



CONTENTS

Special Features

Digital Database Forum: The USGS, Again, by Jim O'Donnell	13
Duplicate Exchange List--USGS Library	15

Departments

President's Column	1
Vice-President's Column	3
GIS 1991 Annual Meeting	
Final Agenda	3
Symposium Agenda and Abstracts	4
Technical Session Agenda and Abstracts	7
Meeting Notes	10
GIS committee reports	11
From the Publications Manager	12
Announcements	12
Members in the News	12
New GIS Members	14
Job Announcement	17
Readings in Geoscience Information	17
Publications	18
Meetings and Conferences	19

PRESIDENT'S COLUMN

1991 Executive Board Meeting: All Committee chairs or their designated representatives and new officers are asked to attend the 1991 Executive Board Meeting, Sunday, October 20, from 9 am until 12 noon in the Marriott Cardiff Room. Any other member who would like to attend is welcome.

1991 GIS Annual Business Meeting

Tuesday, October 22, 1991

8:30 a.m. - 12:00

Marriott Cardiff Room

Preliminary Agenda

1. Approval of minutes from the 1990 Business Meeting as published in the December 1990 GIS Newsletter
2. Introduction of new officers
3. Introduction of new members and visitors
4. Reports of officers
5. Reports of representatives
6. Reports of committees
7. Old business
8. New business
9. Announcements
10. Adjournment

Presentation of the GIS awards for Best Geological Reference Book, Best Paper, and Best Guidebook will be made promptly at 9:00 am. When the award ceremonies are completed, the business meeting will resume.

Old and new business considered by the Executive Board will be discussed first. If you wish to place items on the agenda for the Executive Board meeting and/or the Annual Business Meeting in San Diego, call me at 608/262-8956 or email me at dvorzak@wiscmacc.BitNet. Time permitting, old and new business will be accepted from the floor.

Annual Reports: A reminder to officers, committee chairs and representatives that your annual reports are due to me by September 20. Please send a copy to Connie Manson for the GIS Newsletter.

GEOLOGICAL SOCIETY OF AMERICA

San Diego

GSA 1991

1991 ANNUAL MEETING

San Diego, California • October 21-24

GLOBAL CHALLENGE

GEOSCIENCE INFORMATION SOCIETY
1991 OFFICERS

President

Marie Dvorzak
Geology-Geophysics Library
440 Weeks Hall, 1215 W. Dayton
University of Wisconsin-Madison
Madison, WI 53706
608/262-8956; fax: 608/262-0693
E-Mail (Internet): dvorzak@vms.macc.wisc.edu
E-Mail (Bitnet): dvorzak@wiscmacc

Vice-President/President Elect

Dena Fracolli
Information Consultant
3110 McPherson
Fort Worth, TX 76109
817/923-7052
E-mail (Bitnet): dlf88@CAS

Immediate Past President

Mary Ansari
Director's Office
University of Nevada, Reno Library
Reno, NV 89557-0044
702/784-6533; fax: 702/784-1751
E-Mail (Internet): marya@equinox.unr.edu

Secretary

Julia Triplehorn
Geophysical Institute
University of Alaska
Fairbanks, AK 99775-0800
907/474-7503
E-Mail (Bitnet): FYGILIB@ALASKA

Treasurer

Janice Sorensen
Kansas Geological Survey
1930 Constant Avenue
University of Kansas
Lawrence, KS 66046-2598
913/864-3965
E-Mail (Bitnet): sorensen@ukanvax

Publication Officers

Editorial Board Chair

Amanda Masterson
Bureau of Economic Geology
Box X, University Station
Austin, TX 78713-7508
512/471-1534 x222; fax: 512/471-0140

Newsletter Editors

News Gathering
Judy Geitgey
6328 Mendius N.E.
Albuquerque, NM 87109
505/845-8218; fax: 505/846-1521

Production and Mailing

Connie Manson
Washington Div. Geology and Earth Resources
PY 12
Olympia, WA 98504
206/459-6373; fax: 206/459-6380

Publications Manager

Louise Zipp
Geology Library
University of Iowa
Iowa City, IA 52242
319/335-3084; fax: 319/335-5830
E-Mail (Bitnet): cadlszts@uiamvs

The GIS Newsletter is published bi-monthly in February, April, June, August, October, and December by the Geoscience Information Society. Subscription to the Newsletter is \$30 per year and is included in the Society's annual membership dues. All correspondence regarding dues, membership status, and address changes should be directed to the GIS Secretary.

GIS members are encouraged to contribute materials for publication. Research articles and technical reports should be submitted to the Editorial Board for review and possible publication. Information reports, officer and committee reports, publication notices, job announcements, and other news items should be submitted to the News Gathering Editor.

Material for the October, 1991 issue of the GIS Newsletter should be received by the editors no later than September 20, 1991. If possible please send materials on IBM-compatible disk (Wordstar 3.3, Wordperfect, or ASCII format).

VICE-PRESIDENT'S COLUMN

Update on the San Diego Meeting.

Because the GSA meeting is so early this year, we decided to include the abstracts for the GIS symposium and GIS technical session in this August issue. (We were afraid that the October issue wouldn't reach you soon enough to be useful!) This issue also includes the final GIS schedule (with room locations), and some other notes of interest from JTPC.

By now, you should all have received the *GSA Today* issue (vol. 1, no. 8) that contains registration material for the 1991 annual meeting, with information about San Diego and our GIS workshops and symposium.

If you would like any additional information on the 1991 GIS annual meeting in San Diego, please contact me at the phone/address provided inside the cover page of this Newsletter.

GSA Joint Technical Program Committee

In early August I represented GIS at the GSA Joint Technical Program Committee (JTPC) meeting in Boulder, Colorado. I met with other GSA division and associated society representatives, GSA staff, and the GSA annual meeting program chairs for Dallas (1990), San Diego (1991), Cincinnati (1992), and Boston (1993). At JTPC, the 1991 schedule was finalized for San Diego's annual meeting, the final selection of abstracts for papers and poster sessions took place, and room assignments were finalized for all the sessions.

The GSA Program Committee is a policy-setting group that includes program chairs for previous and upcoming GSA annual meetings. This year the Program Committee mentioned two issues I want to share with you.

1) Next year, you can expect that GSA will no longer allow a person to submit more than one abstract where he/she is the presenter. Up to now, multiple abstracts with

GEOSCIENCE INFORMATION SOCIETY Annual Meeting, October 20 - October 24, 1991 Final Schedule

SUNDAY, OCTOBER 20, 1991

9 am - 12 am GIS 1991 Executive Board Meeting: Marriott Cardiff Room
1:30 - 4:30 Geoscience CD-ROM Workshop: Marriott Marina Ballroom D

MONDAY, OCTOBER 21, 1991

8 am - noon GIS Symposium (S11), International Initiatives in Geoscience Information: A Global Perspective": San Diego Convention Center Room 17B
Noon - 1:30 pm GIS Luncheon: Marriott Marina Ballroom E
2:00 - 4:00 pm Database Forum: Marriott Marina Ballroom G
7:00 - 9:30 pm GIS reception: Marriott Del Mar Room

TUESDAY, OCTOBER 22, 1991

8:30 - noon GIS Business Meeting: Marriott Cardiff Room
~~1:30~~ - 3:45 pm GIS Technical Session, "Current Issues in Geoscience Information": San Diego Convention Center Room 7B
4 PM Del Mar

WEDNESDAY, OCTOBER 23, 1991

8 am - 10 am GeoRef Workshop: Marriott Marina Ballroom F
10:30 - noon GeoRef Users Group: Marriott Warner Center
1:30 - 3:00 pm GIS Collection Development Committee Meeting: Marriott Marina Ballroom F
6:00 - 9:30 pm GIS 1992 Executive Board Meeting: Marriott Los Angeles Room

THURSDAY, OCTOBER 24, 1991

9 am - 4:15 pm GIS Field Trip to Scripps Institute of Oceanography: Meet outside San Diego Convention Center

the same presenter could be submitted, but only one could be accepted. Next year, submission of more than one such abstract could be grounds to reject all abstracts submitted by that presenter. A person can still be a co-author on more than one abstract, but not presenter for more than one.

2) The Program committee may be changing the wording on abstract forms describing the kind of material that is expected for submission. They hope to include both scholarly papers as well as scientific research in the description, in an effort to reflect more completely the work they hope to see presented by some of the associated societies - GIS included.

A record number of 2,288 volunteered abstracts were submitted for the 1991 annual meeting, a forecast for great attendance this year in San Diego.

A questionnaire will be provided in the registration packet this year so that each registrant can give GSA feedback on the 1991 annual meeting. The questionnaire will

replace the Thursday wrap-up session where attendees normally voice their comments on the meeting. The questionnaires should reach more registrants, and are also a function of the fact that recently the meetings seem to be running more smoothly and few people show up at the face-to-face session to voice complaints.

Due to financial constraints, the Exhibits Booth will not be open on Sunday in San Diego. Look for the Exhibitors' welcome reception on Monday evening, 4:30 to 6:00 pm. (Our GIS schedule should allow time late Monday, Tuesday, and Wednesday afternoons for visiting the exhibits.)

It shouldn't be too difficult to get from session to session this year. Our GIS symposium and technical session will be held at the San Diego Convention Center. All the other GIS events and meetings will be held less than a block away in the Marriott Hotel.

I look forward to seeing you in San Diego!

GIS Symposium (S11)
"International Initiatives in Geoscience Information:
A Global Perspective"
Monday, October 21, 1991
San Diego Convention Center Room 17B

Dena Fraccolli, presiding

- 8:00 am David S. Reade: Global exchange of ideas and technologies in the field of geoscience information: the role of international meetings research and development.
8:30 am Priscilla P. Johansen: AMOCO'S Map Collection: Supporting Global Research and Exploration.
9:00 am Susan Klimley: Coordinating collection of foreign geologic survey and society publications in geologic libraries; the RLGeo experiment.
9:30 am Michael M. Noga and Charlotte R. M. Derksen: The world of geoscience serials; comparative use patterns.
10:00 am Lee C. Regan: International exchanges of publications; the U.S. Geological Survey Library System's perspective.
10:30 am Claren M. Kidd: Schemes for redistributing geological literature.
11:00 am Stanley Ruttenberg: International data exchanges through the World Data Centers; some new experiments in data management.
11:30 am Julian Green: Information transfer across political boundaries.

GIS 1991 SYMPOSIUM ABSTRACTS

Global exchange of ideas and technologies in the field of geoscience information; the role of international meetings.

READE, David S., Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario CANADA K1A 038

In the past, international meetings have been considered one of the primary mechanisms for the exchange of information and ideas. The emergence of affordable new technologies in such diverse fields as computing, high density data storage and telecommunications has essentially made the world a much smaller place. These developments force us to consider whether international meetings continue to be an effective forum for the exchange of ideas and technologies in the "new" global community.

This paper examines the value of international meetings by determining both the "obvious" and "hidden" outputs from a) the Fourth International Conference on Geoscience Information (GeoInfo IV) and b) COGEODOC, the International Union of Geological Science's Commission on Geological Documentation.

Special attention is given to the exchange of information, ideas and technologies between developed and developing nations. Problems unique to an international setting are discussed along with potential solutions. This study also provides recommendations on how the effectiveness of international meetings can be enhanced.

AMOCO's map collection; supporting global research and exploration.

JOHANSEN, Priscilla P., AMOCO Production Company, P. O. Box 3092, Houston, Texas, 77253

In their worldwide search for oil and gas, Amoco Production Company's geologists and other explorationists have a critical need for a broad spectrum of cartographic data. The map collection housed in the Houston Library Information Center exists to support the programs and projects undertaken by our employees.

This presentation will focus on typical as well as unusual means by which maps are selected and acquired for the collection. It will also discuss our tailored cataloging scheme and our unique, yet practical, way of storing maps which allows for easy access while protecting irreplaceable materials.

Coordinating collection of foreign geologic survey and society publications in geologic libraries; the RLGeo experiment.

KLIMLEY, Susan, Library, Lamont-Doherty Geological Observatory of Columbia University, Palisades, New York 10964

Coordination among US geology libraries of collection responsibilities for the geologic literature has seemed an obvious solution to rising publication costs and the impossibility of having the whole universe of publications available in one's home institution. Although foreign geologic survey and society publications are frequently not as expensive as commercially produced publications, obtaining this material--especially complete sets of titles--frequently requires correspondence, exchange agreements and persistence. Economies in staff time presumably could be realized if collection efforts were not duplicated in all libraries. Yet despite agreement on the potential benefits of coordination, little progress has been made at the national level.

It is the assertion of this paper that one reason for the relatively low level of coordinated collecting is the difficulty of establishing meaningful collecting commitments. Additionally, quality control, necessary for confidence in cooperative arrangements, is time-consuming on an intra-institutional basis. The RLGeo Project, initiated as a result of the 1986 Conoco Study, is an experiment in coordinated collection of geologic publications from 5 Latin American countries among 6 United States geology libraries. It is an attempt to work within the existing Research Libraries Group consortia utilizing an expanded conspectus to set up a cooperative collecting agreement and measure its effectiveness. Preliminary results of this five year project will be presented in this paper.

The world of geoscience serials; comparative use patterns.

NOGA, Michael M., UCLA - Geology/Geophysics Library, 4697 Geology Building, Los Angeles, California 90024-1567; DERKSEN, Charlotte R. M., Branner Earth Sciences Library, Mitchell Building, Stanford University, Stanford, California 94305

A major portion of the geoscience literature is published in serials. Geoscience journals and series are produced by societies, government agencies, commercial publishers, and research institutes in almost every country. How much of this information is used, and what are the use patterns? This study presents results from intensive use studies at two large academic geoscience libraries in California. Their serials collections together reflect the subject and geographic breadth of the geoscience literature. The use data show differential use patterns of various subject areas, such as geophysics and paleontology. Other comparisons include: the use of translation journals versus vernacular titles; the use of society publications versus commercially-published titles; the use of government publications versus commercially-published titles; the use of international journals versus regional titles; an analysis of the use of serials by the country of publication; and an analysis of the use of serials by the predominant language of the articles. These results provide an analysis of the international diffusion of geoscience information.

International exchanges of publications; the U.S. Geological Survey Library System's perspective.

REGAN, Lee C., U.S. Geological Survey Library, 950 National Center, Reston, Virginia 22092

Exchange operations are typically conducted by large research libraries as an adjunct to other acquisitions activities. However, exchanges denote a two-way interaction, providing for information dissemination as well as acquisitions. The official geoscience agencies of most states and countries of the world, as well as many museums and other special libraries, engage in exchanges. These can be utilized to benefit almost any institutional information environment.

This paper discusses several principles and rationales for establishing publications exchanges, with an emphasis on informal foreign exchanges. It describes types of exchange arrangements and highlights some practical issues related to maintaining the effectiveness and efficiency of exchange operations.

With an awareness of limitations and problems to be faced, a wisely monitored exchange program can result in significantly increased access to foreign geoscience literature and can promote international cooperation and understanding in science.

Schemes for redistributing geological literature.

KIDD, Claren M., Laurence S. Youngblood Geology Library, The University of Oklahoma, 100 E. Boyd R220, Norman, Oklahoma 73019-0628

What can individuals and libraries do with books, journals, and maps that they can no longer keep in their collection? Donations to libraries often yield titles that can be added to the library collection. However, some publications may duplicate the library holdings. These can be given to library users, sold to used book dealers, sold in library book sales, or placed in domestic or international libraries which need them. Removing materials from the library collection to relieve space constrictions or to eliminate multiple copies also yields materials available for redistribution. Societies, government agencies, publishers, foundations, and individuals have assumed varying responsibilities for collecting and/or sending these duplicate publications to libraries that can use them. Redistributing groups will be identified and their policies will be described. Usually, the sending group is responsible for getting the materials to the agency which will then send them to the recipient. Two examples of international distribution using different approaches are Books for Asia and the Smithsonian International Exchange Service (SIES). Books for Asia sends large quantities of materials to offices in Asia where libraries can choose the materials they want, whereas the SIES requires that the donor identify the library, the materials that the requesting library wants, and to box and label them to the Service's exact specifications. Future interactions between donors, recipients, and the groups willing to assist in meeting these goals will be proposed.

International data exchanges through the World Data Centers; some new experiments in data management.

RUTTENBERG, Stanley, Chairman ICSU Panel on World Data Centers, UCAR, P. O. Box 3000, Boulder, Colorado 80303

The International Council of Scientific Unions oversees a system of some 40 individual data centers, operated in China, Europe, Japan, USA, and USSR, at national expenses. The system was established in 1956 as a one-time data-management experiment to serve the data archiving needs for the International Geophysical Year; it proved so useful that it was then decided that it should, if nations would agree to continue its support, operate continuously since then to serve a continuing need for exchange and availability of geophysical data needed to study large-scale and global problems.

In this computer age, numbers in books do not represent useful data. Recently, some collaborative pilot programs have been undertaken to rescue older analog data, i.e., convert tabular numerical data to digital form so that the data can be manipulated by computer. The main pro-

duct of this data rescue experiment is to make older but valuable data on computer-readable media and distribute the data widely at low cost to users in all countries.

The recently inaugurated Global Change Program (International Geosphere-Biosphere Program) is developing some new data needs. For example, data describing the characteristics of the biosphere and its state are not readily available, but can be inferred to some extent globally from satellite observations. The World Data Center system is responding by undertaking a pilot Global Change Database Project centered on the global vegetation index, and making these data and a wide variety of related data available at small cost for use internationally. Many of the data sets, having been derived from a variety of sources, and for other purposes, are not yet suited to global change studies or resources management. The pilot project also undertakes to involve expert users in evaluating the database and in helping to improve the data sets. New additions are being considered to the WDC system to serve such global change studies as paleoclimate, and atmospheric chemistry.

Information transfer across political boundaries.

GREEN, Julian W., Library, University of South Carolina at Spartanburg, Spartanburg, South Carolina 29303

Evidence for both the need and reality of information transfer across political boundaries is ever-present, though the discrepancy between the two may be less apparent. We are part of one planet that is a web of economic, political, social and natural systems, all of which require efficient and effective information transfer for their management. Our greatest "successes" in information flow range from our species' noblest response to cries for relief from natural disasters to our more bellicose responses to screams for escape from perceived political emergencies. Information flow is essential and limitations to that flow are crippling.

In spite of the many individuals and organizations that work to increase information flow, we are painfully aware of filters that limit information transfer. Examples include filters that are created openly, covertly, or accidentally. These filters, which result from a lack of resources or inappropriately allocated resources, may be constructed between economic giants as they compete for existing and potential markets or constituencies, or between competitors of vastly different size or power.

When we cross political boundaries, be they internal or international, we find that the effects of these filters on information flow tend to be one way-- restricting the flow of information from the powerful to the less powerful, or from the developed to the less developed world. Specific cases are studied to describe the filters so that efforts can be made to limit their effectiveness in denying information to significant parts of the world.

GIS Technical Session
"Current Issues in Geoscience Information"
San Diego Convention Center Room 7B
Tuesday, October 22, 1:30 -3:45 pm

Dena Fraccolli, presiding

- 1:30 pm Mary B. Ansari and Glee Willis: Career expectations of geoscience and engineering branch librarians
- 1:45 pm Richard D. Walker: A study of the characteristics of the international conference of geoscience information
- 2:00 pm Mary A. Dale-Bannister, Raymond E. Arvidson, Edward A. Guinness, Susan H. Slavney, and Thomas C. Stein: Geologic Remote Sensing Field Experiment: the archive and its use
- 2:15 pm Denise A. Wiltshire and Bruce Molnia: ARCTIC DATA INTERACTIVE - an electronic science journal
- 2:30 pm John D. Kawula: Patents as a geoscience information source and their retrieval by using the CASSIS CD-ROM system
- 2:45 pm Kathryn Payne: Use of the proceedings of international conferences and symposia in geology as determined by citation analysis: a preliminary report
- 3:00 pm Connie J. Manson: Types and uses of geologic literature - A statistical analysis of 100 years of citations on the geology of Washington state
- 3:15 pm Suzanne T. Larsen: Bibliographic CD-ROMs in an earth sciences setting - a user study
- 3:30 pm Julie H. Bichteler: Geoscientists' access to publications of state geological surveys

GIS 1991 TECHNICAL SESSION ABSTRACTS

Career expectations of geoscience and engineering branch librarians

ANSARI, Mary B. and WILLIS, Glee, University of Nevada, Reno Library, Reno, NV 89557

Are future academic library administrators being trained in branch libraries or in more mainstream library departments? Theoretically, because of their broad and varied responsibilities, branch librarians should be very well qualified for promotion to the upper echelons of library administration. In the real world of affirmative action and national searches, however, possibly branch librarians are being overlooked in the recruitment of future library leaders.

A survey aimed at measuring the career expectations of academic branch librarians is being conducted at the University of Nevada, Reno. Some of the questions being asked are: (1) how do branch librarians perceive their opportunities for promotion to higher levels of library administration? (2) are most branch librarians so content

with their positions that they do not seek promotion to higher levels of management? (3) have the responding branch librarians ever applied for higher-level administrative positions, and if so, what was the outcome? (4) what are realistic career goals for branch librarians? (5) how can branch librarians enhance their promotional opportunities?

Plans are to disseminate the survey to several groups of science, business, law, arts and humanities branch librarians. Results will be compared among these groups to determine if there are any significant differences in their perceptions of promotional opportunities for branch librarians. The trial groups currently being surveyed are the academic sectors of the Geoscience Information Society (GIS) and the Engineering Library Division (ELD) of the American Society for Engineering Education. Results from the GIS and ELD surveys will be presented at the 1991 GSA meeting.

A study of the characteristics of the International Conference of Geoscience Information

WALKER, Richard D., School of Library and Information Studies, University of Wisconsin, Madison, 600 North Park Street, Madison, Wisconsin 53706

An analysis of the papers presented at the first three international conference of geoscience/geological information.

The first conference held in London, England in 1978, the second in Golden, Colorado, and the third in Adelaide, South Australia constitute a unique and emerging corpus of literature. The fourth conference, known as GeoInfo IV, has yet to be published and has been reported on elsewhere at the meeting by David Reade, one of the organizers for the Canada Geological Survey.

This analysis consists of a series of individual analyses, authors, their professional affiliations, subjects treated, kinds of papers or studies and the literature cited by authors in support of their presentations. Comparisons are made between the conferences and trends are noted and described as a guide to organizing committees for future conferences and their sponsors. Areas not covered are also noted and suggestions for future topics are made.

Geologic remote sensing field experiment: The archive and its use

DALE-BANNISTER, Mary A.; ARVIDSON, Raymond E.; GUINNESS, Edward A.; SLAVNEY, Susan H.; STEIN, Thomas C.; McDonnell Center for the Space Sciences, Department of Earth and Planetary Sciences, Campus Box 1169, Washington University, 1 Brookings Drive, St. Louis, MO 63130

The Geologic Remote Sensing Field Experiment (GRSFE) was performed in July and August of 1989. It included

both airborne and ground-based components and involved a total of 16 experiments. The Version 1.0 Archive Release occupies a set of 9 CD-ROMs. The data are organized by experiment, and are accompanied by object-oriented labels and tabular label information suitable for loading into data base management systems. There is also an extensive text file stored on the first CD-ROM that details each individual instrument involved in GRSFE and describes the overall objectives and implementation of GRSFE. The GRSFE data set is described in the Planetary Data System Catalog. The collection may be ordered through the catalog or through the NSSDC.

The objective of having simultaneous airborne and ground-based components was to acquire an information base to test theories for the extraction of surface properties using remote sensing data. For example, in the Visible/Near Infrared region, airborne data were acquired using AVIRIS and ASAS while ground-based data were acquired using a Daedalus hand-held spectrometer, SIRIS, and PIDAS. The airborne instruments were flown over ground-based field sites in the Lunar Crater Volcanic Field, allowing data from the two airborne instruments to be compared to one another, and to data from the ground instruments. This method also permits evaluation of calibration, atmospheric models, and models used to extract surface properties. Comparison for the data collected from different ground-based instruments allows assessment of instrument strengths and weaknesses.

In addition to the Visible/Near Infrared, the Thermal Infrared (using TIMS) and Radar wavelengths (using AIRSAR) are covered by the data set. Additional ground measurements increase the efficacy of all the airborne data, making the GRSFE data set particularly appealing for use in teaching remote sensing at all levels.

Arctic Data InterActive - An electronic science journal
WILTSHIRE, Denise A., and MOLNIA, Bruce, U.S. Geological Survey, 801 National Center, Reston, Virginia 22092

Multimedia computer technology offers exciting new possibilities for communicating complex scientific processes. Through the use of computer graphics, satellite imagery, and animation, data and information can be visually depicted in ways to enhance analysis of earth science phenomenon, such as sea floor spreading, plate tectonics, and sea ice concentrations. In 1990, the U.S. Geological Survey and several other Federal agencies agreed to use multimedia technology to promote access to data and information of the global change research community. To meet this goal, a project was established to design and implement a prototype of an electronic science journal. The objective of the project, known as the Arctic Data InterActive (ADI), was to integrate a variety of scientific information, including complete text of scientific papers,

numeric and spatial data sets, and related software for data analysis. The Arctic was selected as the theme of this data management study because it is one of the first geographic regions to respond to changing climate. The design of ADI is based on hypertext technology. Hypertext, also known as hypermedia, is defined in the computer and information science literature as a software environment for developing non-sequential data base management systems. Hypertext techniques provide the capability to create associative links between structured and unstructured information that may include data, text, graphics, imagery, and sound. A hypertext link, which is conceptually similar to a footnote or a parenthetical phrase, directs the reader to related points or topics for further research.

Hypertext technology allows easy access to a mix of information through the use of a graphical user interface. The use of icons for representing different system functions allows readers to browse through information by following associative links between bibliographies, numeric data, textural information, and spatial imagery.

Patents as a geoscience information source and their retrieval by using the CASSIS CD-ROM system

KAWULA, John D., Science Reference Librarian,
University of Idaho, Moscow, Idaho 83843.

Patents are important sources of scientific and technical information which are used in a variety of contexts. Approximately 80% of the scientific information contained in patent documents does not appear in other forms of literature. Ironically patents are an underused source of information in most fields of science and technology.

Although few authors have written about patents as geoscience document types, it is apparent that a sizeable number of patents contain information pertinent to the geoscience fields. Realistically, patents will always be a relatively minor form of geoscience literature. The high cost of searching patent databases or the labor of a manual search is further discouragement.

A procedural problem also exists in accessing patents. Patents are usually classified by each national patent office according to either the International Patent Classification or their unique national code. Subject-oriented indexes using the vocabulary and indexing structure most common in their fields may miss closely-related patents. Studies have shown that even full text searching may fail to retrieve all relevant items. Therefore, it is often advantageous to search a base devoted exclusively to patents which allows access by the originally-assigned classification structure. However, most of these bases are expensive. There are several patent CD-ROM products on the market. One such product is CASSIS, produced by the U.S. Patent and Trademark Office and available to the public free of charge at patent depository libraries (PDLs). CASSIS permits access to U.S. patents by the classifica-

tion codes and also permits limited access by keyword title, author, and assignee. The PDLs have also been issued discs with Japanese patents for 1986-1988. Patents may be searched by the English keyword for the titles and abstracts, International Patent Code and the English transliteration of the author's name.

A prototype disc with the published Patent Cooperation Treaty (PCT) international applications from 1983-1989 has also been issued to the PDLs. Access is possible by keywords for English or French titles and abstracts, and International Patent Codes.

The use of the CASSIS system, with geoscience examples for U.S. and Japanese patents and international applications is presented. Knowledge of these resources and free availability of the indexing systems may encourage greater use of patents by geoscience researchers.

Use of the proceedings of international conferences and symposia in geology as determined by citation analysis: A preliminary report

PAYNE, Kathryn, Ablah Library, Wichita State University, Wichita, KS 67208; MERRIAM, Daniel F., Kansas Geological Survey, University of Kansas, Lawrence, KS 66047.

It is a truism in the sciences that papers published in the proceedings of international conferences and symposia are seldom read and rarely cited. If true, this would argue against library purchases of such proceedings in an era when budget limitations demand librarians focus on materials that will be used. To test this assumption, it was decided to do a citation analysis on the international proceedings of conferences and symposia in the areas of geomathematics, geostatistics, and computer applications in the earth sciences. The field of numerical geology is both compact enough, because of its youth, and sufficiently international in scope, because of wide interest in these areas, to provide an appropriate sample for citation analysis. Preliminary results suggest that, at least in the fields studies, such proceedings are, in fact, well cited, and thus presumably widely read. Where such proceedings are not cited, the common denominators seem to be publication in forms which are difficult to access and/or a very narrow focus, for example, the use of geostatistics in the mineral industries.

Types and uses of geologic literature - A statistical analysis of 100 years of citations on the geology of Washington State

MANSON, Connie J., Washington Division of Geology and Earth Resources, Olympia, WA 98504

About 19,000 items on the geology and mineral resources of Washington State have been issued from 1891 through 1990. An analysis of this data set by date (in 5-year

increments) shows the familiar exponential growth of the information explosion. An analysis by type shows that, overall, about 30% of these items are abstracts; 40% are papers published in journals or compiled volumes; and 30% are monographs, including state and federal documents and theses. These percentages have changed over time, indicating publication trends by type. For this data set, the relative percentages of papers published in journals has declined, papers published in compiled volumes has increased, and conference abstracts have had the highest rate of increase.

Citation analysis, while innately biased, provides insights into the use and relative importance of this literature. In the 600 references cited in the Geologic Map of Washington--Southwest Quadrant (1987) and --Northeast Quadrant (1991), some data types were represented differently than in the full data set: abstracts are 5% of the citations but 30% of the data set; theses are 24% of the citations but 8% of the data set; and state agency monographs are 15% of the citations but 5% of the data set.

The older materials (1891-1960) are still being used: 1.8% of all materials 1891-1960 were cited in the SW and NE quadrants and the oldest citation there is an 1899 paper in GSA Bulletin. The newer materials (1961-1990) were cited at a relatively constant rate: an average of 4.2% of all materials 1961-1990 were cited, including 4.9% of the items issued 1961-1965 and 4.9% of the items issued 1981-1985.

This analysis shows the patterns of geologic literature use in the compilation of two large maps. Other types of geologic reports have other kinds of literature use patterns.

Bibliographic CD-ROMs in an earth sciences setting - A user study

LARSEN, Suzanne T., Earth Sciences Library, University of Colorado, Campus Box 184, Boulder, CO 80309; ANDREWS, Martha, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado, Campus Box 450, Boulder, CO 80309.

The Earth Sciences Library and the INSTAAR Reading Room at the University of Colorado, Boulder have both recently acquired several bibliographic CD-ROM databases. This paper examines end-user interaction with these databases.

A literature search revealed that while CD-ROM user studies abound, none had been published using these databases or with geoscientists as end-users. The present study builds on work already done on information seeking techniques by geoscientists [Bichteler and Ward, 1988, 1989 and Andrews, 1990, (unpublished)]. Its primary goals were to: 1. identify various characteristics of the users such as level of subject expertise and searching experience, 2. identify how the user found out about the database and what sort of training was received in its use,

and 3. ascertain the user's satisfaction with information found in the database.

The results indicate that graduate students are the heaviest users and are very pleased with the results. Most users were made aware of the system by the library staff, with a few hearing of it from professors and associates. Those who used the system with the help of library staff were the most satisfied with the results. There was a very high rate of repeat use, indicating satisfaction with the system.

Implications are that this type of information access is very well received by end users, all of whom indicated that they preferred it over the paper indices. It was also evident that weekend users (when no librarian or staff member was present) found the system more difficult to use. This indicates a need for contact with staff members or librarians in order to insure productive searches.

Geoscientists' access to publications of state geological surveys

BICHTELER, Julie H., Graduate School of Library and Information Science, The University of Texas at Austin, Austin, TX 78712.

State geological surveys produce an impressive variety of publications. Often containing information found nowhere else, these maps, reports of investigations, information circulars, bibliographies, bulletins, special papers, open-file reports, and software are a valuable resource for the geological community.

Access to these publications has been of continuing concern. Traditional listing in survey catalogs and state indexes has been augmented by increased coverage by information services such as GeoRef. In studying the information-seeking behavior of geoscientists, however, several questions arise. To what extent do geologists actually use bibliographic sources to locate such publications? Do most users depend on word-of-mouth, friends, contacts or personal experience in the survey, or other informal means to locate publications of interest? How can access be improved?

This study investigates the methods by which geologists locate survey publications of interest, i.e. those actually cited in their recent publications. A short and simple survey instrument solicits the actual mechanism by which a geologist became aware of a survey publication which he or she cited recently and the reasons for not employing formal channels, if such was the case. Results suggest implications for provision of geoscience information in both formal and informal modes, emphasizing effectiveness and use.

GIS 1991 ANNUAL MEETING NOTES

Geoscience CD-ROM Workshop

Sunday, October 20, 1991

1:30 - 4:30

Marriott Marina Ballroom D

The details of the CD-ROM workshop have changed somewhat with the news that OCLC will not be supporting the Search CD450 products after October 1st. The products we wanted to cover in the workshop included Selected Water Resources Abstracts and the Earth Sciences databases. SilverPlatter is going to be producing the disks after that date, and the databases will be searchable using the SilverPlatter interface. However, there is no guarantee that SilverPlatter will have produced the disks by the time of the conference, and in fact, it is very unlikely. As a replacement for the OCLC databases, we have asked the NISC DISC company to describe and let us try out their products. They have a growing set of CD-ROMS in the Earth Sciences, among them Selected Water Resources Abstracts for the US and for Canada, Earth Resources, and the Arctic and Antarctic Regions disc, which includes 6 databases relating to polar regions. We are hoping they will accept our offer to attend.

GeoRef and the USGS Publications disks will be highlighted at this workshop. We do have a minimum of 3 workstations available from SilverPlatter for hands-on searching of GeoRef, and hope to get at least two more. The vendor representatives will do the main presentation, but members of the Steering Committee plus Sharon Tahirkheli will be available to help with the hands-on searching. This will also be a good time for those experienced with the GeoRef CD interface to offer your opinions on the user interface directly to SilverPlatter. Although our users generally like the product a lot, the interface does have some awkward features. The CD-ROM workshop is limited to 30 people, and advance registration is encouraged, although there is no fee.

Since I will be on leave from work (due to taking geology fieldwork courses full-time this fall), and unable to attend the conference, the following people have graciously agreed to facilitate these workshops and meetings. Please contact them starting on 9/9 if you have any questions about these events.

CD-ROM workshop: Joanne Lerud

GeoRef Online workshop: Sharon Tahirkheli

GeoRef Users Group Meeting: Suzanne Larsen

GIS Database Forum
Monday, October 21, 1991
2:00 - 4:00 pm
Marriott Marina Ballroom G

Several diverse databases are scheduled to be presented at the Database Forum.

ENVIRO/ENERGYLINE Abstracts Plus: This set of 3 databases, now available on CD-ROM, covers the fields of energy, the environment, and acid rain. The files include coverage from 1971 to the present. The speaker will concentrate on specific topics covered in the abstracts of interest to earth scientists.

GeoIndex (USGS): The speaker will focus on the relative strengths and weaknesses of the CD-ROM version of this database (currently available on OCLC Earth Sciences) versus the paper indexes.

1:100,000 Digital Line Graph CD-ROM: The 1:100,000 DLG CD-ROM is due out (on depository) at the end of August. The speaker will demonstrate the software, as well as discuss the coverage and some possible applications for the product.

Earthquake Digital Data CD-ROM: The USGS's National Earthquake Information Center is producing a serial covering digital data on earthquakes of magnitude 5.5 or greater. Data available covers 1980 forward, in 8 volumes (disks) to date. The speaker will show how to use the database.

Questions from the audience are encouraged.

GeoRef Users Group
Wednesday, October 23, 1991
10:30 - noon
Marriott Warner Center

The agenda includes an update on GeoRef and AGI by John Mulvihill, and a short summary of the first analysis of the GeoRef on CD survey. Thanks to everyone who returned a survey form! If you haven't, it's not too late, as long as you do it by 9/7. We will also be hoping to have a section of the meeting devoted to sharing information with the group about online and CD-ROM searching issues.

Do you have any journals you would like to see indexed more quickly in GeoRef? We are working on revising the GeoRef Core List, which involves adding some new titles to the list, and perhaps removing some. If so, contact Reggie Brown, Barbara DeFelice, Marie Dvorzak, or Julie Triplehorn

GIS Field Trip to Scripps Institute of Oceanography
Thursday, October 24, 1991
9 am - 4:15 pm
Meet outside San Diego Convention Center

Plans for the GIS field trip to Scripps Institute of Oceanography have been finally completed. We will be leaving the Convention Center promptly at 9:00 am and plan to return by 4:30 pm. We will depart and return to the field trip departure center which will be well marked by the San Diego State field trip coordinators.

To make your reservations for the visit please fill out the reservation form at the bottom of the field trip flyer and return to Barbara Haner. We are limited to 40 people so plan to return your form promptly. You will receive a confirmation postcard which should be presented on the bus.

Peter Brueggeman will be our host at Scripps and has contacted the researchers who will be showing us the core facility, hydraulics laboratory, and pier. If you have always wondered what made Scripps a world renowned oceanographic research institute, plan to be on this trip to sample a unique resource, experience its special ambience, and walk along a Pacific beach after a week of meetings and crowded convention halls.

Questions? Enquiries? Barbara Haner will try to answer them and can be reached at 714/787-3511 or by e-mail Haner@ucrvms.

COMMITTEE REPORTS

NOMINATING COMMITTEE

The Nominating Committee is pleased to announce the following election results: Vice President/President-Elect, Louise Zipp; Treasurer, Barbara DeFelice.

We extend our hearty congratulations to the winners and wish them the very best in their future GIS endeavors. We are extremely grateful to candidates Midge King and Sharon Tahirkheli for their impressive contributions to the Society and their willingness to run.

Respectfully submitted,
Mary Ansari, Chair

COLLECTION DEVELOPMENT ISSUES COMMITTEE

SERIAL CANCELLATIONS: Feeling down in the dumps about serial cancellations? You're not alone! As serial costs continue to rise at staggering rates, even libraries with generous serial budget increases are faced with the necessity of cancelling hundreds of dollars of

serials. As a result many earth science libraries are going through soul searching serial reviews trying to identify titles that can be "done without."

What's a librarian to do? One thing you can do is to contribute your list of serial cancellations to the GIS serial cancellation database. Participation in the GIS serial cancellation database will let you see how your cancellation efforts fit into cancellation projects occurring in earth science libraries all over the country. Additionally it will help all of us identify subject areas and titles that are being widely cancelled and therefore potentially in danger of being less available through interlibrary loan. Please send your list of cancellations to:

Susan Klimley
Lamont-Doherty Geological Observatory
Palisades, New York 10964

We are primarily interested in "last copy" cancellation, so if you are cancelling duplicate subscriptions that information would be helpful to us. Names of institutions cancelling are not used in the database.

FROM THE PUBLICATIONS MANAGER

INDEXING AND REVIEWING THE GIS PROCEEDINGS

The Society's major publication is its annual Proceedings volume. With its sale, we are disseminating information presented at the annual Symposium and Technical Session. Sales also support the Society's activities. Copies of each new Proceedings volume are made available at no charge for indexing and reviewing. Each is accompanied by a letter requesting that the recipient index, review or announce the volume, as appropriate.

Review copies are sent to: Baseline; Meridian; College and Research Libraries; ACMLA; EOS; Episodes; Geotimes; Special Libraries; SLA G & M Div. Bulletin; and WAML Information Bulletin.

Copies for indexing are sent to: Books in the Earth Sciences...; Conference Papers Index; Information Science Abstracts; Geo Abstracts; GeoRef; INIST; ISI; Institut Nauchnoi Informatsii (Referativnyi); Interdok; Library & Information Science Abstracts; and Library Literature.

We would welcome an opportunity to expand this activity, particularly into foreign review and indexing media. Please send your suggestions, along with addresses, to the Publications Manager. Thank you for your help.

Respectfully submitted,
Louise Zipp

ANNOUNCEMENTS

OCLC Search CD450 Databases to be available from SilverPlatter

OCLC has announced a strategic alliance with SilverPlatter to produce the Search CD450 compact disks, including the Earth Sciences Database and Selected Water Resources Abstracts. OCLC will continue to produce the updates until SilverPlatter is ready to produce them. Search CD450 subscribers will have the opportunity to transfer their subscriptions to SilverPlatter and receive the equivalent SilverPlatter disks and software at no additional cost or to cancel their subscriptions and receive a prorated refund. For their first renewal under SilverPlatter, Search CD450 subscribers who transfer will also be able to renew their subscriptions at the current OCLC prices. The SilverPlatter subscription price has not yet been announced.

NEW PHONE NUMBERS FOR THE GSC, OTTAWA

The telephone numbers of the Geological Survey of Canada Library in Ottawa have been changed to: 613/996-3919 and 613/996-1551. Their new fax number is 613/943-8742.

SUPERSEDED USGS OPEN-FILE REPORTS

A list of USGS Open-File Reports which have been superseded by USGS published reports appeared in Administrative Notes, v. 12, no. 6, 1991, p. 29-37. That list is too voluminous to reprint here; please consult the article.

MEMBERS IN THE NEWS

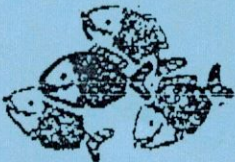
DOROTHY McGARRY, Head, Cataloging Division, Physical Sciences and Technology Libraries, University of California, Los Angeles, has received the Special Library Association's John Cotton Dane Award. The award was announced at the SLA Winter Meeting, January, 1991.

PATRICIA SHEAHAN is co-editor of the NUNA Conference Volume, Greenstone Gold and Crustal Evolution, available from the Geological Association of Canada. (See the Publications section for ordering information.)

Geoscience Information
Society
visit to

Scripps Institute of Oceanography

Thursday October 24



COST \$20 - Price includes box lunch

MEETING TIME 8:45 am - DEPART - 9:00 am - RETURN 4:30 pm

MEET AT - Field Trip Departure Center
San Diego Convention Center

Visit will include tours of the core facility, hydraulics laboratory, library and archives. We will be able to enjoy the coastal geomorphology from Scripps Pier. After, there will be time to take a beach walk or visit the book shop and aquarium, or pursue your own special interests.

----- DETACH HERE -----

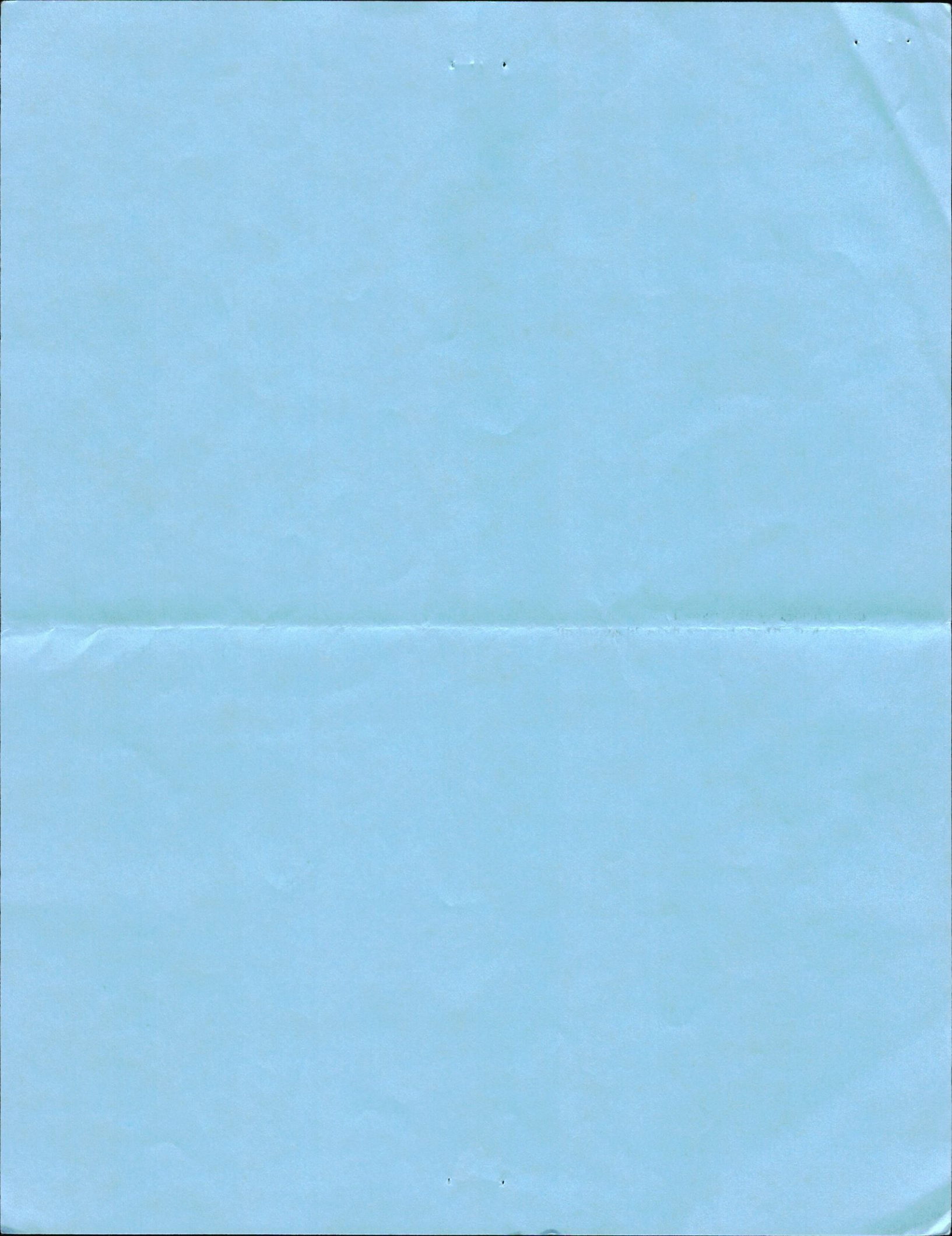
RESERVATION FORM

I wish to reserve _____ place(s) for the GIS Field Trip to the Scripps Institute of Oceanography. I enclose a check for \$_____ for the excursion. Reservations should be accompanied by payment. Please make checks payable to GIS.

Name(s): _____
Address - Library/Information Center: _____
Institute: _____
Street/P. O. Box: _____
City: _____
State, Zip, Country: _____

Send to: Barbara E. Haner
Physical Sciences Library
University of California, Riverside
P. O. Box 5900
Riverside, CA 92517

Enquiries: phone 714/787-3511



THE DIGITAL DATABASE FORUM

USGS, Again

by

Jim O'Donnell

Geology and Planetary Sciences Library

Caltech

Pasadena, Calif.

Before I launch into this latest disquisition on the USGS as our primary disseminator of digital stuff, one news note: OCLC's Search CD-450 line of CD-ROMs has been sold to SilverPlatter. That means that those of us who subscribe to Earth Sciences (and any other OCLC science title) will soon receive new search software and documentation from SilverPlatter. OCLC thus becomes the first (as far as I can tell) casualty in the CD-ROM wars. They're going into the online database market in a big way instead of selling CDs.

USGS Open-File Reports

Those of you who haven't been religious about reviewing New publications of the U.S. Geological Survey's lists of Open-File Reports may be in for a bit of a shock. List 993 (April, 1991) announces 58 OFRs. Of these, depository libraries will never see any sign of 28--almost half. That's because those 28 consist of:

- diskettes only (22)
- diskettes and text (4)
- 102 slides (1)
- 1 video (1)

There are a total of 48 diskettes announced. Many of them are analytical stream-sediment data for various rivers, so, if you're like me and only buy selectively (and don't buy hydrology), that's no big deal. However, it's important to remember: if you're not spending major dollars, you're not collecting all OFRs. Don't be overly confident of the completeness of your depository collection, because USGS sure isn't.

USGS has handled the OFR data problem in several ways. One is to issue the documentation as a separate OFR, so that you at least get that on depository. 87-496-A is documentation for GSDRAW and GSMAP version 4.0. 87-496-B, C, and D are the programs themselves. The text OFR usually comes on depository, the disks always have to be purchased.

Another method has been to issue both text and diskettes as one OFR. The problem here is that you never

get any text documentation at all. I prefer the separate issues to this technique.

A third method of handling the data question has been to issue two or more versions of the data. 89-607-A is Earthquake data report for June 1989, 269 pages on fiche, and came on depository. 89-610-B is the same data, but on three 5.25" diskettes, which must be purchased. This is actually the best of all, because you get your data in some format, and if a patron wants to use it in digital form, he or she can go off and buy a copy for their own use, or key what is needed, just like old times.

Okay, so what's new besides a lot of data you might not care about having in digital form, or might not even want, digital or not? USGS has continued to issue various databases and programs, and I'm concentrating here on a few that are useful in the library.

89-0306 [A-E] Gerlitz, Carol N.; Leonard, B. F.; Criddle, A. J., 1989, QDF database system, version 1.0--Reflectance of ore minerals--A search-and-match identification system for IBM and compatible microcomputers using the IMA/COM quantitative data file for ore minerals. (2nd issue, June 27, 1989.)

This Open-File Report comes in 5 parts. A is program documentation in paper copy. B is the documentation on a diskette. C and D are the executable program disks, C being for a serial port plotter and D for a parallel port plotter. E is the QDF database itself.

This is a handy reference tool to have around, even if you don't have a plotter attached to your computer. Charts are quickly retrieved and displayed on the computer screen, and the data can be transcribed by hand if necessary. QDF is a database program itself, and the menu allows you the option of adding your own reflectance data to the sample. It's very easy to use, and I think it's a handy adjunct to MINERAL, the database from Aleph Enterprises demonstrated at the Database Forum last year in Dallas.

90-0466 [A-P] Luttrell, G. W.; Hubert, M. L.; Murdock, C. R., 1990, GEONAMES data base of geologic names of the United States through 1988.

This OFR supersedes 88-0040, and is on 16 diskettes rather than 14. This is one of the databases that USGS should be thinking about dumping onto a CD-ROM, and the sooner the better. It took me too long to upload all 59 files (one for each state and territory of the U.S.), and much longer to load those files into an integrated file on my database manager. Once it was loaded it ran just fine, although I wish they'd replace all those alpha and numeric codes with the real terms: it'd be much more user-friendly. However, this is the only place you'll get this information, and if you gotta have it, you gotta have it. This time around it costs about \$100.

90-0229

Selner, Gary I.; Taylor, Richard B., 1990, GSREF version 4.0--A bibliographic reference system for the IBM PC and compatible microcomputers.

This is another handy little program, but primarily for giving to people who ask how to handle their bibliographic references for not very much money. Documentation and program are on the same disk, all for \$4.

90-0485

Pantes, Michael, 1990, Library SEARCH routine.

A program designed to "locate an entry in a bibliography file and write that entry to the user's terminal." It's not a bad idea to have it around, because it can look for data in a file that you didn't create, or that you don't have the software it was created with. \$6.

NEW GIS MEMBERS

Nancy G. Blase
10751 Durland Avenue N.E.
Seattle, WA 98125

Frances Clark-Fielder
6126 Magnolia Street
Katy, TX 77493

Johanna Cooper
14-375 Kingscourt Drive
Waterloo, Ontario
Canada N2L 3G1

Sonia Dupuis
2700, Einstein
P. O. Box 7500
Ste-Foy, Quebec G1V 4C7
Canada

Kathleen M. Johnson
651 U.S. Courthouse
W. 920 Riverside Ave.
Spokane, WA 99201

Carol J. La Russa
Physical Sciences Library
University of California, Davis
Davis, CA 95616

Suzanne Larsen
4000 Carlock Dr.
Boulder, CO 80303

Julia Lewis
Smithsonian Institution
Global Volcanism Program Archive
NHB Mail Stop 119
Washington, D.C. 20560

Kathleen Marie Minck
Petroconsultants S.A.
8-10 Rue Muzy
1211 Geneva 6
Switzerland

Elinor Rodgers
1800 Washington Road
Pittsburgh, PA 15241

Ira Sasowski
Dept. Geoscience
Deike Blds
University of Pennsylvania
University Park, PA 16802

Stephen G. Starr
14707 Knightsway Drive
Houston, TX 77083

Ellen Mallory Sweet
P. O. Box 2988
Iowa City, IA 52244-2988

Attn: Connie L. Hall
Tyrrell Museum of Palaeontology
Library
Box 7500
Drumheller, Alberta T0J 0Y0
Canada

Barbara Zinter
715-5th Avenue S.W.
Calgary, Alberta T2P 2X7
Canada

DUPLICATES EXCHANGE LIST -- USGS LIBRARY

The following items are available on a first come first served basis until October 11 from the Exchange & Gift Unit, USGS Library, 950 National Ctr., Reston, VA, 22092. Please enclose mailing labels with request.

- Active Tectonics. National Academy Press. 1986.
- Adirondack Igneous Rocks and their Metamorphism. A.F. Buddington. (GSA Memoir 7). 1939.
- Ages of Rocks, Planets, and Stars. Henry Faul. 1966.
- Annotated Bibliography Pre-1970 A.D.. (Saudi Arabia Mineral Resources Bulletin 19). 1980.
- Annotated Bibliography 1970-1975 A.D.. (Saudi Arabia Mineral Resources Bulletin 20). 1977.
- Annotated Bibliography 1396-1400 A.H. (1976-1980 A.D.). (Saudi Arabia Mineral Resources Bulletin 27). 1981.
- Atlas System of Morocco. Somdev Bhattacharji et. al. 1988.
- Avalonian and Cadomian Geology of the North Atlantic. R.A. Strachan et. al. 1990.
- Bibliography of computer applications in the earth sciences: 1948-1970, compiled by D.F. Merriam. (Computers & Geosciences, vol. 14, no. 6). 1988.
- Carbonate-Siliciclastic Mixtures. David A. Budd et. al. 1990.
- Chemical Geology: vols. 75, nos. 1-4, 1989; 76, nos. 1-4, 1989; 77, nos. 1, 2, 1989; 78, nos. 2-4, 1989; 81, nos. 1-4, 1989; 82, nos. 1-4, 1989; 83, nos. 1-4, 1989; 84, nos. 1-4, 1989; 84, nos. 1-4, 1990.
- Cities and Geology. Robert F. Legget. 1973.
- Computers & Geosciences: vol. 9, nos. 2-4, 1983; 10, nos. 1, 1984; 11, nos. 1, 1984; 12, nos. 1, 2, 4, 1986; 14, nos. 1-6, 1988; 15, nos. 1-8, 1989; 16, nos. 1, 2, 1990.
- Decouverte Geologique du Languedoc Mediterranee. Jean-Claude Bousquet et. al. 1980.
- Dictionary of Geological Terms. American Geological Institute. 1962.
- Earth Manual: A Water Resources Technical Publication. U.S. Bureau of Reclamation. 1974.
- Earthquakes at North-Atlantic Passive Margins: Neotectonics and Postglacial Rebound. Soren Gregersen et. al. (NATO Advanced Studies Inst. Series C, vol. 266). 1989.
- Earth Revealed: Aspects of Geologic Mapping, by Ralph E. Ehrenberg. 1989.
- Earth's Age and Geochronology. D. York. et. al. 1972.
- Earth's Dynamic Systems. W. Kenneth Hamblin. 1975.
- Earth's Mantle. T.F. Gaskell. 1967.
- Erosion Transport and Deposition Processes. D.E. Walling et. al. (IAHS Publication No. 189). 1990.
- Evolution and Mineralization of the Arabian-Nubian Shield. King Abdulaziz University / Pergamon Press; 1979. (I.A.G. Bulletin no. 3). Volume 2.
- Evolution of the Congo Basin. A.C. Veatch. (GSA Memoir 3). 1935.
- Excursions in Southwestern Ontario. Canada Geological Survey. (Guidebook no. 4). 1913.
- Field Geologists Manual, D.A. Berkman. Australasian Institute of Mining and Metallurgy (Monograph no. 9). 1989.
- Field Trips in Midwestern Geology. Robert H. Shaver et. al. 1983.
- Flood Hydrology. Vijay P. Singh. 1987.
- Floods: Hydrological, Sedimentological and Geomorphological Implications. Keith Beven et. al. 1989.
- Forest Hydrology and Watershed Management. R.H. Swanson et. al. (IAHS Publication No. 167). 1987.
- Formation Evaluation II: Log Interpretation. Norman H. Foster et. al. (Treatise of Petroleum Geology Reprint Series, no. 17). 1990.
- General Geology, second edition. Robert J. Foster. 1973.
- Geochimica et Cosmochimica Acta: vols. 52, nos. 1-12, 1988; 53, nos. 1-12, 1989.
- Geological Applications of Wireline Logs. A. Hurst et. al. (GSA Publication no. 48). 1990.
- Geological Atlas of Japan. Geological Survey of Japan. 1982.
- Geological Society of America Bulletin. v. 79, 1968 - v. 85, 1974; v. 90, 1979 - v. 101, 1989.
- Geological Society of America Cincinnati '81 Field Trip Guidebooks: Volume II, Economic geology, structure. Thomas G. Roberts. 1981.
- Geology of the Dorset Coast. Michael House. 1989.
- Geology of the Porphyry Copper Deposits Southwestern North America. Spencer R. Titley et. al. 1966.
- Geophysics I: Seismic Methods. Edward A. Beaumont et. al. (Treatise of Petroleum Geology Reprint Series, no. 12). 1989.
- Geophysics II: Tools for Seismic Interpretation. Edward A. Beaumont et. al. (Treatise of Petroleum Geology Reprint Series, no. 13). 1989.
- Geophysics III: Geologic Interpretation of Seismic Data. Edward A. Beaumont et. al. (Treatise of Petroleum Geology Reprint Series, no. 14). 1989.

- Geophysics IV: Gravity Magnetic, and Magnetotelluric Methods. Edward A. Beaumont et. al. (Treatise of Petroleum Geology Reprint Series, no. 15). 1989.
- Geotimes: Vols. 25, nos. 1, 2, 4-12, 1980; 26, nos. 1-12, 1981; 27, nos. 1-12, 1982; 28, nos. 1-12, 1983; 29, nos. 1-12; 30, nos. 1-12, 1985; 31, nos. 1-2, 1986; 32, nos. 1-4, 6-12, 1987; 34, 1, 2, 4-6, 10, 12, 1989; 35, nos. 1-4, 6-12, 1990; 36, nos. 1, 2, 4-6, 1991.
- Geothermal Technoecosystems and Water Cycles in Arid Lands, by Christopher Duffield. (Arid Lands Resource Information Paper No. 8). 1976.
- Geowriting; A Guide to Writing Editing, and Printing in Earth Science. Wendell Cochran et. al. 1973.
- Glacial and Pleistocene Geology. Richard Foster Flint. 1957.
- Glaciers and Glaciology of Alaska. Robert M. Krimmel et. al. 28th IGC Field Trip Guidebook (T301). 1989.
- Global 2000 Report to the President - Entering the Twenty-First Century. Council on Environmental Quality and the Department of State, (vol. 1). 1977.
- Global 2000 Report to the President - The Technical Report. Council on Environmental Quality and the Department of State, (vol. 2). 1977.
- Glossary of Geology. Margaret Gary et. al. 1972.
- Glossary of Geology and Related Sciences. J.V. Howell. 1957.
- Glossary of Geology and Related Sciences (with supplement). J.V. Howell. 1960.
- Groundwater as a Geomorphic Agent. R.G. La Fleur. (Binghamton Symposium in Geomorphology: International Series, no. 13). 1984.
- Guidebook for Field Conference C: Upper Mississippi Valley. Robert F. Black et. al. (International Association for Quaternary Research VIIIth Congress). 1965.
- Guidebook to Studies of Land Subsidence due to Ground-Water Withdrawal. Joseph F. Poland. 1984.
- Guides to Southeastern Geology. Richard J. Russell. 1955.
- Himalayan Mountain Building. P.S. Saklani. 1989.
- Hydrogeological Mapping in Asia and the Pacific Region: Proceedings of the ESCAP-RMRDC Workshop Bandung, 1983. G. Castany et. al. (Volume 7). 1985.
- Hydrogeological Regimes and their Subsurface Thermal Effects. Alan E. Beck et. al. (Geophysics Monograph 47, IUGG vol. 2). 1989.
- Hydrogeology of Karstic Terrains. A. Burger et. al. (IUGS Series B - No. 3). 1975.
- Hydrology of the Nile Basin. Mamdouh Shahin. (Developments in Water Science No. 21). 1985.
- Hydrothermal Mineral-Forming Solutions in the Areas of Active Volcanism. S.I. Naboko. 1974.
- Introduccion a los Minerales de Espana. Instituto Geologico y Minero de Espana. 1979.
- Journal of African Earth Sciences. Vols. 1 nos. 1-4, 1983; 2, nos. 1-4, 1984; 3, nos. 1, 2, 4, 1985; 4, nos. 1, 1986; 5, nos. 2-6, 1986; 6, nos. 1, 2, 1987.
- Land Subsidence Symposium Subsidence Terrestre. International Association of Hydrological Sciences. (IAHS-AISH Publication No. 121). 1977.
- Lao People's Democratic Republic; explanatory brochure (and maps). UNESCAP, 1990. (Atlas of Mineral Resources of the ESCAP Region, vol. 7). 1990.
- Late Quaternary Development of the Champlain Sea Basin. N.R. Gadd. (GAC Special Paper 35). 1988.
- Metallogenesis and Mineral Ore Deposits: Proceedings of the I.G.C. Moscow 4-14 August 1984. (Volume 12). 1984.
- Metamorphism and Tectonics of Eastern and Central North America: 28th I.G.C. (3 vols.). 1989.
- Mineral Deposits in Western Saudi Arabia - A Preliminary Report. (Saudi Arabian Project Report 201). 1975.
- Minerals Yearbook. U.S. Bureau of Mines. Vols: 1-3 1982; 1-3 1983; 2, 3 1987
- Mission Franco-Chinoise au Tibet 1980. J.L. Mercier et. al. 1984.
- Modern Quaternary Research in Southeast Asia. Gert-Jan Bartstra et. al. (Volume 11 1988- 89). 1990.
- North Atlantic--Geology and Continental Drift: A Symposium, by Marshall Kay. (AAPG Memoir 12). 1969.
- Origins and Evolution of the Antarctic Biota. J.A. Crame. (GSA Publication No. 47). 1989.
- Outstanding Scenic Geological Features of Pennsylvania. Alan R. Geyer et. al. (Environmental Geology Report 7). 1979.
- Phosphate Deposits of the World. W.C. Burnett et. al. (Volume 3). 1990.
- Potassium-Argon Dating: Principles, Techniques and Applications to Geochronology. G. Brent Dalrymple et. al. 1969.
- Precambrian Geologic History and Plate Tectonic Evolution of the Arabian Shield. (Saudi Arabian Mineral Resources Bulletin 24). 1980.
- Principles of Geology, (second edition). James Gilluly et. al. 1959.
- Proceedings of the First Seminar on Carbonatites and Alkaline Rocks of the Bohemian Massif and Ambient Regions. Lubomir Kopecky. 1987.

- Proceedings of the Symposium on Nonpoint Pollution, 1988: Policy, Economy, Management, and Appropriate Technology. Vladimir Novotny. American Water Resources Association. 1988.
- Professional Papers / Saudi Arabia Deputy Ministry for Mineral Resources, nos. 1 & 2, 1982-85.
- Rare Vascular Plants in Canada; our Natural Heritage. George W. Argus et. al. 1990.
- Reservoir Engineering Aspects of Waterflooding. Forrest F. Craig. (Society of Petroleum Engineers of AIME, (Monograph vol. 3). 1971.
- Salt Diapirs of the Great Kavir, Central Iran. M.P.A. Jackson et. al. (GSA Memoir 177). 1990.
- Salt Domes--Gulf Region, United States & Mexico. Michel T. Halbouty. (Second Edition). 1979.
- Sea-Level Changes: An Integrated Approach. Charyl K. Wilgus et. al. 1988.
- Sediment Budgets. M.P. Bordas et. al. (IAHS Publication No. 174). 1988.
- Sedimentation and Stratigraphy of Carbonate Rock Sequences. 28th I.G.C. 1989.
- Stratigraphic Traps I. Edward A. Beaumont et. al. 1990.
- Suggestions to Authors of the Reports of the United States Geological Survey, (5th ed.). U.S. Geological Survey. 1958.
- Surface and Shallow Oil-Impregnated Rocks and Shallow Oil Fields in the United States. U.S. Bureau of Mines. (Monograph No. 12). 1965.
- Survey and Evaluation of Available Data on Shared Water Resources in the Gulf States and the Arabian Peninsula. Food and Agriculture Organizations of the United States. 1979- 1981.
- Symposium Proceedings: Great Lakes: Living with North America's Inland Waters. David H. Hickcox.
- Tectonics of China. Chen Guoda. 1989.
- Tectonics of the Western-Himalayas. Lawrence L. Malinconico et. al. (GSA Special Paper 232). 1989.
- Tropical Hydrology and Caribbean Water Resources: Proceedings, Fourth Caribbean Islands Water Resources Congress. J. Hari Krishna et. al. American Water Resources Association. 1990.
- Water: A Primer. Luna B. Leopold. 1974.

JOB ANNOUNCEMENT

RESEARCH LIBRARIAN, EXXON PRODUCTION RESEARCH COMPANY, Houston, Texas

Exxon Production Research Company has an immediate opening in its Information Center for a Research Librarian. The responsibilities for this position include searching internal and external online databases, assisting clients, and answering reference questions, as well as evaluating and utilizing new technologies (PC software, CD-ROM).

The qualified candidate will have an ALA-accredited master's degree in library or information science (appropriate experience can substitute), with an undergraduate degree in the earth sciences or engineering preferred. Three to five years' experience in technical literature searching and expertise in ORBIT and DIALOG are required. Experience with STN, Lexis-Nexis, and Dow Jones is desirable. The selected individual will be competent in a broad spectrum of technical and business databases.

Interested candidates should send cover letters and resumes to:

Professional Employment
Exxon Production Research Company
P. O. Box 2189
Department DMN-200
Houston, TX 77252-2189

No phone calls, please.

READINGS IN GEOSCIENCE INFORMATION

Bichteler, Julie, 1991, Geologists and gray literature--Access, use and problems: Science and Technology Libraries, Spring 1991, p. 39-50.

This important paper has significance for collection development, cataloging, reference--Everything.

Coty, P., A.; Tao, Dorothy, 1991, Focus on earthquake journals--A view from the (epi) center: Serials Review, v. 17, no. 2, p. 27- 40.

A brief guide to earthquake literature, with a selected list of serials for librarians, researchers, professionals, and legislators.

Gould, C. C.; Pearce, Karla, 1991, Information needs in the sciences--An assessment: Research Libraries Group, 79 p.

This includes a great article on geoscience libraries. The "List of Persons Consulted" shows why: kudos to Larry Carver, Charlotte Derksen, Claren Kidd, Susan Klimley, Rosalind Walcott, and Louise Zipp for their contributions. (See the Publications section for ordering information.)

PUBLICATIONS

NE Quadrant of the Washington State Geologic Map

The Geologic map of Washington--Northeast quadrant, by K. L. Stoffel and others--has been published. It is for sale for \$8.00 folded; \$10.00 rolled (plus \$1 per order for postage) from:

Publications
Washington Division of Geology and Earth Resources
PY 12
Olympia, WA 98504

Libraries which receive Division of Geology and Earth Resources publications on deposit or exchange should have received their copies by now. The southwest quadrant was published in 1987; the southeast and northwest quadrants are scheduled to be completed by 1995.

RLG Report on Information and Preservation Needs in the Sciences

The Research Libraries Group (RLG) has recently surveyed information needs in academic disciplines. The report on the sciences, Information needs in the sciences: An assessment, by Constance C. Gould and Karla Pearce is now available. It discusses preservation needs (or absence of needs) in the various science disciplines and the importance of access to the older literature. It's available free for the first copy; \$1 each for additional copies, from:

RLG
1200 Villa St.
Mountain View, CA 94041-1100

Geotimes subscription offer

Geotimes is now available for the special rate of \$14.95/year for members of AGI's member societies. This is an effort on the part of AGI headquarters staff and officers to provide increasing benefits to member societies. To order or renew at the new price, members should contact:

Johanna Wertz
Geotimes Circulation
American Geological Institute
4220 King Street
Alexandria, VA 22303

The NUNA Conference Volume, Greenstone Gold and Crustal Evolution, edited by Patricia Sheahan, is now available. The workshop was held at Val d'Or, Quebec, on May 24-27, 1990. The volume sells for \$25.00, including postage and handling and is available from:

Geological Association of Canada
Publications
Department of Earth Sciences
Memorial University of Newfoundland
St. John's, Newfoundland
CANADA A1B 3X5

Coal geology guidebook

Coal geology of the interior coal province, western region, edited by R. B. Finkelman, S. A. Friedman, and J. R. Hatch is available. This comprehensive discussion of the geology, properties, and production of coal from Arkansas, Iowa, Kansas, Missouri, Nebraska, and Oklahoma was prepared the the Geological Society of America Coal Geology Division 1990 field trip. It is available for \$30 (4th class postage); \$32 (1st class postage); \$35 (overseas postage). To order, send purchase order or payment to:

Environmental and Coal Associates
P. O. Box 3168
Reston, VA 22090

The Lunar Sourcebook

The one-volume encyclopedia, Lunar sourcebook: A user's guide to the Moon, edited by Grant Heiken, David Vaniman, and Bevan French, is a compilation of current scientific and technical information about the Moon gathered during both American and Soviet missions. The authors and editors are all active in the field of lunar research and veterans of the Apollo program.

This book would be the first stop, and probably, one-stop reference for engineers, mission planners, planetary scientists, educators, and students interested in scientific study and exploration of the Moon. However, its extensive bibliography readily provides access to additional information.

It sells for \$59.50; order from: Cambridge University Press, 40 West 20th Street, New York, NY 10011

MEETINGS AND CONFERENCES

Society for Scholarly Publishing Seminar Programs

October 3-4, 1991, Washington, D.C.: Top management roundtable--Scholarly communication at work

October 9, 1991, Ann Arbor, MI: Editing on disk


October 10-11, 1991, Ann Arbor, MI: How books and journals are made

November 19, 1991, Washington, D.C.: Academic networks--A primer for publishers

December 12-13, 1991, Houston, TX: Museum publishing programs

June 18-20, 1992, Chicago, IL: Annual meeting

GEOLOGICAL SOCIETY OF AMERICA


GSA 1991

1991 ANNUAL MEETING

San Diego, California · October 21-24

GLOBAL CHALLENGE

- Technical Sessions
- Exhibits
- Field Trips
- Short Courses

Abstracts due WEDNESDAY, JULY 3

Program, Housing, and Registration Information Available AUGUST 1

Preregistration due FRIDAY, SEPTEMBER 20

Call Today (303) 447-2020 or 1-800-GSA-1988 • fax (303) 447-1133

Connie J. Manson, Co-Editor
Geoscience Information Society
2525 Sleater Kinney Road N.E.
Olympia, WA 98506

NON-PROFIT ORG.
U.S. POSTAGE PAID
OLYMPIA, WA 98501

Permit no. 244

Michael Mark Noga
1243 Federal Avenue
#108
Los Angeles, CA 90025