Laws accepted at the founding meeting in:

Prague, August 22, 1968 (Mathematical Geology 1(1)123-126)

and revised in:

Montreal, August 28, 1972 (Mathematical Geology 6(1)91-97)

Sydney, August 24, 1976 (Mathematical Geology 9(2)181-188)

Paris, July 15, 1980 (Mathematical Geology 13(3)253-259)

Moscow, August 8, 1984 (Mathematical Geology 17(6)656-663)

Kyoto, August 31, 1992 (Mathematical Geology 26(2)262-269)

Beijing, August 8, 1996 (Mathematical Geology 29(4)604-612)

Ischia, Italy, October 6, 1998.

Statutes

I. Name and aim

1. The name of the organization is International Association for Mathematical Geology, hereinafter called IAMG, which is an international scientific, nongovernmental, nonpolitical, and nonprofit-making organization. IAMG shall be affiliated to the International Union of Geological Sciences, the International Statistical Institute, and the American Association of Petroleum Geologists.
2. The aim of IAMG is to promote international cooperation in the application and use of mathematics in geological research and technology. To this end the activities of the IAMG shall include:
 - (a) the organization of meetings, of field excursions, and of visits to centers of research and technology;
 - (b) the issue of publications on the application of mathematics in the geological sciences, and of discussions thereon;
 - (c) cooperation with other organizations professionally concerned with applications of mathematics and statistics to the biological sciences, earth sciences, engineering, environmental sciences, and planetary sciences.

II. Membership

3. IAMG accepts as members geoscientists, statisticians, and other interested individuals or organizations.

III. Administration

4. The affairs of IAMG shall be administered by the General Assembly (articles 5-9), and on behalf of the General Assembly by the Council (articles 10-12). The General Assembly may recommend to the Council to appoint committees.

The Council has the power to appoint any commission and committee it may deem necessary for the scientific and administrative work of the IAMG. The power to dissolve a commission or committee rests with the Council. The Chair of any commission or committee shall be appointed by the Council.

A committee is defined to be a standing group to deal with business or issues of a permanent nature, whereas a commission is a task force to deal with a short-term need.

Unless otherwise specified in the By-Laws, committee members remain in office until the end of the term of the voting members of the Council and are eligible for reappointment.

5. The General Assembly, consisting of all members present at the business meeting, is the highest authority of IAMG.

Ordinary meetings of the General Assembly shall commonly be held at each International Geological Congress. Special meetings may be held during an IAMG conference if deemed necessary by the Council or requested by 25% of the members of IAMG.

Notice of meetings of the General Assembly shall be given to the members at least six (6) months in advance.

6. Transactions of an ordinary General Assembly may include:
 - (a) reports from the Officers and Council.
 - (b) reports from the chairmen of committees, and from persons to whom special tasks have been entrusted by the General Assembly or the Council;
 - (c) presentation of and voting on amendments to the Statutes and to the By-Laws, if any;
 - (d) election of Officers and Councilors;
 - (e) any other pertinent business.
7. All members have the right to attend the General Assembly and to participate in the debates.

In voting, each member of IAMG has one (1) vote and may appoint any other member of IAMG present at the General Assembly to act as the member's proxy. Authority to act as proxy must be given in writing and have the prior acceptance of the Council. Each member institution and company may appoint one (1) representative who has one (1) vote.

8. Decisions of the General Assembly shall be by simple majority of votes, except for those on amendments to the Statutes and on dissolution of IAMG which shall be transacted as determined by article 25.

If requested by at least one-third of the members present or by the Council, voting shall be by ballot.

9. The President and the Secretary General of the Council shall be the Chairman and the Secretary of the General Assembly, respectively.
10. The Council consists of not more than fifteen (15) members: the President, the Vice President, the Secretary General, the Treasurer (hereafter referred to as the Officers of IAMG and members of the Executive Committee), the immediate Past President, six (6) Ordinary Members, one (1) representative appointed by the geologists of the host country for the next International Geological Congress, and three (3) Editors-in-Chief appointed by the Council -- one (1) per journal. The Editors-in-Chief are non-voting members of the Council.

Representation on the Council shall reflect regional distribution of membership as stated in the By-Laws. The Ordinary Members elected by the General Assembly may be re-elected for only one (1) additional term. The Secretary General and the Treasurer may be elected for no more than two (2) consecutive terms. The President and Vice President shall not be eligible for more than one (1) term of office. The outgoing Secretary General remains an ex officio member of the Executive Committee for a period of at least one (1) year.

The term of office of the Council is from the end of one ordinary meeting of the General Assembly until the end of the next ordinary meeting. If the office of President becomes vacant between meetings of the General Assembly, the Vice President shall act as President. If the offices of Secretary General or Treasurer become vacant between General Assemblies, an acting Secretary General or Treasurer, respectively, shall be appointed by the Council to serve for the remainder of the term of office.

11. At least one (1) year before an ordinary meeting of the General Assembly, the Council shall appoint a Nominating Committee of which the President or a Council Member designated by the President, shall be the nonvoting chairman. The Nominating Committee shall consist of five (5) individual members of the IAMG in addition to the chairman; no currently serving elected officer may be a voting member of the Nominating Committee. The Nominating Committee shall report its list of candidates to the Council by mail at least four (4) months before the General Assembly meeting at which the election is to be held.

Additional nominations for the Council may be made from the floor of the General Assembly.

12. The Council conducts the work of IAMG between meetings of the General Assembly in accordance with the Statutes, By-Laws, and recommendations of the General Assembly.

The Council is empowered to suspend a By-Law temporarily, subject to approval of the General Assembly.

Decisions of the Council are by simple majority. Each member has one (1) vote. If there is a parity of votes, the President (in the President's absence the Vice President, or in the Vice President's absence the Secretary General) has the casting vote. A quorum shall be at least half the voting members of the Council and include at least two (2) of the officers. The Council has the power to conduct its business by post.

IV. Domicile and representation

13. The legal domicile of IAMG shall be the place where the Secretary General conducts business.

All contracts involving IAMG shall be signed by the President and one of the officers.

The President is the official representative of IAMG, but the President may appoint a proxy to represent IAMG at certain functions.

V. Finances

14. The business of IAMG shall be carried on without the purposes of financial gain for any individuals or adhering organizations. Membership fees shall be as laid down in the By-Laws.
15. The income of IAMG, such as membership fees and contributions from other sources, shall be held in custody by the Treasurer. The Treasurer shall hold the IAMG funds in such a way that they are readily available for the activities of IAMG.

With the exception of a money market or checking account with funds necessary for the regular operating expenses of the IAMG, all financial assets of the IAMG shall be held in investment accounts requiring the signatures of both the Treasurer and the President for withdrawal of funds.

16. IAMG is under no obligation to pay expenses which are incurred without the sanction of the Treasurer and the President. However, the Council may empower one of its members to decide on its behalf in matters involving sums of less than \$100 (U.S.). The members of Council shall receive no salaries. Items that may properly be charged as expenses include office expenses, printing expenses, and publishing expenses.
17. Each year the Treasurer shall contract the services of a certified accounting firm to review the accounts of the IAMG. The report of the reviewers shall be quoted in the balance sheet presented to the Council.

VI. International meetings on mathematical geology

18. IAMG shall promote a symposium on mathematical geology to be held in association with the quadrennial International Geological Congress.
19. The host country for the next International Geological Congress shall appoint an Organizing Committee to be responsible for all local arrangements in connection with the symposium, apart from the proceedings. Matters concerning the publication of the Symposium Proceedings shall be decided upon by the Council.

The Officers of IAMG shall be advisory members of the Organizing Committee, but may not serve on this committee.

The Council shall support the Organizing Committee in every possible manner.

20. For activities in the host country the International Symposium on Mathematical Geology shall have accounts separate from those of IAMG. If the Organizing Committee has any surplus after all expenses concerning the International Symposium on Mathematical Geology are paid, such surplus shall be transferred to IAMG funds.
21. The Council may:
 - (a) accept invitations to organize conferences on mathematical geology jointly with other professional organizations;

- (b) request proposals to organize IAMG conferences. The Council has the right to select the most convenient proposal or to reject them all.

VII. Amendments to the Statutes and dissolution of IAMG

- 22. The Statutes of IAMG can be amended only by the General Assembly. Proposals for amendments must be received by the Secretary General at least four (4) months before the General Assembly.
- 23. Any proposal for the dissolution of IAMG must be received by the President and Secretary General at least six (6) months before the General Assembly.
- 24. Proposals for amendments to the Statutes and for dissolution of IAMG shall be sent to the members not later than two (2) months before the General Assembly.
- 25. A two-thirds majority of the votes cast at the General Assembly shall be required for amendments of the Statutes and for dissolution of IAMG to be accepted.
- 26. In the event of dissolution of IAMG, its assets shall pass to the International Union of Geological Sciences (IUGS). If the IUGS is, at the time of the IAMG's dissolution, no longer in existence, no longer qualified as an exempt organization under section 501(c)(3) of the United States Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue law), or unwilling or unable to accept the assets of the IAMG, then the IAMG assets shall be distributed exclusively for charitable and scientific purposes to an organization or organizations that are qualified as exempt organizations under section 501(c)(3) of the United States Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue law).

Should IAMG financial assets be held in other countries, tax exempt requirements shall again be examined and appropriate arrangement shall be made for distribution of IAMG financial assets in the event of dissolution of the organization.

By-Laws

I. Membership

- 1. Annual membership fees are fixed as follows:
 - (a) Individual membership dues are determined by the choice of subscription to a journal, of which at least one is required. The full cost of the dues is paid to the publisher for the journal subscription, as defined by contracts with the publishers. Annual membership fees thus may be adjusted from year to year to reflect changes in the subscription prices.

During 1999, the annual rates resulting from contracts with the publishers are:

Mathematical Geology \$32 (U.S.)

Computers & Geosciences \$69 (U.S.)

Natural Resources Research \$49 (U.S.)

(b) Corresponding membership is free (\$0). Corresponding membership is limited to individuals residing in countries with inconvertible currencies.

(c) Institutional membership is \$1,000 (U.S.)

(d) Company membership is \$1,000 (U.S.)

(e) Sustaining membership is \$5,000 (U.S.)

(f) Patron membership is \$10,000 (U.S.)

All members will receive the IAMG Newsletter as part of membership.

2. To maintain membership in IAMG the annual fee must be paid before January 30 of the calendar year to which it relates.

II. Appointments

3. Not more than two (2) Ordinary Members, and, in all, five (5) voting members of the Council, shall be from the same country. This By-Law shall be reviewed at every ordinary meeting of the General Assembly.
4. Any Officer or Council Member who resigns or who is more than one (1) year in arrears of dues shall be replaced by majority vote of the Council from nominations made by the President. The newly appointed member shall fill the unexpired term of office and shall be subject to the same conditions of office as outlined in the Statutes and By-Laws of the IAMG.
5. The Editors-in-Chief of the IAMG journals, in consultation with the Council, shall be empowered to appoint one (1) Deputy Editor, up to six (6) Associate Editors, and up to thirty (30) Editorial Correspondents.
6. The President shall appoint an Archivist to be responsible for maintaining the permanent records and files of the IAMG.
7. The Chair of a committee or commission, in consultation with the Council, shall appoint the members of the committee or commission.

III. Regional organizations

8. Regional organizations may be constituted within IAMG. Application for forming a regional organization is to be made to the Council.
9. A regional organization may be formed if the membership for the region deems it desirable, conforms to the Statutes and By-Laws of the IAMG, and submits a report to the Secretary General annually. This By-Law shall be reviewed at every ordinary meeting of the General Assembly.
10. Regional organizations shall be responsible for formulating their own local by-laws and regulations.

IV. Awards

11. The Council, as determined by Article 4 of the Statutes and By-Law 7, shall appoint a committee, known as the Awards Committee, that consists of five members of the Association (with the President acting as chairman ex officio), to seek nominations, select recipients, and announce winners of the William Christian Krumbein Medal, the Felix Chayes Prize for Excellence in Research in Mathematical Petrology, the John Cedric Griffiths Teaching Award, and the Andrei Borisovich Vistelius Research Award. Each member of the Awards Committee shall be appointed for a term of four years, with terms of members overlapping. Members of the Awards Committee shall be ineligible to receive any of the Association's awards while serving on the Committee.
12. The William Christian Krumbein Medal is the highest award given by the Association and the recipient shall be so honored and acknowledged. The Krumbein Medal is awarded to senior scientists for career achievement, which includes (a) distinction in application of mathematics or informatics in the earth sciences, (b) service to the IAMG, and (c) support to professions involved in the earth sciences. There is no stipulated preference for fields of application within the earth sciences.
13. The Felix Chayes Prize for Excellence in Research in Mathematical Petrology is a cash prize endowed in honor of Felix Chayes that shall be given to recipients of exceptional potential and proven research ability. The prize shall be presented for outstanding contributions to statistical petrology or related applications of mathematics or informatics. Prospective recipients should be in mid-career.
14. The John Cedric Griffiths Teaching Award shall be presented to honor outstanding teaching, with preference for teaching that involves application of mathematics or informatics to the Earth's nonrenewable natural resources or to sedimentary geology. Age or academic status are not conditions for the award.
15. The Andrei Borisovich Vistelius Research Award shall be presented to a young scientist for promising contributions in research in the application of mathematics or informatics in the earth sciences, There is no preference for specific fields of application. A recipient should be 35 years or less at the end of the calendar year for which he or she has been selected for the award.
16. Each of the four awards shall not be presented more often than every two years. In the event that a qualified recipient is deemed to be unavailable, presentation of an award may be delayed so that it is presented at intervals greater than two years. A specific award may not be presented to a group or an individual more than once.
17. Each IAMG journal may select every year the most outstanding paper. The President shall serve as chairman ex officio of each journal selection committee, here construed to include the Editor-in-Chief, the Deputy Editor and the Associate Editors. The awards for the best papers shall be

recognized in an appropriate fashion. Nominations in support of the award may be made by members of the IAMG to the committee.

V. Amendments

18. The By-Laws can be amended only at a meeting of the General Assembly. Amendment of the By-Laws shall be by simple majority of votes.

VI. Rights

19. All IAMG announcements, circulars, etc., shall be distributed to each member of IAMG.
20. The International Association for Mathematical Geology recognizes the principle of human rights as a fundamental requisite for the achievement of mutual understanding among people and promotes the unrestricted flow of ideas by word and image.

APPENDIX B: AWARD DESCRIPTIONS, GUIDELINES, AND RECIPIENTS

Approved by the IAMG council: November 11, 1997

Modified and updated: May 22, 1998

Modified and expanded: July 28, 1998

The International Association for Mathematical Geology has four awards to recognize outstanding contributions to mathematical geology.

The following guidelines have been prepared to help in finding individuals worthy of recognition, to describe the purpose of the awards, to establish some basic rules to assist in the selection procedure, and to give consistency to the process through time.

WILLIAM CHRISTIAN KRUMBEIN MEDAL

A. Description

The William Christian Krumbein Medal was established in 1976 during the XXV International Geological Congress in Sydney. The medal measures 10 centimeters in diameter and contains slightly more than 500 grams of bronze. The bust of Krumbein is on the front side of the medal, and the Association's logo is on the reverse side. The medal was designed by sculptor Abbot Pattison, a graduate from the Yale School of Fine Arts, and casting of the medals was done at the Fonderia Marinelli in Florence, Italy. In addition to the medal, recipients receive a plaque with the recipient's name and date of the award. Until 1996, the prize was awarded annually.

Krumbein was a founding officer of the Association. Born at Beaver Falls, Pennsylvania, in January 1902, Krumbein attended the University of Chicago, receiving the degree of bachelor of philosophy in business administration in 1926, MS in geology in 1930, and PhD in geology in 1932. He taught at the University of Chicago from 1933 to 1942, advancing from instructor to associate professor. During World War II, from 1942 until 1945, he served in Washington, DC, with the Beach Erosion Board of the U. S. Army Corps of Engineers. Following a short stint with Gulf Research and Development Company immediately after the war, he joined Northwestern University in 1946, serving there until mandatory retirement in 1970. He was named the William Deering Professor of Geological Sciences in 1960. Krumbein died on August 18, 1979, a few months after Syracuse University had awarded him a DSc (honoris causa). At his memorial service, former Northwestern colleague Larry Sloss said of Krumbein "that by constitutionally rejecting conventional wisdom, he continually pursued innovative methods whereby the natural phenomena of geology could be expressed with mathematical rigor."

B. Guidelines

1. The Awards Committee will publicize a request for nominations for the Krumbein Medal in the IAMG Newsletter and other appropriate places early in each year following the one in which a recipient of the medal is to be selected.
2. Each nomination should include a resume and a short statement summarizing the relevant qualifications of the nominee with respect to conditions outlined in the By-Laws.
3. Each Awards Committee member will evaluate all nominees in a scale from 0 to 10 for each of the criteria outlined in the By-Laws. The winner shall be the nominee who receives the most points. In the event of a tie, the chairman of the Awards Committee shall cast the deciding vote.

4. A nominee does not need to be a member of the Association at the time of the nomination, but evaluation of prospective candidates includes the condition of "service to the IAMG."
5. The candidate must be living at the time of the selection, be willing to receive the medal at the time and place designated by the Association, and be a keynote speaker at the meeting where the medal is presented.
6. The Association will pay for the recipient's travel expenses up to a maximum amount to be determined by the Awards Committee.
7. Announcement about the recipient will be published in the proceedings of the annual conference where the presentation is made, and in *Mathematical Geology*.
8. A copy of the announcement will be kept on the IAMG web site until the next recipient is chosen.

C. RECIPIENTS

Medalists, year of nomination, and place of announcement, either in *Mathematical Geology* (MG) or the Newsletter (NL), are:

1	1976	John C. Griffiths	MG 10 (3) 315-316
2	1977	Walther Schwarzacher	MG 10 (4) 391-392
3	1978	Frederik P. Agterberg	MG 10 (6) 699-700
4	1979	Richard A. Reymont	MG 11 (4) 443-444
5	1980	Andrei B. Vistelius	MG 13 (3) 243-245
6	1981	Daniel F. Merriam	MG 14 (6) 679-681
7	1982	Danie G. Krige	MG 15 (6) 709-712
8	1983	Georges Matheron	
9	1984	Felix Chayes	MG 18 (2) 263-266
10	1985	John W. Harbaugh	MG 19 (4) 365-367
11	1986	John C. Davis	MG 20 (1) 69-71
12	1987	Michel David	NL 38, p. 1
13	1988	E. H. Timothy Whitten	MG 22 (5) 635-636
14	1989	Andre' G. Journel	MG 25 (2) 259-260
15	1990	Zhao Pengda	MG 25 (3) 419-420
16	1991	Va'clav Nemeč	MG 26 (6) 753-755
17	1992	Richard B. McCammon	MG 27 (3) 463-466
18	1993	DeVerle P. Harris	MG 27 (4) 555-558
19	1994	Dmitrii A. Rodionov	MG 29 (2) 311-313
20	1995	John Aitchison	
21	1996	Jan Harff	

FELIX CHAYES PRIZE FOR EXCELLENCE IN RESEARCH IN MATHEMATICAL PETROLOGY

A. Description

The Chayes Prize is a US\$5,000 cash award that may be used to support research in progress or provide support for new research. The prize was endowed by gifts provided in 1996 by Chayes's widow, Dr. Irene Hendry Chayes, and his sister, Mrs. Natalie C. Tenney in 1997. At the meeting of the IAMG's General Assembly during the XXX International Geological Congress in Beijing in 1996, a memorial in honor of Felix Chayes was approved. Each recipient is to receive an engraved plaque bearing the recipient's name.

Felix Chayes was born in New York City on May 10, 1916. In 1932 he entered New York University with the intention of eventually studying law, but as an undergraduate he decided to switch to geology as a field of study, receiving a BA in geology in 1937 at New York University. For graduate work in geology, he transferred to Columbia University, where he received an MA in 1939 and PhD in 1942. After short stints as chemist for Gillis & Pawel Metal Company in North Carolina in 1941, and as a mineral economist with the War Production Board in Washington, DC, in 1941 and 1942, Chayes served as a chemical petrographer with the US Bureau of Mines at College Park Station in Maryland until 1946. After spending a year as petrographer for the Manhattan Project at the Massachusetts Institute of Technology, Chayes moved in 1947 to the Geophysical Laboratory of the Carnegie Institution in Washington, where he remained until his official retirement in 1986. At the Carnegie Institution, he focused on applications of statistics to the understanding of igneous processes and the classification of igneous rocks. Chayes worked tirelessly in several projects, including the development of the Igneous Geochemical Data Base (IGBA), which was begun in 1977. Following retirement, he continued to be involved with IGBA until his death in February, 1993 following an automobile accident the previous month near his home in Kensington, Maryland. He received the Krumbein medal in 1984.

B. Guidelines

1. Search for nominees shall be done internationally through the IAMG Newsletter and other appropriate publications.
2. Nominations for the Chayes Prize should be submitted to the Chairman of the Awards Committee and accompanied by descriptions of research in progress, or research that might be undertaken or extended following receipt of the prize. While an individual recipient may receive the prize, a research team also may be a recipient.
3. The recipient or senior team member must be at least five years past the doctorate and have publications relevant to the field of the Chayes Prize as evidence of achievement up to the time of the award.
4. The recipient or senior team member must be between the ages of 35 and 60. Membership in IAMG is expected but is not a requirement.
5. The Awards Committee members shall evaluate all nominees based on information reaching the Committee, which shall be condensed to numerical scores.
6. Each recipient is expected to attend the meeting where the prize is presented, with reasonable travel expenses provided by IAMG, thereby making the cash prize available in its entirety to the recipient. If awarded to a team, the Association shall pay travel expenses for one team member who serves as the representative of the team.
7. The recipient is expected to present a paper at the meeting that is concerned with the research cited in presentation of the prize.
8. Use of funds supplied by the prize is left to the judgment of recipients, who need not account to the Association. Funds attached to the prize may be paid directly to an individual recipient. If awarded to a team, the funds may be presented to the team's institution for use by the team. Funds for the prize are derived from earnings of the Chayes endowment.
9. The Chayes Prize is presented on an alternate-year basis with the Krumbein Medal.
10. Announcement about the recipient will be published in the proceedings of the annual conference where the presentation is made, and in *Computers & Geosciences*.
11. A copy of the announcement will be kept on the IAMG web site until the next recipient is

chosen.

C. RECIPIENTS

Recipients, year of nomination, and announcement in *Computers & Geosciences* are:

- 1 1996 Subcommission on Data Bases in Petrology

JOHN CEDRIC GRIFFITHS TEACHING AWARD

A. Description

The John Cedric Griffiths Teaching Award is a plaque with the recipient's name and date. An award in memory of John Griffiths was approved by the General Assembly during the XXX International Geological Congress, Beijing, 1996. Each recipient is to receive an engraved plaque and an inscribed technical book of the recipient's choice for a value not to exceed the equivalent of US\$350 in 1998.

Griffiths was the first recipient of the Krumbein medal. Born in Llanelli, Wales, in 1912, he received a BSc in 1933, MSc in 1934, and PhD in 1937, all in petrology at the University of Wales. In 1940, he received the Diploma of the Imperial College in petrography and a PhD in petrography from the University of London. In 1947, after working for seven years with the Trinidad Leaseholds Ltd. in the British West Indies, he joined the faculty of the Pennsylvania State University. He stayed there until his retirement in 1977, deeply influencing hundreds of students. He died on June 2, 1992, at State College, Pennsylvania. Besides his well-known text "Scientific Methods in Analysis of Sediments", he published more than 100 articles. Griffiths pioneered the application of quantitative methods in a wide spectrum of geological and economic problems.

B. Guidelines

1. The Awards Committee will invite nominations in the IAMG Newsletter and other appropriate places early in the year following the nomination year.
2. Nominations shall include both a resume and a short statement summarizing the most relevant qualifications of the nominee. They should be submitted to the Chairman of the Awards Committee.
3. Age, IAMG membership, or academic status are not conditions, so teachers at universities, colleges, high schools and preparatory schools, elementary schools, and in private practice may be considered.
4. The Awards Committee members shall evaluate all nominees based on information reaching the Committee, which shall be condensed to numerical scores.
5. Each recipient is expected to attend the meeting where the prize is awarded, and to present a paper concerned with advances in teaching or research training.
6. Reasonable travel expenses to attend the meeting shall be provided by IAMG.
7. The Griffiths Award is presented in the same year as the Krumbein Medal.
8. Announcement about the recipient will be published in the proceedings of the annual conference where the presentation is made, and in *Computers & Geosciences*.

9. A copy of the announcement will be kept on the IAMG web site until the next recipient is chosen.

C. RECIPIENTS

Medalists, year of nomination, and place of announcement in *Computers & Geosciences* are:

1 1997 John H. Doveton

ANDREI BORISOVICH VISTELIUS RESEARCH AWARD

A. Description

This award honors young scientists of age 35 or less for outstanding research contributions. The award was established in 1980 during the XXVI International Geological Congress in Paris following the announcement that Vistelius was the fifth Krumbein medalist. Because of difficulties to honor Vistelius while still alive, the General Assembly named the award the President's Prize as a temporary solution. After his death in 1995, the General Assembly, meeting in 1996 during the XXX Geological Congress in Beijing, renamed the award as originally intended. Before this change the prize was presented annually. Recipients receive a plaque bearing the recipient's name and a copy of an inscribed book relevant to his or her research interests for a value not to exceed the equivalent of US\$350 in 1998.

Vistelius was born on December 7, 1915, in Petrograd, which was later named Leningrad and is now Saint Petersburg. Vistelius graduated as a mineralogist from the University of Leningrad in 1939 and continued there until defending his thesis in geology and mineralogy in 1942. At 32, an early age by Soviet standards, the Moscow Institute of Petroleum awarded him a DSc degree in geology. From 1942 to 1946 he was senior petrologist for the All-Union Petroleum Institute, and from 1946 to 1950, he was director of the Branch of Operating Methods of the same institute. He served as director of the Laboratory of Mining and Geology of the All-Union Salt Institute from 1950 to 1952. From 1952 to 1961, Vistelius was senior scientist at the Laboratory of Aerial Methods of the Academy of Sciences of the USSR. From 1961 until his death, he was the director of the Group of Mathematical Geology, and later of the Laboratory of Mathematical Geology in Leningrad, both under the aegis of the Order of Lenin V. A. Steklov Mathematical Institute of the Academy of Sciences of the USSR. Vistelius was a prolific scientist and virtually all geological subjects attracted his interests, which involved the introduction of mathematical and stochastic methods to handle geological problems.

B. Guidelines

1. The Awards Committee will invite nominations in the IAMG Newsletter and other appropriate places early in the year to select the recipient for the previous year.
2. Recipients may be no more than 35 years of age at the time of selection.
3. Nominations shall include both a resume and a short statement summarizing the most relevant qualifications of the nominee. They should be submitted to the Chairman of the Awards Committee.
4. The recipient need not be a member of the IAMG.
5. The Awards Committee members shall evaluate all nominees based on information reaching the Committee, which shall be condensed to numerical scores.

6. Each recipient shall be invited to present a paper at the meeting where the award is presented, with reasonable travel expenses provided by the Association.
7. The Vistelius Award is presented in the same year as the Chayes Prize, and on an alternate year basis with the Krumbein Medal and the Griffiths Award.
8. Announcement about the recipient will be published in the proceedings of the annual conference where the presentation is made, and in *Mathematical Geology*.
9. A copy of the announcement will be kept on the IAMG web site until the next recipient is chosen.

C. RECIPIENTS

Recipients of the award, their year of nomination, and place of announcement in *Mathematical Geology* are:

1	1981	John M. Cubitt
2	1982	Stephen Henley and William E. Full
3	1983	Brian Jones
4	1984	Michel Rabinowicz
5	1985	Georges Verly
6	1986	Marek Kacewicz
7	1987	James R. Carr
8	1988	Andrew R. Solow
9	1989	Olivier Dubrule
10	1990	Guocheng Pan
11	1991	Georges Christakos
12	1992	Ute C. Herzfeld
13	1993	R. Mohan Srivastava
14	1994	Clayton V. Deutsch
15	1995	Qiuming Cheng
16	1997	Gerardus Johannes Weltje