INTERNATIONAL ASSOCIATION FOR MATHEMATICAL
GEOLoGY
Council Members and Officers, 1989 - 1992

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Newsletter: James R. Carr/168
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fax: 702-784-1766
1. KRUMBEIN MEDALIST: Dr. Andre Journel

2. NEVADA MEDALIST: Dr. Benoit Mandelbrot

3. 1988 PRESIDENT'S PRIZE: Dr. Andrew Solow

4. Newsletter Publication Deadlines
5. ASA Section on Statistics and Environment
7. Nominations Requested
8. Report and Notes from Western Treasurer
9. Articles for 1st Issue of New Journal
10. Short Course on GIS
11. A Survey to be Completed
12. Student Travel Awards
13. Attention: Respond to Merriam
14. Forthcoming Articles
15. IAMG Signs new Contract
16. IAMG President Appoints Organizing Committee
17. Travel Grant for IGC
18. Editorial: Adventures in the Carpal Tunnel

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2. Avoiding Carpal Tunnel Syndrome
3. Geoscience Information Group Constitution
4. Excerpt from 1991 Upcoming Pribram
5. First Circ., Symp. on Data An. and Comp. Tech.
6. GIS Short Course Info.
7. SIAM Conferences
8. Gibbs Associates Announcements
9. International Mineralogical Assoc. Survey
1989 KRUMBEIN MEDALIST

DR. ANDRE G. JOURNEL

Andre G. Journel

Dr. Andre G. Journel is the recipient of the 1989 Krumbein Medal, awarded by the International Association for Mathematical Geology. In his letter to Andre notifying him of his selection for the award, IAMG President, Richard B. McCammon wrote, "After your long association with the development and growth of geostatistics worldwide and your sustained outstanding contributions in this field, it is indeed fitting and proper that you have been selected as the Krumbein Medalist for 1989. It is both a personal pleasure and privilege for me to notify you of this honor, and to be the first to congratulate you."

Andre received his Baccalaureate degree in mathematics in 1961 from Lycee Ampere, Lyon-France; in 1967, he earned his degree in Civil Mining Engineering from Nancy Mining and Metallurgical School, France. In 1974, he was awarded an Engineer Doctorate in economic geology from the University of Nancy, France. Later, he earned a Docteur-es-Sciences in Applied Mathematics in 1977 from the University of Nancy, France; from the work toward this degree emerged his book: Mining Geostatistics, published in 1978 by Academic Press, the best and most comprehensive book written to date on geostatistics [editor's opinion].

Andre joined Stanford University, California (USA) in 1978, as an associate professor in the Department of Applied Earth Sciences; there, he developed an extremely successful graduate and research program in geostatistics. In 1986, he was promoted to full professor and coincidentally appointed chair of the department. In 1988, the Stanford Center for Reservoir Forecasting, a program supported by 24 oil-related companies, was formed and Andre was appointed its director. His career is one of astonishing success.

In the past two decades, Andre has been the unquestioned leader in research expanding our knowledge on applied geostatistics and development of nonparametric geostatistical methods. Perhaps most importantly, he never hesitates to help individuals with problems involving geostatistics, either in practice or in research.
On March 20, 1991, Dr. Benoit B. Mandelbrot became the fourth recipient of the Nevada Medal. This medal is sponsored by Nevada Bell and includes a $5,000 prize. It is awarded annually in recognition of outstanding achievements in science and engineering. Nominations are received nationwide from universities, industrial research groups, government agencies and individuals. Mandelbrot received the silver medallion from Nevada governor, Robert Miller, Desert Research Institute (DRI) President, Dr. James V. Taranik, and Nevada Bell President, Robert Blanz, in formal ceremonies held in Reno, Nevada (USA).

Mandelbrot gave two presentations in association with his receipt of the Nevada Medal, one at the University of Nevada, Las Vegas, the other at the University of Nevada, Reno, each entitled, "Fractals: For the Pleasure of the Eye and the Pleasure of the Mind." A luncheon was held for Mandelbrot on the UNR campus, attended by UNR President, Dr. Joseph Crowley, DRI President, Dr. James Taranik, UNR Vice President for Research, Dr. Kenneth Hunter, DRI Vice President for Research, Dr. William Bishop, UNR Acting Vice President for Academic Affairs, Dr. William Cathey, and IAMG Newsletter Editor, Dr. James Carr.
1988 PRESIDENT’S PRIZE

DR. ANDREW R. SOLOW

In the last issue of the Newsletter, a feature on Dr. Andrew Solow, 1988 recipient of the IAMG President’s Prize, was promised. It is fitting that a tribute be made to Dr. Solow in this issue because his Ph. D. advisor was Dr. Andre Journel, who is featured in this issue as the recipient of the 1989 Krumbein Medal.

Dr. Solow earned his Bachelor of Arts degree in economics from Harvard University (Cambridge, Massachusetts, USA) in 1977. Subsequent to this degree, he earned a Master of Science in geomathematics from Stanford University in 1981. Later, he earned his Ph. D. in geostatistics from Stanford University in 1985 with the dissertation, Kriging Under a Mixture Model.

In recent years, Dr. Solow has been highly active in research related to global climate change. He is a member of the Climate Trends Panel, established by the National Climate Program Office. He is also a member of the Scientific Working Group of the Intergovernmental Panel on Climate Change established by the United Nations Environmental Program and the World Meteorological Organization.

Since earning his doctorate in 1985, Dr. Solow has published more than thirty articles in peer-reviewed journals, a phenomenal publication record. These journals include Mathematical Geology, Journal of Climate, Climatic Change, and Journal of Mathematical Biology. Dr. Andrew Solow is currently a statistician with Woods Hole Oceanographic Institution, Woods Hole, Massachusetts (USA).

NEWSLETTER PUBLICATION DEADLINES

The IAMG Newsletter is published biannually, with target mailing dates in October and March. To assure publication in a particular issue of the Newsletter, please send material to me by the following deadlines:

For the October issue: August 15
For the March issue: February 1

To help me in preparing each issue, if you word process your submission, please send me a diskette if your file is MS-DOS compatible and WordPerfect 5.1 compatible. I am always grateful for information for the Newsletter [editor's comment].

AMERICAN STATISTICAL ASSOCIATION’S
SECTION ON STATISTICS AND ENVIRONMENT

Because of the interest of many societies and associations in environmental issues, there have often been special sessions devoted to this important topic at a wide variety of regional and national conferences. The ASA’s section on Statistics and the Environment would welcome the opportunity of co-organizing conference sessions on environmental issues or interacting in other professional ways with the IAMG. For more information, please contact ASA representative:

Noel Cressie
Department of Statistics
Iowa State University
Ames, IA 50011 USA
Phone: (515)-294-3440
FAX: (515)-294-4040
e-mail: S1.NAC@ISUMVS.BITNET

FIRST CIRCULAR

SYMPOSIUM ON DATA ANALYSIS AND COMPUTER TECHNOLOGY AND THEIR APPLICATION FOR GEOCHEMISTRY AND GEOENVIRONMENTAL RESEARCH

Toward the end of this Newsletter (please see the Table of Contents), please find the complete circular for this meeting. I apologize for not retyping this circular (please see my Editorial). If this circular is illegible, please contact the following address:

SYMPOSIUM ORGANIZING COMMITTEE
Naukova str. 3a,
290053,
Lviv - 53, Ukraine

NOMINATIONS REQUESTED

It’s time once again to select a slate of Officers and Council members for IAMG. Richard B. McCammon, IAMG President, has appointed a Nominating Committee consisting of J.H. Schuenemeyer, Chair, R.M. Renner, and W.E. Sharp to prepare a list of candidates for the Offices of President, Vice-President, Secretary General, Eastern Treasurer, Western Treasurer, and six Councillors. Please send your nominations to:

Jack Schuenemeyer
Department of Mathematical Sciences
University of Delaware
Newark, DE 19716 (USA)
e-mail: jacks@bruhms.udel.edu

Please send nominations by December 15, 1991. Ballots will be sent to IAMG members by March, 1992. Voting can be by mail (prior to August, 1992), or in person at the International Geologic Congress in Kyoto, Japan, where the election will be held.
REPORT FROM THE WESTERN TREASURER

John Kork has prepared the following report:

**International Association for Mathematical Geology**

**STATEMENT OF REVENUE AND EXPENSES -- CASH BASIS**

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GROSS REVENUE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership dues/books</td>
<td>34,550</td>
<td>26,337</td>
</tr>
<tr>
<td>Royalties from Pub.</td>
<td>71,211</td>
<td>9,397</td>
</tr>
<tr>
<td>Interest Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking/Money Mark.</td>
<td>4,011</td>
<td>2,164</td>
</tr>
<tr>
<td>U.S. Treasury Notes</td>
<td>815</td>
<td>---</td>
</tr>
<tr>
<td>Short-term world income funds</td>
<td>716</td>
<td>---</td>
</tr>
<tr>
<td>GNMA-series E, J and accumulation trust</td>
<td>357</td>
<td>340</td>
</tr>
<tr>
<td>Dividend income - U.S. government securities</td>
<td>4,002</td>
<td>3,667</td>
</tr>
<tr>
<td><strong>Total gross revenue</strong></td>
<td><strong>115,642</strong></td>
<td><strong>41,905</strong></td>
</tr>
</tbody>
</table>

**GENERAL AND ADMINISTRATIVE EXPENSES**

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal subscriptions</td>
<td>28,484</td>
<td>28,018</td>
</tr>
<tr>
<td>Books for members</td>
<td>5,814</td>
<td>---</td>
</tr>
<tr>
<td>Convention booth exp.</td>
<td>---</td>
<td>6,950</td>
</tr>
<tr>
<td>Travel expenses</td>
<td>2,106</td>
<td>3,309</td>
</tr>
<tr>
<td>Meetings</td>
<td>4,421</td>
<td>794</td>
</tr>
<tr>
<td>Membership promotion</td>
<td>2,876</td>
<td>---</td>
</tr>
<tr>
<td>Postage</td>
<td>995</td>
<td>707</td>
</tr>
<tr>
<td>I.A.M.G. stickers</td>
<td>---</td>
<td>462</td>
</tr>
<tr>
<td>Supplies and printing</td>
<td>898</td>
<td>178</td>
</tr>
<tr>
<td>Newsletter</td>
<td>6,010</td>
<td>195</td>
</tr>
<tr>
<td>Legal and accounting</td>
<td>510</td>
<td>165</td>
</tr>
<tr>
<td>Investment expenses and bank charges</td>
<td>318</td>
<td>30</td>
</tr>
<tr>
<td>Application fee - tax exemption</td>
<td>300</td>
<td>---</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>104</td>
<td>---</td>
</tr>
<tr>
<td><strong>Total gen. and admin. expenses</strong></td>
<td><strong>52,836</strong></td>
<td><strong>41,008</strong></td>
</tr>
</tbody>
</table>

**EXCESS REVENUE OVER EXP.** | **62,806**<br>**897**

**BALANCE SHEET -- CASH BASIS**

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash in checking</td>
<td>$ 723</td>
<td>$ 37,904</td>
</tr>
<tr>
<td>Cash in money market</td>
<td>47,120</td>
<td>188</td>
</tr>
</tbody>
</table>

**OTHER ASSETS**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments - at market value:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. govt. secur.</td>
<td>51,702</td>
<td>48,287</td>
</tr>
<tr>
<td>Short-term world income funds</td>
<td>30,306</td>
<td>---</td>
</tr>
<tr>
<td>U.S. Treas. Notes</td>
<td>20,700</td>
<td>---</td>
</tr>
<tr>
<td>GNMA unit trust accum.</td>
<td>2,161</td>
<td>1,890</td>
</tr>
<tr>
<td>GNMA series E</td>
<td>776</td>
<td>909</td>
</tr>
<tr>
<td>GNMA series J</td>
<td>432</td>
<td>456</td>
</tr>
<tr>
<td><strong>Total, other assets</strong></td>
<td><strong>106,977</strong></td>
<td><strong>51,532</strong></td>
</tr>
</tbody>
</table>

**TOTAL ASSETS** | **153,920**<br>**89,634**

**LIABILITIES AND FUND BALANCE**

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance at beginning of year</td>
<td>89,634</td>
<td>86,238</td>
</tr>
<tr>
<td>Net unrealized gain (loss) during the year on non-current invest. see accompanying note</td>
<td>1,480</td>
<td>2,499</td>
</tr>
<tr>
<td>Excess of revenue over expenses, for year</td>
<td>62,806</td>
<td>897</td>
</tr>
<tr>
<td><strong>Balance at end of year</strong></td>
<td><strong>153,920</strong></td>
<td><strong>89,634</strong></td>
</tr>
</tbody>
</table>

**NOTES FROM WESTERN TREASURER**

1. Members are advised to use my full address on correspondence. The Denver Federal Center is a large facility, and mail can go astray without the proper address. In one case, a renewal notice was sent to the wrong mail stop, and was forwarded to me only after a four month long exchange of letters with the bank in Germany issuing the enclosed check. The full address is:

**INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY**

Dr. John O. Kork, Western Treasurer

U.S. Geological Survey, Mail Stop 937

Box 25046, Denver Federal Center

Denver, CO 80225-0046 USA

2. The SWIFT (Telex) method of dues payment has not worked out very well. First, there are significant bank charges on both ends of the transaction which, because we only charge one dollar more for subscriptions than our cost, cause us to lose money on every subscription. In one instance, we received only $17.00 from a $30.00 payment. Second, I have received a number of cards indicating that a SWIFT transfer was being used, but no transfer ever arrived at my bank. In these cases, I must write to the senders to try to find out what happened, and in no case so far have I succeeded in finding out. Third, the Telex message accompanying some deposits does not identify who the sender was and I have to try to find out through the bank, often unsuccessfully. Unfortunately, the source countries and amounts of the unexplained deposits seldom match those of the cards without corresponding transfers.

3. The delivery of replacements for lost copies of Mathematical Geology has been, at best, erratic so far this year. Plenum Publishing Company recently moved its distribution center. The warehouse was closed for a few weeks and thus has been backlogged with shipments. Also, some of the new data entry operators seem to be poorly trained at present. Rather than send the replacement copies to the subscriber, they send them to me with no indication of which of my correspondence they are addressing. Hence, I have no idea to whom they are to go, and I just send them back and hope for the best. The publishers say to allow 4 to 6 weeks from the date of their notification for delivery of replacement copies, and I usually forward my notification to them within 2 weeks receipt. Please notify me promptly if your replacement copies have not been delivered.

4. I have received requests for missing copies of journals for as far back as one and one-half years from the date of issue. The publishing companies have so far accommodated these requests but have been advising me that they usually send replacement copies for only six months from the date of issue. Again, please notify me promptly if replacements are needed.

5. The 1990 IAMG financial statements as reviewed by the public accounting firm of Serr, Shanks, Stumm, & Mittelstaedt are printed in this Newsletter. I feel that the cash flow and assets are large enough to justify review by a professional accountant in order to verify that proper business procedures have been used in handling the money. The excess of income over expenses for 1990 is a one-time windfall because this year we received journal royalties for two previous years.
ARTICLES SET FOR FIRST ISSUE
OF NEW IAMG JOURNAL

The manuscripts for the first issue of IAMG's new journal on Nonrenewable Resources are now in hand. The contents of Volume 1, Number 1, to appear in February, 1992, follow:

Editor's Introduction
Directions
Prologue, L.J. Drew
Forum
Panel discussion on energy and mineral resource assessments -- How are they done? Who are they for? How effective are they?, by F.P. Agterberg, R. Eggert, J.C. Griffiths, T. Offield, S. Plotkin, and D.A. Singer

Articles
Combination of indicator patterns in weights of evidence modeling for resource evaluation, F.P. Agterberg


A petroleum discovery rate forecast revisited--The problem of field growth, L.J. Drew and J.H. Schuenemeyer

A treatise on the use of geostatistics for the characterization of nonrenewable resources, J.R. Carr

Quantitative assessment of mineral resources with an application to petroleum geology, J. Harff, J.C. Davis, and R.A. Olesi

A mineral potential classification that supports land-use policy decisions in British Columbia, Canada, G.P. McLaren

A generalized multivariate resource model, D.P. Harris

Book Reviews

Economic evaluations in exploration, by Wellmer, F., reviewed by W. Szymanski


IAMG members are encouraged to subscribe and to contribute to the new journal. Details about annual subscriptions will be included in this year's dues notice. Guidelines to contributors for the new journal were included in the March 1991 IAMG Newsletter. Anyone wishing to submit a manuscript should send it to:

Editor, Nonrenewable Resources
P.O. Box 34600
Bethesda, Maryland 20827 U.S.A.

SHORT COURSE ON MINERAL POTENTIAL MAPPING WITH GIS

A 5-day Short Course entitled Mineral Potential Mapping With GIS will be offered at the University of Ottawa, November 11-15, 1991. The principal lecturers will be Drs. Graeme Bonham-Carter and Frits Agterberg from the Geological Survey of Canada, both Adjunct Professors in the Geology Department.

The course will cover methods of using Geographic Information Systems to integrate regional datasets for assessing mineral potential. The emphasis will be on the use of models for combining maps and the implementation of these models in a GIS environment.

Some of the approaches to be discussed include:
--- Subjective weighting
--- Bayesian weights of evidence
--- Weighted logistic regression
--- Prospector-type inference networks

An important feature of the course will be the computer exercises that will be interspersed with each lecture. SPANS GIS (Version 5) running on 386 and 486 PCs under OS/2 will be used, with no more than 4 participants assigned to each system. Applications will mainly be to gold mineralization in Nova Scotia and base-metals in Manitoba.

The principal focus will be metallic mineral assessment, of interest to managers, geologists, and computer specialists working in the field of mineral exploration or resource assessment. The methods may also be of interest for oil exploration, environmental impact and hazard assessment.

Participants are invited to bring digital datasets of their own. Although a background in digital mapping and quantitative methods will be an advantage, no prior GIS experience will be assumed. The course costs $1,500 Canadian. For further information and registration, write to:

GIS Short Course
Department of Geology
University of Ottawa
770 King Edward
Ottawa, Ontario, K1N 6N5 Canada
phone: (613) 564-3480
FAX: (613) 564-9916.

Note: please find the photocopy of the complete brochure for this Short Course at the end of this Newsletter.

A Survey to be Completed

Toward the end of this Newsletter, a survey of computer software appears; this survey is prepared by the International Mineralogical Association, Working Group on Databases and Computer Applications. Even if you receive the Newsletter after the October 1 deadline for mailing the survey, please complete it and mail it anyway.

Also Toward the End of the Newsletter:

1. A listing of SIAM Conferences, Meetings, Symposia, Tutorials, and Workshops;
2. The program for the 1991 Pribram, Czechoslovakia meeting;
3. Information items from Betty Gibbs and Associates.
STUDENT TRAVEL AWARDS

Item Submitted and Written by Dr. C. John Mann

The International Association for Mathematical Geology is pleased to announce that an annual travel award has been established to assist students in attending an IAMG sponsored meeting at which they will present orally a scientific paper. The rules under which the award will be granted by the Student Award Committee are those stated below:

Rules

1. The Student Award shall be made to a student who has submitted, or will submit, a scientific paper for oral presentation, and its subsequent acceptance for presentation by the Technical Committee, for any IAMG sponsored meeting.
2. Candidates for an award will be students at recognized tertiary educational institutions (advanced undergraduates and graduate level), or who have graduated from such institutions not more than 12 months prior to the meeting at which the paper is being presented.
3. The Student Award Committee will use the following materials, submitted by each candidate, to select the winner(s):
   a) written material that demonstrates originality and innovation in Mathematical Geology (not mathematics, computer science, geology, etc.);
   b) at least one letter of recommendation from any member(s) of the scientific community involved in mathematical geology, stating why the candidate is worthy of the award; and
   c) a curriculum vita (maximum of one page).
4. Written material submitted by the candidate should conform to the format of manuscripts submitted for publication to MATHEMATICAL GEOLOGY. Five copies should be submitted to the Chairman, Student Award Committee. (Currently, the Chairman is: Professor C. John Mann, Department of Geology, University of Illinois, Urbana, Illinois 61801 USA). Submissions of material for Committee consideration should be made as early as possible before the meeting, but in no case later than nine months before the meeting; winners will receive notice at least three months before the meeting.
5. The award will be made for transportation expense only from the home of the winner to the location of the IAMG meeting. If the Award Committee wishes, two or more awards may be granted in one year; however, the total amount awarded each year will not exceed $1,000 (US).

ATTENTION

This Newsletter contains considerable information about the 29 International Geological Congress. Papers are much needed for Symposium 2, Session 22-3 on Mathematical and Statistical Analysis of Geological Data, an IAMG Session. If you wish to submit a paper to this session, or plan to, please inform Dan Merriam as soon as possible:

Dan Merriam
Stratigraphic Studies Group
Box 153
Wichita State University
Wichita, KS 67208

FORTHCOMING ARTICLES

MATHEMATICAL GEOLOGY

&

COMPUTERS & GEOSCIENCES

In past issues of this Newsletter, sections entitled Forthcoming Articles, were presented for both Mathematical Geology and Computers & Geosciences.

The purpose of these sections was to inform readers of journal content, acknowledging that not all IAMG members receive both journals.

Rather than informing you of forthcoming articles, beginning with the March, 1992 edition of the Newsletter, a list of articles for the entire previous year will be presented for both journals. In this way, you will have information for journal content for both journals.
IAMG signs contract with Oxford Press for 4th Studies in Mathematical Geology Monograph Series

On June 26, 1991, IAMG signed a contract with Oxford University Press to publish the 4th in IAMG’s monograph series. The title of the monograph is "Techniques for Determining Probabilities of Geologic Events and Processes: A Review." The editors of the monograph are Regina Hunter, Sandia National Laboratories (USA), and C. John Mann, University of Illinois. The monograph is a review of much of the efforts of a large number of geoscientists from many disciplines who were contracted to study the problem of estimating probabilities associated with the long-term storage of radioactive materials in natural repositories. The monograph will be published in early 1992. The good news is that IAMG members will be able to order the monograph at reduced rates. The member's price will appear in this year's dues notice.

IAMG President McCammon Appoints Organizing Committee for 25th Anniversary Meeting in Prague

IAMG President Dick McCammon has appointed Vaclav Nemec, Dan Merriam, Michal Hoehn, John Kork, Fritz Agterberg and Peter Dowd to serve on the Organizing Committee for IAMG's 25th Anniversary Meeting to be held in 1993 in Prague, Czechoslovakia (where it all began in 1968). The Organizing Committee will get together at the upcoming Pribram meeting in October to begin planning the meeting in earnest. If you have ideas or suggestions you would like to offer about the meeting, please get in touch with one of the Committee members. Next to the IGC, this is a meeting every IAMG member should plan to attend.

A Reorganization for UK Geoscience Group

The IAMG affiliate in the United Kingdom has been known as the Geological Information Group. Because the word, "geological" was thought to be too limiting, the group changed its name to Geoscience Information Group. Their new constitution is reproduced toward the end of this Newsletter.

Travel Grant Program

29th IGC in Kyoto, Japan—1992

The Geological Society of America is accepting applications for the 29th International Geological Congress (IGC) Travel Grant Program.

This program was established as a final act of the Organizing Committee for the U.S.-hosted 28th IGC held in Washington D.C., in July 1989. Surplus funds available at the conclusion of the 28th IGC were transferred to the GSA Foundation with the stipulation that income from the fund be used to support the attendance of young geoscientists to future IGCS, until such time as the United States again hosts an IGC. Travel grants will consist of economy airfare to Japan and prepayment of the registration fee.

To be eligible, an applicant must be a resident or citizen of the United States (includes students); must have a birth date after August 31, 1952; and must have submitted an abstract for inclusion in the program of the 29th IGC.

Official application forms are available from the Grants Coordinator, GSA Headquarters, 3300 Penrose Place, P.O. Box 9140, Boulder, CO 80301. Along with the form, applicants must include a copy of the abstract that was submitted to the 29th IGC. Applications must be supported by two letters from current or recent supervisors. Students may use faculty members. Qualifying applications and letters of support must be postmarked no later than October 31, 1991. Applicants will be notified of results early in 1992.

EDITORIAL: ADVENTURES IN AND AROUND THE CARPAL TUNNEL

As professionals involved with data analysis, we tend to spend considerable time on the computer. I once spent between five to seven hours per day working on the computer. Now, I cannot use the keyboard as much. Before, I never paid much attention to the movements my fingers were making on the keyboard. To this end, I never considered the keyboard to pose a health hazard. Alas, but it does!

Computer users face an affliction known as carpal tunnel syndrome. The carpal tunnel is formed by the bones of the wrist and a dense ligament which passes over them. The tendons, which flex the fingers, pass through this tunnel from the muscles located in the region of the forearm to the bones that form the fingers. The median nerve, which brings electrical impulses to the muscles at the base of the thumb and also carries the sensations from the thumb and first three fingers, likewise passes through this same structure. When overuse causes the tendons to become inflamed and swollen, they press on the nerve. The result: intense pain and numbness of the thumb and fingers. The cure: a minor case can be cured by discontinuing work on the computer for a time and taking minor pain medication (acetaminophen [Tylenol]) is recommended because aspirin and ibuprofen can cause stomach trauma. A major case requires surgery, recovery from which can take six weeks. [The majority of this paragraph was taken directly from a nationally (USA) syndicated newspaper article by Allan H. Bruckheim, "Skidding Through the Mysterious Carpal Tunnel].

Last May, I was gravely concerned that I had a major case of carpal tunnel syndrome. Beginning one year ago, I began to notice a pain in my wrist which was manifested only when I attempted to put pressure on my hand, palm down on a surface (such as when doing push-ups). By last May, however, the pain was active. In early July, a short course on earth science for high school teachers began; I am the instructor for this course. I found on the first day of lecture that I was not able to hold the chalk. The next day, I visited my doctor. The affliction I had was not carpal tunnel syndrome; for instance, I did not have numbness in my thumb or fingers. The affliction was, instead, a metacarpal boss, a growth on one of the bones in my wrist. I was treated with an injection of steroids directly into the growth [You talk about pain!] Within one week, most of the pain disappeared. I have noticed in working on this issue of the Newsletter, though, that I am susceptible to pain in the back of the hand, and I tire quickly, with a great deal of tension in the tendons of my right arm from my wrist to my elbow.

A metacarpal boss is also caused by working on the computer; the growth occurs because of the repeated trauma of the finger hinges banging at the keyboard when the arms and wrist are placed in an incorrect posture.

If you spend a considerable amount of time on the computer, please do the following:

a. Once per hour, stop work, raise your arms above your head, and flex your hands for several minutes;

b. While working on the computer, your arms should be parallel with the floor; moreover, the base of your palms should be resting on a pad placed at the lower edge of the keyboard (below the space bar);

c. If you notice any pain in your wrist, palm, or back of the hand, please see a doctor at once. If you notice any numbness, certainly see a doctor immediately; carpal tunnel syndrome, in the extreme, will cause a permanent loss of the use of a hand.

d. Please read the article included in this issue entitled, "Avoiding Carpal Tunnel Syndrome: a guide for computer keyboard users."

James R. Carr/168
University of Nevada, Reno
Reno, NV 89557-0138 USA
29th
INTERNATIONAL GEOLOGICAL CONGRESS
KYOTO JAPAN
24 AUG. – 3 SEPT. 1992
Second Circular
## SCHEDULE

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<th>Subject</th>
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### August 1992

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*Cover picture: Fuji-san, a woodcut print by famed Hokusai around 1832.*

*Issued at Tsukuba, February 1991*
Scientific Freedom Policy Statement

The Organizing Committee of the 29th International Geological Congress shall observe the basic policy of non-discrimination and affirms the rights of scientists throughout the world to adhere to or associate with international scientific activity without restrictions based on nationality, race, color, age, religion, political philosophy, ethnic origin, citizenship, language, or sex, in accordance with the Statutes of the International Council of Scientific Union.

The Organizing Committee endorses the concept of the universality of science and records its belief that coherent scientific communities, located within definable geographic areas, should not be prevented from participation in scientific activities because of unresolved political issues.

Send registration form contained in this Second Circular, along with all payment due, to:

29th IGC  
Kasho Bldg. 2F, 2-14-9  
nihonbashi, Chuo-ku, Tokyo 103 Japan

Telephone: 81-3-3272-7981  
Telefax: 81-3-3273-2445

Correspondence: Abstract, all other inquiries and general correspondence concerning the Congress should be addressed to:

29th IGC  
P.O. Box 65  
Tsukuba, Ibaraki 305 Japan

Telephone: 81-298-54-3627  
Telefax: 81-298-54-3629  
Telex: 3652511 GSJ J
SECOND CIRCULAR

GENERAL INFORMATION

Place and Date

The Organizing Committee of the 29th International Geological Congress (IGC), organized by the Science Council of Japan, in collaboration with and under sponsorship of the International Union of Geological Sciences (IUGS), has the honor of inviting you to participate in the

29th SESSION OF THE INTERNATIONAL GEOLOGICAL CONGRESS IN THE KYOTO INTERNATIONAL CONFERENCE HALL FROM 24 AUGUST TO 3 SEPTEMBER 1992

The Congress site, Kyoto International Conference Hall, is located in the northern part of Kyoto City, the ancient capital of Japan.

Committees and Organizations

Chairman of the 29th Session of the IGC
Kiyoo Wadati, Japan Academy

Vice-Chairmen of the 29th Session of the IGC
Masamichi Fujimori, Sumitomo Metal Mining Company
Ryohei Takahashi, President, Kyushu University

Organizing Committee
President: Tadashi Sato, University of Tsukuba
Secretary General: Shunso Ishihara, Geological Survey of Japan
Deputy Secretary General: Eiichi Honza, Geological Survey of Japan
Treasurer: Yoshihiko Shimazaki, Nikko Exploration and Development Company

Committee Chairmen
Scientific Program: Ikuo Kushiro, University of Tokyo
Field Trips: Kanenori Suwa, Nagoya University
Operations: Susumu Nishimura, Kyoto University
Vice Chairman: Kiyotaka Chinzei, Kyoto University
Publications: Yasuo Suzuki, Geological Survey of Japan
Exhibitions: Katsuhiko Mariko, Waseda University
Takuo Yokoyama, Doshisha University
Social Program: Yasuo Nogami, Kyoto University
Geohost Program: Keizo Fujii, Geological Survey of Japan

Organizing Committee

Secretary
Masafumi Arita, Yuji Endo, Jeffrey W. Hedenquist, Kisaburo Kodama, Hajime Kurusawa

Committee Members

Scientific Program:
Secretary: Minoru Utada, Shizuo Yoshida.
Steering Subcommittee: Shohei Banno, Kiyotaka Chinzei, Shunso Ishihara, Shinjiro Mizutani, Hiroshi Ohmoto, Asahiko Taira, Seiya Uyeda.

Workshops and Short Courses: Akira Hayashida, Masashi Shimizu, Minoru Utada, Takamitsu Yamanaka

Poster Sessions: Yasuo Nakamura, Fuminori Takizawa, Masayuki Torii

Members: Yoshihio Akiyama, Masataka Ando, Ken-ichiro Aoki, Shigeo Aramaki, Keizo Fujii, Naoyuki Fujii, Toshitugu Fujii, Shinobu Hada, Hirokazu Hase, Hitoshi Hattori, Masao Hayashi, Yoshikuni

-- 1 --

Field Trips:

Secretary: Mamoru Adachi, Hirokazu Kato, Tomowo Ozawa, Kazuhiro Suzuki

Operation:

Secretary: Terufumi Ohno, Munee Hiroshima
Steering Committee: Shohei Banno, Nobuhiro Imoto, Yasuo Nogami, Tadahide Uji, Kiyoshi Wada, Takuo Yokoyama
Youth Congress: Junichi Nishida
During-Congress Field Trips: Nobuhiro Imoto, Yoshiyuki Tatsumi

Steering Committee

J. E. Armstrong Secretary General, 24th IGC
N. Bogdanov Secretary General, 27th IGC
R. Brett Secretary General, IUGS
U. G. Cordani President, IUGS
C. L. Drake President, 28th IGC
A. Dukdev Secretary General, 23rd IGC
E. J. Guzman Secretary General, 20th IGC
B. B. Hanshaw Secretary General, 28th IGC
S. Ishihara Secretary General, 29th IGC
A. Renwick Secretary General, 25th IGC
B. Sangnier Deputy Secretary General, 26th IGC
T. Sato President, 29th IGC

Advisory Committee


Fund Raising Committee

Chairman
Masamichi Fujimori Chairman of Sumitomo Metal Mining Company

Yutaka Ikebe Past President, Geological Society of Japan

Kazukuri Ito Professor, Bunkyo University
Toshihiro Kakimi Special Advisor, Nuclear Power Engineering Center

Nobu Kitamura Kitamura Research Laboratory of Environmental Geology
Koji Kondoh Director, Metal Mining Agency of Japan

Noriyuki Nasu Professor, University of Air
Yasunori Nishijima Professor, Nagoya University
Kanenori Suwa Professor, Kyushu University
Ryohei Takahashi Secretary General, Japan Federation of Geological Survey Enterprise
Soichi Yajima

Secretary
Tado Arita Secretary General, Tokyo Geographical Society
Eiji Inoue Part-time Consultant, Electric Power Development Company
Kenji Kojima Professor, Kanazawa University
Shinjiro Mizutani Professor, Nagoya University
Kei Mori Professor, Tohoku University
Susumu Nishimura Professor, Kyoto University
Yasuo Nogami Professor, Kyoto University

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Tokyo Geographical Society
Geological Society of Japan
Japanese Association of Mineralogists, Petrologists and Economic Geologists
Society of Mining Geologists of Japan
Mineralogical Society of Japan
Palaeontological Society of Japan

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Clay Science Society of Japan
Crystallographic Society of Japan
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Geodetic Society of Japan
Geothermal Research Society of Japan
Japan Association for Quaternary Research
Japan Federation of Geological Survey Enterprise Association
Japan Institute of Petroleum
Japan Landslide Society
Japan Society of Civil Engineers
Japan Society of Earth Science Education
Japan Society of Engineering Geology
Japan Society for Natural Disaster Science
Japanese Association of Groundwater Hydrology
Japanese Association for Petroleum Technology
Japanese Committee for ISRM
Japanese Geomorphological Union
Japanese Society of Irrigation, Drainage and Reclamation Engineering
Japanese Society of Soil Mechanics and Foundation Engineering
Mining and Materials Processing Institute of Japan
Oceanographical Society of Japan
Remote Sensing Society of Japan
Seismological Society of Japan
Society of Exploration Geophysicists of Japan
Society of Materials Science, Japan
Society of Terrestrial Magnetism and Electricity of Japan
Volcanological Society of Japan

Conditions for Membership in the Congress

According to the Statutes of the Congress, no professional qualifications are required in order to register for the Congress. In filling the quotas for the geological excursions organized before and after the Congress, however, priority will be given to persons engaged in geological studies or in the practice of a branch of the earth sciences.

Categories of Membership

<table>
<thead>
<tr>
<th>Services provided</th>
<th>Participating member and senior member(1)</th>
<th>Non-attending member</th>
<th>Student member(2)</th>
<th>Accompanying member</th>
<th>Yout member(3)</th>
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<tr>
<td>Right to vote</td>
<td>*</td>
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<td></td>
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<tr>
<td>General Assemblies</td>
<td>*</td>
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<tr>
<td>No right to vote</td>
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<td>Scientific excursions</td>
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<tr>
<td>Receipt of scientific publications</td>
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<td>*(4)</td>
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<tr>
<td>Social and accompanying member programmes</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Souvenir gift</td>
<td>*</td>
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<tr>
<td>Youth Congress</td>
<td>*</td>
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<td></td>
</tr>
</tbody>
</table>

(1) Senior members must be able to prove that they were born before 31 July 1922.
(2) Student members must be able to demonstrate in 1992 that they are enrolled in an educational institution and are actively pursuing a degree program.
(3) Youth members must be accompanied by participating members and aged between 13 and 19.
(4) Within the limits of place available.
Registration Fee

<table>
<thead>
<tr>
<th>Date of payment</th>
<th>Until 1 February 1992</th>
<th>After 2 February 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating member</td>
<td>¥45,000</td>
<td>¥50,000</td>
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<tr>
<td>Senior member</td>
<td>20,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Student member</td>
<td>15,000</td>
<td>17,000</td>
</tr>
<tr>
<td>Accompanying member</td>
<td>18,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Non-attending member</td>
<td>15,000</td>
<td>15,000</td>
</tr>
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</table>

*Currency exchange rate as of January 1991 is US$ 1.00 = ¥135.*

Those who cannot pay by 1 February 1992 due to government financial regulations are requested to present documents certifying this fact in order to pay reduced fees after the above date.

To Register

To register, complete the enclosed registration forms (A and B) and mail it with your check or credit card information for the correct amount to:

29th IGC
Kasho Bldg. 2F, 2-14-9
Nihonbashi, Chuo-ku, Tokyo 103
Japan

Full payment must accompany registration. Please register only one member per form. Include no more than one accompanying member plus any accompanying children on the form. Photocopies of all forms are acceptable.

IGC will send you a confirmation notice listing registration fees paid as well as activities, or accommodations requested. If any changes in your registration, activities, or accommodations are necessary, all additions with accompanying check or credit card information or deletions must be made in writing to the IGC Nihonbashi Tokyo address.

<table>
<thead>
<tr>
<th>Date of request for refund</th>
<th>Before 1 February 1992</th>
<th>2 February 1992 to 1 June 1992</th>
<th>After 2 June 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating member</td>
<td>¥40,000</td>
<td>¥35,000</td>
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<tr>
<td>Senior member</td>
<td>17,000</td>
<td>15,000</td>
<td>0</td>
</tr>
<tr>
<td>Student member</td>
<td>12,000</td>
<td>10,000</td>
<td>0</td>
</tr>
<tr>
<td>Accompanying member</td>
<td>15,000</td>
<td>12,000</td>
<td>0</td>
</tr>
<tr>
<td>Non-attending member</td>
<td>12,000</td>
<td>10,000</td>
<td>0(2)</td>
</tr>
</tbody>
</table>

(1) Will be treated automatically as non-attending members.
(2) Will not be provided any refund.

Method of Payment

Congress registration fees plus the fees for field trips, short courses, workshops, youth congress, and accompanying member activities must be paid in order of payment when submitting the enclosed registration form (A and B). All payment must be in Japanese yen.

All payment must be bank transfer, bank draft or money orders in Japanese yen payable to the 29th IGC unless you pay by credit card.

Bank transfer should be addressed to:
Account Name: 29th IGC
Account Number: 0973416
Bank: Bank of Tokyo, Marunouchi Branch, 1-4-2, Marunouchi, Chiyoda-ku, Tokyo 100, Japan

If you are paying by credit card, the following cards will be accepted:
American Express, Diners, MasterCard, and VISA.

Refund Policy

Refunds of fee can be made only until 1 June 1992. After 2 June 1992, refunds cannot be made for the registration fee or any field trips, short courses, workshops, youth congress activities, or accompanying member activities.

Geohost Grant Program

Geohost is a program that will explore ways of helping to defray expenses for individual attendees in need of assistance, principally those from the developing countries.

Each applicant for the Geohost Grant Program may request a subsidy for one or more of the following:

(1) waiver of the registration fee for the Congress,
(2) provide free lodging for one day before and up to ten days during the Congress.

(3) waive the registration fee, up to ¥100,000, for one short course or workshop or field trip. Grantees wishing to attend a field trip costing more than ¥100,000 must provide the additional money from their own sources.
(4) subsidize international travel costs between home country and Japan.

The objective of the Geohost program is to enable representatives from as many regions of the world as
possible to attend the 29th IGC. Therefore, Geohost assistance will be directed primarily toward scientists from and/or working in the developing countries, including much of Africa, Asia, Eastern Europe, Oceania, and Latin America. All applicants will be judged by the following criteria: their scientific qualifications, plans for active participation in the Congress, and financial need. There are no restrictions on the age of applicants nor on the type of employer, whether government agency, academic department or institute, or private company.

Application Procedure

To apply for Geohost assistance, fill out the Geohost Application Form D included in this Second Circular and attach an additional sheet, if necessary (no more than one). Photocopies of the form are acceptable. Applicants who intend to present a paper at the 29th IGC should attach a copy of their abstract as well. Do not send an extensive vita in some other format, or reprints of publications. In addition, each applicant should arrange for his/her supervisor to support the application. Mail the complete form to:

Geohost Selection Committee
29th IGC
P.O. Box 65
Tsukuba, Ibaraki 305, Japan

This form must be received by 1 October 1991, to be considered by the Selection Committee. Late applications will not be accepted.

Selection Procedure

The Geohost Selection Committee will consist of representatives of the IGC Organizing Committee, UNESCO, and the Association of Geoscientists for International Development (AGID) in consultation with representatives of the IUGS. The Selection Committee will select as many Geohost grantees as financial condition allows from among the applicants. The committee will then notify all applicants of the results as soon as possible, so that the grantees can begin to make any necessary arrangements for additional financial support, passport, and visas.

In the event that a grantee cannot attend the Congress, he/she should notify the committee promptly. Any such grant will be reassigned by the committee to one of the alternates. Grants may be transferred only by the committee.

In all cases concerning the disposition of Geohost grants, the judgement of the committee will be final.

Travel and Visa

Registrants who are not Japanese nationals should contact their travel agent or the Japanese Embassy in their country regarding the need for visas to enter Japan. Field trip participants who anticipate entering South Korea or the Philippines during the Congress are advised to obtain multiple-entry Japanese visas as well as visas for the other countries to be visited.

Visa Application

To apply for visas, registrants may be requested by the Japanese Consulate to submit a letter of invitation. Therefore please send us the following information as soon as possible which enable us to send you an invitation letter specifically for visa applications and at the same time take the necessary procedures with our Ministry of Foreign Affairs. If details are not yet fixed, please send us a temporary itinerary as soon as possible and send us full details later.

1) Full name (Family name, given name and others in that order).
2) Birth date (day/month/year).
3) Nationality.
4) Address, telephone number, fax number etc.
5) Name of your institution and your position there.
6) Full itinerary in Japan with dates and purposes.

Registrants from Countries having Reciprocal Visa Exemption Arrangement with Japan

As of November 1989, citizens of the following countries do not need to obtain visas for a stay of 3 months or less (6 months or less for those with *): Since there are occasional changes in the list, please check the current situation at any Japanese Consulate in your country.

Argentina, Austria*, Bahama, Barbados, Belgium, Canada*, Chile, Columbia, Costa Rica, Cyprus, Denmark, Dominican Republic, El Salvador, Finland, France, Germany, Greece, Guatemala, Honduras, Iceland, Iran, Israel, Italy, Lesotho, Liechtenstein*, Luxembourg, Malta, Malaysia, Mauritius, Mexico*, Netherlands, New Zealand, Norway, Peru, Portugal, San Marino, Singapore, Spain, Surinam, Sweden, Switzerland, Tunisia, Turkey, United Kingdom*, Uruguay, U.S.A., Yugoslavia.

14 days or less for Brunei.

Customs Regulations

Japanese Customs Service allows each foreign visitor to bring into Japan the necessary items for personal use. Duty-free imports are; liquor (3 bottles); cigarettes (400) or cigars (100); perfume (2 ounces); 2 watches (each valued less than ¥30,000). Strictly prohibited are firearms and other types of weapons, and narcotics. The Customs Service suggests that any relatively large amounts of prescription medicines, even if for daily use, be accompanied by a physician's letter or written prescription. This is especially important for medications to be injected - for instance, the insulin and syringes with needles needed by diabetic persons.

Travel to and from Kyoto

The airport closest to Kyoto is Osaka International Airport, which is about 55 minutes to Kyoto by the airport bus service. The buses leave the airport every 20 minutes between the hours of 7:55 to 21:30. Buses leaving the airport
40 minutes after the hour stop at several hotels beyond Kyoto Station while the other buses stop only at Kyoto Station. It would be advisable to book an international flight to Osaka (possibly via Narita Airport).

Kyoto is located 500 km west of Tokyo. A bullet train service (Shinkansen) from Tokyo to Kyoto is available every 10-30 minutes from 6:00 to 21:00. It takes about 2 hours and 45 minutes.

For those who arrive at the New Tokyo (Narita) International Airport, one of the following four routes to Kyoto is possible.

1. Take the JR Line (train) to Tokyo Station, then board a Shinkansen train to Kyoto. It will take between 2 and 3 hours from the arrival of the flight to boarding the Shinkansen train.
2. Take an airport-limousine bus to Tokyo Station and then Shinkansen as explained above. It will probably take 3 and a half hours from the arrival of the flight to boarding the Shinkansen train.
3. Take a domestic flight from Narita to Osaka (though there are only a few flights available).
4. Take a domestic flight to Osaka from Haneda Domestic Airport in Tokyo. However, this requires an airport-limousine bus transfer from Narita to Haneda, which takes about 2 hours. About 15 flights are available from Haneda to Osaka each day. It is advisable to make a reservation before leaving your country.

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Japan Travel Bureau is the official travel agent of the Congress, and Japan Air Lines and All Nippon Airways are the official airlines of the Congress. Status UK is also the official Congress travel agent linked with Japan Airlines in Western Europe. JTB New York and Status UK will organize tours for the Congress from North America and from Western Europe, respectively. Attendees traveling from North America and from Western Europe will receive discount on any special published airfare (except non-refundable fares).

North American attendees should contact:
Japan Travel Bureau North America
Equitable Tower 11th Floor,
787 Seventh Avenue, New York
N. Y., 10019 U.S.A.
Tel: 212-246-8030, Fax: 212-246-5607.

Western European attendees should contact:
Status Meetings Ltd
Festival Hall, Petersfield, Hampshire, England, GU31 4JW
Tel: 0730-66544, Fax: 0730-68868

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Japan Airlines International Telephone Information

Africa
Cairo: 740809, 779845, 740621

North America
USA: Los Angeles: 213-322-3999
Pacifico Creative Service: 800-733-7271
Canada: Vancouver: 604-688-6611
Pacifico Creative Service: 604-689-5228

Central and South America
Mexico City: 553-5514-19, PCS: 905-511-3197
Rio De Janeiro: 021-221-9663
Sao Paulo: 011-259-5344, PCS: 011-257-9444

Asia
Bangkok: 233-2440, Creative Tour: 233-5838
Beijing: 513-0888
Hong Kong: 523-0081, Orient Network: 265725
Jakarta: 570-3883.

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JTB

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Beijing: 513-0888
Hong Kong: 523-0081, Orient Network: 265725
Jakarta: 570-3883.
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<th>Single Bed</th>
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<td>23.</td>
<td>Kyoto Prince Hotel</td>
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<td>Kyoto Tower Hotel</td>
<td>12,300</td>
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<td>30.</td>
<td>Kyoto Traveller’s Inn</td>
<td>11,000</td>
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<td>E</td>
<td>31.</td>
<td>Kyoto Tower Restel</td>
<td>7,500</td>
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<td>Dormitory</td>
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<td>Utano Youth Hostel</td>
<td>8 beds</td>
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<td>Higashiyoama Youth Hostel</td>
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<td>Other Dormitories**</td>
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<td>4,000-5,000 per person</td>
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<td></td>
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</tbody>
</table>

* Single occupancy of twin room.

** Governmental hostels and others.

*** Including breakfast.

Cancellation of Hotel Reservations

If you must cancel your reservation, please contact the 29th IGC Nihonbashi, Tokyo, in writing at the Tokyo address. Do not contact the hotel or hostel directly. Hotels and hostels will refund your payment only after being notified by IGC-Tokyo, and only if your request is received prior to 1 August 1992.

Kyoto: The City and its Climate

Kyoto, surrounded by gracefully wooded hills, was the capital of Japan from 794 A.D. to 1868 A.D. Besides two beautiful Imperial Villas, Kyoto has about 400 Shinto shrines and 1,650 Buddhist temples which dot the entire city. Kyoto offers innumerable cultural treasures and traditional crafts and attracts visitors from throughout the world as well as from within Japan.

Typical late August weather is hot and humid outdoors with daily high temperature about 28°C (82°F) in average and over 30°C(86°F) at maximum. Light summer clothing is recommended. Almost all public buildings are air-conditioned, and are sometimes cool enough to require a
light sweater or jacket indoors. Clothing for fine restaurant and cultural events is more conventional but not generally as formal as in most cosmopolitan cities. Stores in the downtown area are generally open from 10:00 a.m. until 6:00 p.m., but evening shopping until 9:00 p.m. is possible in many. All cities in Japan are relatively safe even at night. You may not meet any trouble unless you are so relaxed as to leave important material unattended in a public place.

Major banks that handle foreign currencies are located in the downtown area of Kyoto. Banks are open from 9:00 a.m. to 3:00 p.m. on weekdays. They are closed on Saturday, Sunday and National Holidays. Major foreign currencies can also be exchanged at larger hotels. It is recommended that participants purchase traveler's checks in Japanese yen or US dollars before leaving their own countries.

First Circular Response

Replies to the Preliminary Questionnaire total 4,078 at the end of December 1990. The following is a review of responses in which some countries are represented:

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
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<tbody>
<tr>
<td>Africa</td>
<td>174</td>
</tr>
<tr>
<td>America (North and Central)</td>
<td>722</td>
</tr>
<tr>
<td>Canada</td>
<td>108</td>
</tr>
<tr>
<td>USA</td>
<td>569</td>
</tr>
<tr>
<td>America (South)</td>
<td>91</td>
</tr>
<tr>
<td>Asia</td>
<td>1,390</td>
</tr>
<tr>
<td>China</td>
<td>289</td>
</tr>
<tr>
<td>Japan</td>
<td>614</td>
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<td>Europe</td>
<td>1,579</td>
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<td>UK</td>
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<td>USSR</td>
<td>667</td>
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<tr>
<td>Oceania</td>
<td>122</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>4,078</td>
</tr>
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</table>

Appointment of Official Delegates to the Congress

National Committees and/or appropriate authorities of participating countries will appoint delegates (in accordance with article 5.7 of the statutes) to represent them on the Council of the Congress, which will sit for the duration of the session.

Third Circular

The Third Circular will be ready for distribution by April 1992. It will be sent ONLY to those who have returned both the registration form contained in the Second Circular and the required fees. The Third Circular will only provide information supplementary to material contained in the Second Circular.

30th Session of the Congress

At the 28th IGC in Washington, D. C., U.S.A., July 1989, the Geological Society of China extended an official invitation to host the 30th Session in the People's Republic of China in 1996. This proposition will be examined at the Council meeting of the forthcoming 29th Session in Kyoto in 1992.
<table>
<thead>
<tr>
<th>REGISTRATION</th>
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<tr>
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<tr>
<td>Senior member</td>
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<tr>
<td>Student member</td>
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<td>Non-attending member</td>
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<td>Accompanying member</td>
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<tr>
<td>Session No.</td>
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<td>PAYMENT</td>
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- Bank Cheque (Bank: ______________________) 

- Credit Card
  - American Exp.
  - Diners
  - MasterCard
  - VISA

Expiry Date __________________________________

DATE: ______________________

SIGNATURE: ______________________
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<th>No. of 2nd choice</th>
<th>No. of 3rd choice</th>
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<th>Twin</th>
<th>Arrival</th>
<th>Departure</th>
<th>Day</th>
<th>M</th>
<th>Day</th>
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Subtotal:  

**FIELD TRIPS**

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<tr>
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**SOCIAL AND ACCOMPANYING MEMBER PROGRAM**

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**YOUTH CONGRESS**

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<th>No.</th>
<th>M.</th>
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<th>M.</th>
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Subtotal: FORM B  Y
GEOHOST PROGRAM APPLICATION FORM

Form must be received by 1 October, 1991

Name: ___________________________ Last First Middle ___________________________

Highest academic degree: ___________________________ Date of birth: ___________________________

Country of Birth: ___________________________

at ___________________________

Name of university ___________________________

in ___________________________

City and country ___________________________

Year ___________________________

Employer/Institute/Company: ___________________________

Work address: ___________________________

Phone: ___________________________ Fax: ___________________________ Telex: ___________________________

Type of subsidy:
Please check the most required.
If you need support for more than two, number in order of priority.

☐ Registration fee for the Congress
☐ Lodging fee for _____ days
☐ fee for short course, workshop and field trip.
☐ Travel cost

Describe your current job or position: ___________________________

Recommendation by supervisor: ___________________________

_________________________

_________________________

_________________________

_________________________

_________________________

Signature of supervisor ___________________________

Name and address of supervisor: ___________________________

Have you received any grant in previous IGC? If so, list which kind of grant and which Congress: ___________________________

(Optional)
List your three most important recent publications, giving authorship, title, and year and place of publication:

Number and title of applied symposium session:

Please attach abstract
FEATURE ARTICLE

AVOIDING CARPAL TUNNEL SYNDROME: a guide for computer keyboard users

Editor's Note: this article originally appeared in the July-August 1990 issue of University Computing Times, the newsletter of University Computing Services at Indiana University, Bloomington. The author is Mark Sheehan, University Computing Services, BITNET; Sheehan@IUBACS. The article was retrieved from the articles database of CCNEWS, the Electronic Forum for Campus Computing Newsletter Editors, a BITNET-based service of EDUCOM.

Carpal tunnel syndrome (CTS) is a painful, debilitating condition. It involves the median nerve and the flexor tendons that extend from the forearm into the hand through a "tunnel" made up of the wrist bones, or carpals, and the transverse carpal ligament (Figure 1). As you move your hand and fingers, the flexor tendons rub against the sides of the tunnel. This rubbing can cause irritation of the tendons, causing them to swell. When the tendons swell they apply pressure to the median nerve. The result can be tingling, numbness, and eventually debilitating pain.

Causes
Like many skeletomuscular disorders, CTS has a variety of causes. It is most often the result of a combination of factors. Among these are:

Genetic predisposition Certain people are more likely than others to get CTS. The amount of natural lubrication of the flexor tendons varies from person to person. The less lubrication, the more likely is CTS. One study has related the cross-sectional shape of the wrist, and the associated geometry of the carpal tunnel, to CTS. Certain tunnel geometries are more susceptible to tendon irritation.

Health and lifestyle. People with diabetes, gout, and rheumatoid arthritis are more prone than others to develop CTS, as are those experiencing the hormonal changes related to pregnancy, menopause, and the use of birth control pills. Job stress has also been linked to an increased likelihood of CTS. And CTS seems to be more frequent among alcoholics.

Repetitive motion. The most common cause of CTS that's been attributed to the workplace is repetitive motion. When you flex your hand or fingers, the flexor tendons rub against the walls of the carpal tunnel. If you allow your hand time to recover, this rubbing is not likely to lead to irritation. The amount of recovery time you need varies from fractions of a second to minutes, depending on many circumstances, including the genetic and health factors mentioned above, as well as the intensity of the flexing, the weight of any objects in your hand, and the extent to which you bend your wrist during flexing.

Trauma. A blow to the wrist or forearm can make the tendons swell and cause or encourage the onset of CTS.
Prevention

Computer keyboard users can take several steps to lower their chances of developing CTS. Some of these center around the configuration of the workplace, or "ergonomics." Others have to do with human factors.

Ergonomics. Proper seating is crucial to good ergonomics. The height of your seat and the position of your backrest should be adjustable. The chair should be on wheels so you can move it easily. Arm rests on the chair, though optional, are often helpful.

Figure 2 illustrates many of the points discussed below.

**Elbow angle.** With your hands resting comfortably at the keyboard and your upper arms vertical, measure the angle between your forearm and your upper arm (the elbow angle). If it is less than 90°, raise the seat of your chair. If the angle is greater than 90°, lower the seat. Try to hold your elbows close to your sides to help minimize "ulnar displacement" the sideways bending of the wrist (as when reaching for the "Z" key).

**Waist angle.** With your elbow angle at 90°, measure the angle between your upper legs and your spine (the waist angle). This too should be about 90°. If it is less than 90°, your chair may be too low (and your knees too high). Otherwise, you may need to alter the position of the backrest or adjust your own posture (nothing provides better support than sitting up straight). (Note: If making your waist angle 90° changes your elbow angle, you may need to readjust the height of your chair or table.)

**Feet.** With your elbows and waist at 90° angles, your feet should rest comfortably flat on the floor. If they don't, adjust your chair and table height and repeat the steps above. If your table isn't adjustable and your feet don't comfortably reach the floor, a raised footrest can help. Otherwise, you may need a different table.

**Work routine**

You need very little recovery time between keystrokes to cool and lubricate the flexor tendons. If you type constantly, however, the need for recovery builds. Further, working with your hands bent upward at the wrists or frequently bending your wrists sideways heightens the friction within the carpal tunnel. It takes longer to recover from these motions. Working under stress (deadline pressure, anger, or other anxiety) can make matters even worse.
Many studies recommend a 10-15 minute break each hour to give yourself the recovery time you need. This needn't be a break from productive activities -- just a break from your keyboard. Exercises can help, too. Try the following:

- Make tight fists, hold for one second, then stretch your fingers out wide and hold for five seconds. Repeat several times.
- With arms outstretched in front of you, raise and lower your hands several times. Rotate your hands ten times (make circles in the air with the fingertips).

Variety is the key. CTS occurs most frequently in workers whose motions are not only repetitious but are kept up for hours at a time. If you use a keyboard, structure your workdays to include a mix of activities each hour. For example, instead of typing all morning and filing all afternoon, mix typing and filing throughout the day.

Early detection
The most painful cases of CTS are those that have gone undetected or untreated over a long time. CTS can be caught easily in its early stages, however, and much of the pain and all of the disability avoided.

Early symptoms include a tingling in the fingers, often beginning several hours after work activity has stopped. Because of this delay in the appearance of symptoms, many CTS sufferers don't make the connection between their work activities and the pain they feel until it's too late. The tingling can lead, over time, to stiffness and numbness in the fingers and hand, and then to severe wrist and hand pain.

For many individuals the early symptoms of CTS go unnoticed. Employers and coworkers can help one another identify the onset of CTS by watching for and pointing out any unconscious shaking of the hands, rubbing of the wrists, or unusual postures or hand positions at the keyboard.

At the first sign of CTS, you should be examined by a doctor who specializes in hand and wrist disorders. The doctor can perform a number of simple tests to detect CTS, and can prescribe specific steps for avoiding the problem.

Summary
Carpal tunnel syndrome is common among computer keyboard users. It can strike anyone, and its consequences are serious. Awareness of the problem and its causes is crucial to preventing CTS. With proper ergonomics and attention to the work routine you can prevent CTS, with early detection and treat-
GEOSCIENCE INFORMATION GROUP CONSTITUTION

1. NAME
1.1 The name of the Group shall be the Geoscience Information Group.
1.2 The Group will be affiliated to the Geological Society;
1.3 The Group will be affiliated to the International Association of Mathematical Geology (IAMG) as its representative in the U.K.

2. AIMS
2.1 The purpose of the Group shall be to promote methods used to manage and manipulate information in the geosciences and to advance the education of the public in geology through the study of geoscience information (data and literature) and mathematical geology in all its aspects, by:
   - the holding of meetings and visits to promote the exchange of information and the study in depth of all aspects of the science;
   - the publication of material;
   - the encouragement of research and teaching;
   - such other means as the Committee of the Group may think desirable subject to the approval of the Council of the Society.

3. MEMBERSHIP
3.1 Membership of the Group shall be open to all with an interest in geoscience information.
3.2 There will be no fee for membership of the Group.
3.3 Members will receive publications of the Group on payment of an annual contribution. The annual contribution to be charged will be decided at the Annual General Meeting.

4. COMMITTEE
4.1 The affairs of the Group shall be managed by the Committee.
4.2 The Committee shall consist of at least seven members and reflect the Group’s interests and affiliations. The elected Committee shall consist of officers of the Geoscience Information Group (a Chairman, a Secretary, a Publications/Publicity Officer, a Membership Secretary, a Treasurer) and two ordinary members. The Committee shall co-opt additional members. Each Interest Area will be represented by one member of the committee. All Committee members must be members of the Group in terms of clause 3.
4.3 Nominations for elections to the Committee shall be supported in writing by two members of the Group with the nominee’s written consent and shall be received by the Secretary of the Group fourteen days before the Annual General Meeting.
4.4 Committee members shall be elected at the Annual General Meeting of the Group.
4.5 No member of the Group may serve in the same office of the Committee for more than three years continuously.
4.6 The quorum for the Committee shall be 5 members of the Committee and shall include at least two Officers of the Group.
4.7 Officers of the Geological Society shall be ex-officio members of the Committee.
4.8 The Chairman and Secretary, or their nominees from the current Committee, shall represent the Group and shall have authority to act on behalf of the Group on the Specialist Groups Committee of the Society.

5. ANNUAL GENERAL MEETING
5.1 The Annual General Meeting shall normally be held in the spring.
6. FINANCE

6.1 The financial affairs of the Group will be the responsibility of the Treasurer who will, where necessary, consult and be advised by the Treasurer of the Geological Society. The Treasurer of the Group will be responsible for the keeping of proper accounts and at least once a year, normally at the Annual General Meeting, will present a Balance Sheet for the inspection of members. This Balance Sheet will have been examined and its correctness ascertained by an independent Auditor.

6.2 The Group shall incur no financial obligations chargeable to the Geological Society, unless such obligations have been authorized in advance by the Council of the Geological Society.

6.3 An annual summary of the financial position of the Group should be submitted to the Geological Society by 31st December.

7. GENERAL

7.1 The group shall not take any action which may conflict with the terms of the Charter and Bye-laws of the Geological Society.

8. AMENDMENTS TO THE CONSTITUTION

8.1 Amendments to the Constitution can only be made at an Annual General Meeting or an Extraordinary General Meeting specifically convened for this purpose. Members must be notified of the proposed changes, in writing, at least 21 days prior to the date of the meeting. Changes to be approved by simple majority. No amendment to the Constitution shall be made without the prior consent of the Charity Commissioneres for England and Wales.

9. DISSOLUTION OF THE GROUP

9.1 Dissolution of the group shall be carried out at an Extraordinary General Meeting convened for this purpose. 21 days notice shall be given of such a meeting. If upon the dissolution of the Group, there remains after the satisfaction of all debts and liabilities any property whatsoever, this shall not be paid or distributed among members of the Group but shall be given or transferred to the Geological Society or another charitable organisation or organisations having similar objects.
HORNICKÁ PŘÍBRAM VE VĚDĚ A TECHNICE

14. - 18. 10. 1991 PŘÍBRAM
CZECHOSLOVAKIA
The best connection from Prague to Příbram is by BUS. The bus terminal is situated nearby the subway station ANDĚL (line B). The buses usually leave at the gate No.13. The bus fare (April 1991) is 21 Kčs. About 65 minutes are needed for the transport from Prague to Příbram.

The RAILROAD connection from Prague: the trains leave the main or the Salmich railway stations (identical subway stations Hlavní Nádraží or Smíchovské Nádraží).

Travelling by CAR from Prague to Příbram, take the direction DOBRÍŠ–STRAKONICE, the distance is about 60 km.

Prague - in center of Europe - has good daily airway connection with all main airports in Europe. Participants arriving to Prague by airplane may use from the airport a special bus of the Czechoslovak Airlines or a municipal bus No.119 - in both cases they may reach the subway station DEJVICKÁ from where they have to use 1) the line A to the station MŮSTEK, then 2) the line B to the SMÍCHOVSKÉ NÁDRAŽÍ.

ARRIVING TO PŘÍBRAM by bus or by train you get usually off at the bus terminal or nearby at the railway station. The hotel and information center of the Symposium DŮM KULTURY is in a walking distance (15 minutes) or local bus No.2 can be used (to the station POLIKLINIKA). The bus fare in Příbram is 2Kčs and the tickets can be purchased in an automatic box (coins for 1 or 2 Kčs).

Hotel accommodation:

The Executive Committee will try to accommodate all Symposium participants from abroad in the hotel DŮM KULTURY or in other hotels nearby (in a walking distance). The hotel reservation will be assured in accordance with the registration form enclosed to this bulletin (reply to questions No. 7 and 8).

It is possible to stay in the hotel in Příbram also before and/or after the Symposium if indicated in the registration form. You may reach Prague from Příbram very easily and you may also visit other interesting places in Příbram and vicinity.

With regard to the limited capacity of local hotels the participants are asked to share rooms with other colleagues. The accommodation is to be paid by each participant IN CASH in the hotel. Also meals (including breakfast) in the restaurant are to be paid in cash.

In case of any unexpected change or cancellation of your trip be so kind to send a telegram to the Symposium secretary or to the convenor of the section.

Payments:

The REGISTRATION FEE 120 USD per person is to be paid by a cheque enclosed to the registration form payable to A. Rydl, The Mining Příbram Symposium. The fee includes the access
to all Symposium sections and the Proceedings volume of the section "Mathematical Methods in Geology", participation at social and cultural events and the excursion to Kutná Hora.

After July 1st, 1991 and before September 15, 1991 the registration fee is 150 USD per person. For registrations received after September 15, 1991 the Symposium cannot accept any responsibility to assure accommodation.

The accompanying persons will pay only 30 USD per person, they can take part in all social and cultural events as well as in the excursion to Kutná Hora. Also this fee is to be paid by the cheque payable to "A. Ryžíl, The Mining Příbram Symposium".

It is also possible - for non-attending colleagues or for libraries - to order the Proceedings volume. Make a cheque payable to "A. Ryžíl, The Mining Příbram Symposium" for 100 USD and send it before June 30, 1991.

In case you will cancel your trip to Czechoslovakia the registration fees will not be reimbursed but the Proceedings volume will be sent to you by mail after the Symposium.

The registration form is enclosed to this circular letter. It is to be sent to the address of the Symposium Secretary preferably BEFORE JUNE 30, 1991. If you shall decide not to attend the Symposium this year, be so kind to send us the registration form with respective notice as well (preferably before June 30, 1991).

Approximate living expenses in Czechoslovakia:
Hotel accommodation in Příbram - 1 person/1 day - 10 - 25 USD
Meals - 1 person/1 day
Prices are to be paid in Czechoslovak crowns (Kčs), actual rate of exchange (April 1991) is about 29 Kčs for 1 USD.

Mail to be sent to the following address:
The Mining Příbram Symposium Secretary, P.O. Box 41 261 02 Příbram Czechoslovakia

In emergency cases contact the convener:
Dr. Václav Násek
K rybníčkům 17
100 00 Praha 10-Strašnice Czechoslovakia

Telephone: (422) 78 11 801
First Circular

Geochemistry of Fuels

Institute of Geology and
derpartment of Earth's Science

Mathematical Geology

International Association for
Geological Data (GEOBASE)

Commission on Storage, Automat.

Geoenvironmental Research

Application for Geological Technology and
Symposium on Data Analysis.

 address: Symposium Organizing

Lavva, 63, Ukraine

290053, Moscow str. 34,

Committee

Preliminary registration form

is submitted to organizing committee until August 1, 1991.
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DEPARTMENT OF GEOLOGY
UNIVERSITY OF OTTAWA

SHORT COURSE: Mineral Potential Mapping with GIS


DESCRIPTION:
This course provides an introduction to Geographic Information System (GIS) applications for spatial data integration, with an emphasis on mineral potential modelling. Methods of building geological spatial databases, carrying out spatial analysis, of transforming and extracting features from geoscientific maps, and of combining maps to estimate mineral favourability are discussed and demonstrated. Practical demonstrations and exercises are an integral part of the course, using the PC-based SPANS GIS. Hands-on exercises are interspersed with lecture material throughout. No previous GIS or computing experience is required, although familiarity with digital mapping concepts is an advantage.

During the course, a variety of approaches for modelling mineral potential are introduced, such as subjective, statistical and expert system methods. Practical implementation of methods is emphasized. Participants may bring their own datasets, if desired.

LECTURERS:
* Graeme Bonham-Carter, Adjunct Professor and Research Scientist, Mathematical Applications to Geology Section, Geological Survey of Canada. (Course Director).

Dr. Bonham-Carter has been working in the field of computer applications to geology since the mid-1960s. His research interests include simulation modelling, resource assessment, spatial data integration and GIS applications.

* Frits Agterberg, Adjunct Professor and Head, Mathematical Applications to Geology Section, Geological Survey of Canada. Dr. Agterberg has more than 30 years experience in geoscience applications of mathematical statistics. Research interests include mineral potential mapping and geostatistical resource estimation.

* Tim Webster, Lecturer, College of Geographic Sciences, Lawrencetown, Nova Scotia and Inter-Tydac Inc. Mr. Webster is a geologist and computer specialist with a strong background in image processing and GIS.

* Danny Wright, Graduate Student in Geology and Physical Scientist, Mathematical Applications to Geology Section, Geological Survey of Canada. Mr. Wright has worked in the mineral exploration industry and has extensive experience in GIS applications to geological problems.

TOPICS COVERED:
* survey of mineral potential mapping methods, both data-driven and knowledge-driven

* GIS technology for
  - building spatial databases from regional datasets
  - using raster images, maps in vector format, attribute tables for point, line and polygon entities
  - deriving maps to be used as evidence of mineral potential from unprocessed input data
  - implementing mathematical and statistical models that combine evidence maps
  - display and interrogation of results

* data-driven methods
  - Bayesian weights of evidence models
  - regression models
  - inductive decision trees

* knowledge-driven methods
  - deterministic rules
  - rules of fuzzy logic
  - PROSPECTOR-type inference nets
* examples from gold potential mapping in Nova Scotia and New Brunswick; base metal potential in a greenstone belt, Manitoba, and others.

OTHER COURSE FEATURES:
* practical hands-on exercises, using SPANS GIS as the teaching vehicle, will be interspersed with lecture demos; there will be no more than 4 participants per system
* a course manual with GIS exercises and reprints
* complimentary banquet on Thursday November 14

FOR WHOM
* those working in the mineral exploration industry or the field of mineral resource assessment; managers, scientific staff
* all technical material will be introduced with a practical orientation; no GIS or math/stat background is requisite, although some experience with digital mapping is an advantage

NUMBERS: Limited to 30 participants.

COURSE FEE: (Canadian) $1500. Payment by September 20, 1991.

MORE INFORMATION AND REGISTRATION:
GIS SHORT COURSE
Department of Geology
University of Ottawa
770 King Edward
Ottawa, Ont. K1N 6N5
FAX (613) 564-9916
### 1991

**March 25-27, 1991**  
Fifth SIAM Conference on Parallel Processing for Scientific Computing  
The Westin Galleria Hotel, Houston, TX  
Sponsored by SIAM Activity Group on Supercomputing  
Organizer: Danny Soroker, Rice University

**May 6-8, 1991**  
Fifth Conference on Domain Decomposition Methods for Partial Differential Equations  
Omni Hotel, Norfolk, VA  
Organizer: Robert G. Voigt, ICASE

**July 8-12, 1991**  
Second International Conference on Industrial and Applied Mathematics (ICIAM 91)  
Sheraton Washington Hotel  
Washington, D.C.  
Organizer: Robert E. O'Malley, Jr., University of Washington

**September 11-14, 1991**  
Fourth SIAM Conference on Applied Linear Algebra  
Radisson Hotel Metrodome  
Minneapolis, MN  
Sponsored by SIAM Activity Group on Linear Algebra  
Organizer: Richard Brualdi, University of Wisconsin, Madison

### 1992

**January 27-29, 1992**  
Third ACM-SIAM Symposium on Discrete Algorithms  
Carlton Hotel, Orlando, FL  
Abstract deadline: 7/29/91

**May 11-13, 1992**  
Fourth SIAM Conference on Optimization  
Hyatt Regency Hotel, Chicago, IL  
Abstract deadline: 10/11/91

**June 8-11, 1992**  
Sixth SIAM Conference on Discrete Mathematics  
University of British Columbia  
Vancouver, Canada  
Sponsored by SIAM Activity Group on Discrete Mathematics  
Abstract deadline: 11/15/91

**July 19-24, 1992**  
SIAM Annual Meeting (SIAM's 40th Anniversary)  
Century Plaza Hotel, Los Angeles  
Abstract deadline: 1/6/92

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**FOR ADDITIONAL INFORMATION, PLEASE CONTACT:**  
SIAM Conference Department  
3600 University City Science Center  
Philadelphia, PA 19104-2688  
Phone: 215-382-9800 / Fax: 215-386-7999 / E-mail: siamconfs@wharton.upenn.edu
April 15, 1991

Contact: Betty Gibbs

FOR IMMEDIATE RELEASE

NEW HANDBOOK OF
PUBLIC DOMAIN
SOFTWARE

Gibbs Associates announces a new publication, "Public Domain Software for Earth Scientists, a Handbook of Public Domain and Inexpensive Software". The publication is a comprehensive summary of PC software programs available from government agencies, universities, and individuals, as well as the most popular inexpensive commercial programs.

The handbook is divided into over 30 categories, including: economic evaluation, environmental sciences, geology, mapping, geochemistry, coal, geophysics, statistics, mining, surveying, hydrology, earth science bulletin boards, and GIS. Included is an extensive listing of software from government agencies in the U.S. and Canada. It will be a time saver for anyone interested in researching the most inexpensive programs available for earth science applications. The packages can be ordered directly through Gibbs Associates.

Compiled by Betty Gibbs and Steve Krajewski, the handbook sells for $25, or $35 outside North America. Gibbs Associates is publisher of the Directory of Mining Programs and the popular monthly newsletter, Computers & Mining, and is located in Boulder, Colorado.

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April 15, 1991

Contact: Betty Gibbs

FOR IMMEDIATE RELEASE

DIRECTORY OF MINING

PROGRAMS

UPDATE

The 1991 edition of The Directory of Mining Programs, from Gibbs Associates, is now available. First published in 1985, this directory is the most complete listings of software programs available for the mining industry.

The directory includes over 800 programs in 36 categories. Programs are grouped into sections such as: data bases, geology, exploration, geochemistry, geophysics, coal, reserve modeling, reclamation, mine planning and scheduling, mapping, mineral processing, surveying, and ventilation. Each listing includes the name and address of the vendor, program name and description, language used, memory and hardware requirements, operating system, and price.

Compiled and updated by mining computer systems consultant, Betty Gibbs, the directory sells for $75, or $90 outside North America. Gibbs Associates is publisher of the popular monthly newsletter, Computers & Mining, and is located in Boulder, Colorado.

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SURVEY OF COMPUTER SOFTWARE

The Working Group is coordinating an international survey of computer software useful to mineralogists. It is intended that the results of this survey will be collated and published as a catalogue with the first edition being available at the time of the 29th IGC in Kyoto.

The idea is to cover all computing aspects of a mineralogist's work from management of references to structure analysis, thermodynamics and mineral identification. A not necessarily exhaustive list of fields of interest might be:

- Analysis and assay
- Collection management
- Crystallography
- Data logging
- Databases and data manipulation, mineralogical data files
- Electron microscopy and diffraction (SEM, TEM)
- Electron, proton, ion microprobes
- Image analysis
- IR, UV and other spectroscopies
- Literature
- Magnetic analysis
- Mass spectrometry
- Mineral calculations and plotting
- Mineral classification
- Mineral identification
- Mossbauer spectroscopy
- Optical microscopy
- Spreadsheets
- Teaching of mineralogy and crystallography
- Surface techniques such as XPS, auger, energy loss etc.
- Thermal analysis
- Thermodynamics
- Word processing
- X-ray diffraction (qualitative and quantitative)

We should very much appreciate your cooperation in this survey. If you own, use or even know of relevant software, we invite you to complete the form overleaf as far as you can, and return it to the address given below. Please make a copy of the form to cover each separate piece of software.

IMA Software Survey  
c/o Professor Dorian G.W. Smith  
Department of Geology  
1-26 Earth Sciences Building  
University of Alberta  
Edmonton, Alberta  
Canada, T6G 2E3  
FAX: (403) 492-2030  
EMAIL: EDAN@ULTAMTS.BITNET

Please return as soon as possible and absolutely no later than October 1st, 1991
Complete as many of the following as you can (PLEASE PRINT/TYPY OR CHECK):

1. Software name ..................................................................................................................

2. Author/Source/origin ..........................................................................................................

3. Purpose/field of application .............................................................................................

........................................................................................................................................... □ Teaching □ Research

4. Documentation: □ Manual □ Readme File □ Other..........................................................

5. Any Associated apparatus, equipment or software libraries etc. required? ..................

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6. Availability: □ Private □ Shareware □ Freeware □ Public domain □ Commercial

7. Source code available? □ Yes □ No If yes, language ..........................................................

8. Literature reference ..........................................................................................................

9. First year available (if known) ......................................................................................... Last Upgrade date ..........................................................

10. Address for enquiries ......................................................................................................

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11. Cost (where commercial/shareware) ..............................................................................

12. Computing platform: □ Micro □ Workstation □ Mini □ Mainframe □ Online version available? 

13. Operating system: □ PC/MS-DOS □ Macintosh OS □ UNIX

........................................................................................................................................... □ Other (specify)

14. Minimum hardware requirements:

Graphics........................................ Min. RAM........................................ Expanded/extended memory(Yes/No).......

Hard drive size.......................... Floppies .................................................. Math. Coprocessor (Yes/No)..................

15. Status: □ Fully developed □ Developed and being updated □ Under active development


17. Comments (e.g., usefulness, comparisons with similar software)? ..............................

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Submitted by (name, address, phone, FAX, telex, EMAIL, etc.)

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