



NEWSLETTER

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VICE PRESIDENT'S COLUMN

Vice President Charlotte Derksen has been on medical leave, but she's doing well and should be back at Stanford the first part of April.

Charlotte's work on the annual meeting arrangements has gone smoothly and the meeting is shaping up well.

"Science Editing and Information Management across disciplines . . . across boundaries . . . through time",
 Washington D.C., September 9 - 14, 1998
 e-mail edinfo98@kosmos.agu.org
 WWW: earth.agu.org/editorinfo98

PRESIDENT'S COLUMN

We've been busy.

Electronic journal meeting: Barbara DeFelice and Shaun Hardy represented GIS at the meeting called by AGI to examine electronic journals published by the geoscience societies. (Their report is elsewhere in this issue.) At that meeting, it was learned that some of the societies are looking to CD-ROM as an archival medium. As we in GIS know, that's not such a good idea; we asked the GIS Preservation Committee to send that information about CDs to AGI, for distribution to the society publishers.

We've also received a request from the chair of the GSA Publications Committee, for GIS input into their activities. That's just now starting up; I'll keep you posted.

GeolInfo6: The International Initiatives Committee has been very busy. They identified contacts in 25 international minerals and petroleum exploration companies, and we've written them to request support for our International Fellowship program. This is an exciting program, and we hope for strong support from industry. The Committee has developed guidelines for the selection of the International Fellows, and has already received some applications. Claren Kidd is actively working on plans for that program, and it's looking good.

The Proceedings Volume is lumbering along and should be completed within the next few weeks. Some of the papers presented at that meeting were very timely, and I was pleased to receive Judy Holoviak's permission to distribute copies of her paper prior to final publication. (If any of you would like that preprint— in print, on disk, or by e-mail— let me know.)

Our Treasurer, Susan Goodman, is proceeding with the plans to invest some GIS funds, for higher returns. We are very fortunate to have Susan's expertise on this.

We have a new webmaster, and she's been busy! Linda Pierce from AGI has quite a knack for webpage design, and (fortunately for us) has taken this job on. Through her efforts, we now have our own, very logical domain name ([geoinfo](http://www.geoinfo.org)), and our site is now hosted on a most appropriate server, at AGI. The site has been moved from Berkeley to AGI, with thanks to Linda and to Marcus Milling. Be sure and check out Linda's handiwork at <http://www.geoinfo.org>

The GIS website also received a very nice review in *Environmental Geology* (v. 33, no. 1, p. 82). Our fame is spreading!

Committee chairs— Don't forget that your mid-year committee reports are due to me by April 30.

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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 \$40 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. Due to current vacancies, all materials—research articles, technical reports, information reports, officer and committee reports, publication notices, job announcements, and other news items—should be sent to the Newsletter editor until further notice.

Material for the June 1998 issue of the GIS Newsletter should be received no later than 15 May 1998. If possible, please send materials by e-mail or on IBM-compatible disc (Word97 or ASCII format).

TREASURER'S REPORT

Following is the final GIS 1997 budget report, which is also the final report of my 2-year term as GIS Treasurer. I have thoroughly enjoyed the experience and thank all of the great people in this organization who have been supportive and cooperative (read prompt!) with their requests and deposit checks, particularly the GIS Executive Board. I wish Susan Goodman an equally (or more) enjoyable and successful term of office.

Sally Scott, 1996-1997 GIS Treasurer

GEOSCIENCE INFORMATION SOCIETY - Final Budget Report for 1997

	<u>Budgeted Income</u>	<u>Actual Income</u>	<u>Budgeted Expenses</u>	<u>Actual Expenses</u>
EXECUTIVE BOARD (Subtotal)	-	-	\$1735.00	\$ 1164.49
President	-	-	150.00	-
Vice-President	-	-	350.00	292.50
Past President	-	-	50.00	-
Secretary	-	-	585.00	424.53
Treasurer	-	-	150.00	108.58
Teleconferences	-	-	450.00	338.88
MEETINGS (Subtotal)	-	-	\$4700.00	\$ 4999.66
1997 Meeting	-	-	700.00	-
"GSA Today" mailing to members	-	-	-	282.50
1997 Meeting : Exhibits	-	-	2000.00	1191.49
1997 Meeting : Field trip	-	\$ 225.30	-	233.00
1997 Meeting : Contributions	-	800.00	-	-
1996 Meeting	-	-	1800.00	3264.77
1996 Meeting : Exhibits	-	-	200.00	27.90
DUES (Subtotal)	\$9415.00	\$ 9687.00	-	-
Institutional	2600.00	2250.00	-	-
Personal	6500.00	6440.00	-	-
Sustaining	-	100.00	-	-
Retired	225.00	165.00	-	-
Student	90.00	60.00	-	-
Named sponsored membership	-	120.00	-	-
Pooled sponsor fund	-	552.00	-	-
PUBLICATIONS (Subtotal)	\$6350.00	\$ 5033.00	\$10450.00	\$ 7292.97
Publications Manager	-	-	850.00	681.40
Directory of Geoscience Libraries (5 th ed.)	2300.00	870.00	2300.00	1770.00
Membership Directory	-	-	1200.00	930.00
Newsletter printing/ mailing	-	-	4100.00	1957.57
Newsletter subscriptions	600.00	740.00	-	-
GIS Proceedings, v. 27 (1996)	1200.00	720.00	2000.00	1860.00
GIS Proceedings, v. 26 (1995)	1000.00	1495.00	-	-
GIS Proceedings, v. 25 (1994)	250.00	45.00	-	-
GIS Proceedings, v. 24 (1993)	250.00	10.00	-	-
GIS Proceedings, v. 23 (1992)	50.00	-	-	-
GIS Proceedings, v. 22 (1991)	50.00	-	-	-
Proceedings : Index	-	-	-	-
GEOINFO V Proceedings	300.00	803.00	-	-
Mailing Labels	350.00	350.00	-	-
Reprints	-	-	-	-
ALA Midwinter '98 publications Display	-	-	-	94.00
REPRESENTATIVES/APPOINTEES (Subtotal)	-	-	\$ 600.00	-
AGI Member Council Rep	-	-	50.00	-
AGI Govt Affairs Program Rep	-	-	-	-
CUAC	-	-	400.00	-
Publicity Manager	-	-	100.00	-
Auditor	-	-	50.00	-
Publications Manager (see PUBLICATIONS section)	-	-	-	-
COMMITTEES (Subtotal)	-	-	\$ 1565.00	\$ 360.40
Ad Hoc Committee on the Future of the	-	-	-	-

Union List of Field Trip Guidebooks	--	--	50.00	--
Archives	--	--	65.00	--
Best Paper	--	--	50.00	27.16
Best Reference Work	--	--	50.00	27.16
Collection Development	--	--	--	--
Digital Data	--	--	--	--
Educational Initiatives	--	--	50.00	--
GeoRef Users	--	--	50.00	--
GIS Website Advisory Board	--	--	50.00	--
Guidebook Standards	--	--	50.00	27.16
International Initiatives	--	--	50.00	--
Ad Hoc Subcommittee for Geoinfo VI	--	--	100.00	--
Membership	--	--	250.00	--
Membership brochure	--	--	500.00	128.88
Nominating	--	--	200.00	150.04
Preservation	--	--	50.00	--
REFUNDS	--	--	--	75.00
AGI SOCIETY DUES	--	--	\$ 725.00	352.00
GAP contribution	--	--	--	352.00
GIFTS (Unrestricted)	150.00	300.00	--	--
BANK CHARGES	--	--	25.00	--
INTEREST (checking)	650.00	--	--	--
Wyoming	--	245.64	--	--
Bank of America	564.70	--	--	--
TOTALS	\$16,565.00	\$16,855.64	\$19,800.00	\$14,596.52

First National Bank of Wyoming:

\$ 8,136.13 Opening balance 1/97
 +5,000.00 Contribution to GEOINFOVI
 - 500.00 Best Reference Award**
 \$14,330.55 Closing balance 12/31/97

Bank of America Checking:

\$22,378.95 Beginning balance 1/97
 + 500.00 Transfer from Ansari Fund**
 + 564.70 Interest
 \$23,443.65 Closing balance 12/31/97

SAVINGS ACCOUNTS:	Ansari Savings	Ansari CD	Bristol Fund
Opening balance	\$1114.63	\$2816.82	\$772.90
Transfer to B of A checking	- 500.00**		
Interest	+ 20.97	+ 148.18	+ 15.61
Closing balance	\$ 635.60	\$2965.00	\$788.51

**Note: Although the Best Reference Award check was paid from the Wyoming account, the funding source is the Ansari funds. \$500 was then transferred from the Ansari Savings account to the Bank of America checking account.

Respectfully submitted,
 Sally Scott, 1997 Treasurer

Approved 1998 Operating Budget:

The GIS Executive Board approved the following 1998 operating budget during the January 27 teleconference.

ITEM	INCOME	EXPENSES
Executive Board		\$2325.00
Meetings		\$6400.00
Dues	\$9630.00	
Publications	\$6840.00	\$7300.00
Representatives/ Appointees		\$ 600.00
Committees		\$1600.00
AGI Society Dues		\$ 700.00
Gifts	\$ 150.00	
Bank Charges		\$ 25.00
Interest	\$ 650.00	
TOTAL	\$17,270.00	\$18,950.00

Sally Scott, 1996-1997 Treasurer

6th International Conference On Geoscience Information

Geoscience information specialists from around the world will meet September 9 - 14, 1998, in Washington D.C., for the 6th International Conference on Geoscience Information GeolInfo VI. The meeting entitled "Science Editing and Information Management across disciplines . . . across boundaries . . . through time" will include attendance and participation of international science publishers and editors.

- September 10, 1998: keynote speakers, formal papers, panel discussions will bring into focus for better understanding the broad topics of electronic publishing, ethics, intellectual property, archiving and information retrieval, education and training.
- September 9, 1998: large and small, bibliographical, graphical or digital geoscience databases will demonstrated at AGU Headquarters. Workshops will also be offered. That night the welcoming party will officially mark the beginning of the four-day conference.

For more meeting information and to indicate your intention to attend, contact:

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Formal field trips of the Mid-Chesapeake Bay area, Maryland Paleozoic rocks, Building Stones of Washington D.C., and Urban Geology of Washington will be offered on September 14, 1998. Trips to DC vicinity libraries will be a part of the meeting.

Furthering GeoScience Research, Free of Charge Community of Science Implements Linking

Capability to GeoRef

In keeping with its mission to help facilitate the creation and exchange of information among researchers, Community of Science, Inc., (COS), has recently implemented a dynamic, technology-driven initiative that greatly benefits the research and publishing communities.

The new capability, which is available free of charge, enables online journal publishers, and geoscience researchers and professionals to link directly into its Web-based *GeoRef* database on an individual record basis. It is the first application of its kind that allows automated, seamless linking to individual records, without first requiring a subscription to the host database.

Originally prompted by a request from the publishers of *Science* to link from the journal directly to COS' *GeoRef* on the Web, the new linking capability is made possible through COS' unique Web and database integration technology, which was developed by the company in late 1997.

A Hub of Geological Activity

Established by the American Geological Institute (AGI) in 1966, *GeoRef* is the leading database of bibliographic information in the geosciences. *GeoRef* provides access to over 1.8 million references to articles, books, maps, conference papers, reports, and theses, covering the geology of North America from 1785 to the present; the geology of the rest of the world from 1933 to present.

GeoRef on the Web has been available through COS since September 1997. However, it is with the new linking capability that COS has uniquely leveraged *GeoRef* and World Wide Web technology to become a "hub" for geoscience research, a virtual, web-based database where geoscience researchers and publishers can tap into quality *GeoRef* citations on an individual record basis. This provides the geoscience community with a unique platform where researchers with common interests can collaborate and communicate their ideas.

Both COS and the AGI believe that the new capability will facilitate research and development and provide additional value to the geoscience community.

Ultimately, by combining its linking technology with its online journal publishing tools, COS plans to become a value-added repository for selected scientific disciplines such as the geosciences, providing multidirectional links between online databases, the corresponding full-text articles, and additional information important to researchers, such as the *COS Expertise* database. (*COS Expertise* is a unique database of first-person profiles of the researchers at leading universities and other institutions involved in basic or applied research and other scholarly activities. It consists of relevant, detailed information supplied directly by the researchers themselves, verified by their institutions, and presented in a common-format, Web interface.

The Benefits of Linking

Dynamic linking between bibliographic indexes, such as *GeoRef*, and Web-based electronic journals provides geoscience researchers and professionals with an immediate opportunity to gain – or offer – additional, relevant information.

For example, a geoscientist could be reviewing an online journal article and notice a highly relevant citation in the reference list. Assuming that the journal's publisher had enabled the linking capability through COS, the reference would appear as a hypertext link that corresponds to the individual record in *GeoRef*. Clicking on the link would take the user to the complete *GeoRef* record, with more robust, detailed information than a bibliographic citation typically includes. The geoscientist would be privy to all authors, author affiliations, English language and translated titles, standardized serial titles

and ISSNs, and information on volume, issue, paging, date, illustrations, number of references, publisher and place of publication. In addition, the *GeoRef* citation may contain an abstract or a URL that links to the abstract or to the full text of the article cited.

Linking to the *GeoRef* citation is also valuable because it contains information that will enable the searcher to uncover similar, relevant documents through secondary searches in the *GeoRef* database. For example, searching for other papers by the same author or in the same journal, or using index terms in the reference to locate additional articles that relate to the original source document.

Likewise, the linking ability benefits authors by enabling them to lead their readers to specific articles that are relevant to the research at hand. The author could simply insert in the text of his or her paper the URL of the cited paper from *GeoRef*. Any Internet user could then access the paper through COS' *GeoRef* on the Web via the URL the author included.

Finally, publishers, through linking their own online journals to individual records in COS *GeoRef*, can complement their offerings with additional robust information: fuller citations, valuable keywords, author and publisher information, and abstracts, when available.

Creating Live Links

The new linking capability is easy for researchers and publishers to implement. All it requires is entering a URL in a document that cites a record in COS *GeoRef*. The process is described below.

Current subscribers to COS *GeoRef* can simply copy and paste the unique URL that resides at the bottom of each full *GeoRef* record into a document to create a link from that document to the individual record in COS *GeoRef*.

Non-subscribers can easily build a link, provided they include the following information: journal identifier (ISSN or CODEN); year (e.g., 1993); volume; and page(s) (e.g., 242 or 1-19).

For example, if you know that the ISSN is 0772-0723, the year is 1993, the volume is 25, and the pages are 1-19, the link would be created as follows:

<http://georef.cos.com/cgi-bin/geo.cgi?action=jrnl&code=0722-0723&year=1993&vol=25&page=1-19>

Publishers can use the directions above to automate the process for setting up links between their journals and individual *GeoRef* records. Complete instructions, including the ability to search a journal title to easily identify the ISSN or CODEN, is available at the following URL: <http://georef.cos.com/geolink.html>

More About COS GeoRef

It is not necessary to subscribe to COS *GeoRef* in order to link to an individual COS *GeoRef* record; the process is free. However, in order to search the COS *GeoRef* database, a subscription is required. For more information, visit <http://georef.cos.com>

More about Community of Science

Community of Science is an electronic publisher of Web-based information products and services that enable "virtual communities" of researchers and societies in selected scientific disciplines to conduct research, collaborate, and communicate with each other online.

COS technologies include an automated system for the publication of full-text electronic journals directly from a database of the typesetting or SGML files used to produce the print versions, and a relational database approach to "secure documents" and distributed authoring designed for society management and online publishing applications.

The company, founded in 1988 by the Johns Hopkins University, is headquartered in Baltimore, Maryland, USA. For additional information visit the COS Web site at www.cos.com; e-mail Adam Klein at alk@cos.com, or write, call, or fax:

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Online Journal Publishing in the Geosciences, Meeting Notes. 1/17/98, Washington, DC

This report is based on notes compiled by Barbara DeFelice, Shaun Hardy and Victor van Buren.

For a paper copy of the official minutes, plus attendance list and case statements, contact Barbara DeFelice, Shaun Hardy or Connie Manson

AGI convened an all-day meeting of representatives from AGI member societies, the Community of Science, and the USGS Library. Barbara DeFelice and Shaun Hardy represented GIS. Marcus Milling introduced the topic. Geoscience societies publish a significant number of titles in the geosciences. AGI's role is to help the 31 member societies address the business issues, pricing models, copyright and antitrust concerns surrounding electronic publishing. AGI supports *GeoRef*, which can provide links to full-text of journals for societies publishing on the Web and following standards for presentation of data.

Advantages of this include:

- Consistent presentation of data to end-users
- Economies of scale for societies
- Access through *GeoRef*
- Increased efficiency for end-users

Bruce Molnia of GSA addressed cost/pricing issues by asking whether society members were requesting

electronic access to their publications. If they were, how many members would drop the print subscriptions? He expressed fear at the potential loss of subscriptions, because the publications need to be self-supporting. It was felt that if members got an electronic version only, they would expect it to be cheaper than the print. It was noted that even when the society membership is asking for electronic publications, that will not necessarily translate to actual subscriptions, and those subscriptions cannot be expected to provide much revenue.

Bruce emphasized that GSA is fulfilling an archival responsibility by supplying their journals on CD-ROM at the end of the year. Other societies also feel that an end-of-year CD-ROM provides an archive of the publication. The GIS representatives expressed concern that CD-ROM is being considered a long-lived and stable format, which is questionable under normal use and less than perfect storage conditions.

Judy Holoviak gave the AGU presentation on "Online Journals on the Web: Future Vision".

Judy discussed why a publisher might want to start publishing on the Web, and the problems and challenges, based primarily on AGU's experience with *Earth Interactions*. There are free electronic distribution mechanisms in some fields, like the preprint servers in physics, but these do not provide a long-term, citable record of the publication. However, this example and other early Internet distribution of publications has helped give people the impression that Web material should be free or at a lower cost than printed publications. In reality, there are new and added costs to electronic publishing such as higher salaries for technical people, and software and hardware investments. There are many national and international legal issues to deal with, and necessary decisions may lead to dead-ends along the way. Therefore, it's necessary to be flexible.

What AGU is doing to deal with some of these problems:

- They are getting and retaining all intellectual rights from the authors, which means the rights to the work in any present and future formats. This statement provoked some discussion about what it meant to do that. Would contract language change with format changes? What about universities that want to retain copyright?
- AGU is retaining all rights in the partnerships they are making; for *Earth Interactions*, they are working with the American Meteorological Society and the Association of American Geographers.
- It's important to retain the peer review system to determine originality and to verify results throughout the electronic publishing process.
- AGU will attach an error file for corrections to the original, NOT actually let the author correct the original article.
- AGU wants to take responsibility for maintaining access over time and despite changes in technology. To do this, they have set up a perpetual care trust fund for the articles so they are reformat them as

necessary to adapt to changing technology.

- For *Earth Interactions*, the archival copy is the electronic, Web-based product. The archival copy for electronic journals where there is a long-standing print product has not yet been determined.
- AGU feels that it is important to exploit the Web technology to provide information that cannot be provided on the printed page, such as voice-over narration, computation of datasets, computer animation and models.
- They have chosen to produce the articles in SGML for greatest flexibility, even though there have been problems providing viewers for all platforms. There was some discussion of the benefit of SGML formats, as well as other electronic formats, in providing options for disabled users.

All the participants were asked to present "Case statements on their current and planned activities in on-line journal publishing".

AAPG:

Has digitized their publications from 1917 to the present, delivered via CD-ROM. This material is also in HTML now, and in the future it will be in SGML. In the future, they would like to deliver a different type of product. AAPG's Web site has the last three months of journals.

GSA:

GSA has no immediate plans for an electronic journal, although the tables of contents are online for *Geology* and the *GSA Bulletin*, and *GSA Today* is in PDF files, readable with Adobe Acrobat. They are looking at file formats for graphics in PDF and HTML for the text. They are reformatting the print for the past 70 years. In response to a question about platforms, Bruce indicated that they do not distribute the journals on a CD-ROM that can be read on both a Mac and a PC. GSA seems in favor of CD-ROM for distribution for text and especially maps due to the large amount of data that is distributed this way, and the control they can have on the data-no one can change it. However, limitations of the CD-ROM format were pointed out by others at the meeting: incompatibility across platforms, need to reformat for both data preservation and to keep up with changes in reading technology, static nature of the medium (cannot build links to corrections or related articles or supporting data, for example). Generally, GSA is not going full speed ahead with digital publishing of journals, and not at all for books.

GIS:

GIS's "case statement" reflects the society's role as a representative of geoscience library and information professionals. (GIS is also a small society publisher; when members were polled regarding preferred format of publications, most wanted to continue to get the newsletter and proceedings in print, with an electronic copy of the newsletter as an advance copy rather than a replacement of the print.) The document: "Electronic

Journals: Checklist of Considerations for Publishers" was compiled from GIS members concerned and experienced with electronic journal publishing from the library point of view. GIS also distributed a document titled "Principles of Licensing Electronic Resources".

GIS advocates developments such as COS's *GeoRef* on the Web with links to electronic journals because this will be more useful in the long run than each society putting a lot of resources into developing a search system for its own set of periodicals. The societies feel that it is one of their roles to provide access to their own body of material. There is certainly a society role in providing a basic search system, but if a society puts resources into developing a search system instead of allowing links to *GeoRef*, that is a disservice to the broader geoscience community. GIS also expressed concern about the use of proprietary viewers.

IAH:

Working with Springer through the Springer Link electronic journal service to provide access to *Hydrogeology Journal*. The future implications of this are unclear in terms of copyright to the electronic articles. IAH likes the quick turnaround of electronic publishing, but are not discontinuing any print publishing efforts, due to concern about technological limits on access in some areas. Like many societies, the tables of contents of periodicals are available on their Web page.

NCWA:

Journals have to pay their own way (this is also typical of many societies that do not want to use member dues to support the journal publishing programs). They also consider putting their journals on CD-ROM as fulfilling the archiving responsibility, and are putting *Ground Water* on CD-ROM back to 1962.

SSA:

Tables of contents of the Bulletin are online; they produce a "pseudo-archival" CD-ROM for back issues. Society identity is important to them, and they want to maintain a central role in information delivery to members. As a member benefit, they supply the *GeoRef* indexing of the *Bulletin*. They are interested in links to resources such as the *Earthquake Engineering Index* and *IRIS*, as well as to *GeoRef*.

SEG:

SEG has an electronic submission method (Journal Automated Tracking System) which gives them a base for electronic and print publishing because they produce PDF files from this system. They are willing to share the details of this system with other societies. They also supply extended abstracts for *GeoRef*. *Geophysics* is online for free since March 1997, preprints are online; the date of online publication is the official date of publication. The magazine *EdgeNET* is a Web publication. Under development is a new product, the *Geophysical Resource Directory*, which will include all the publications of the SEG. They have not yet decided whether to use TeX or SGML. They are looking for a

sponsor to help with this.

SVP:

Moving to electronic submission on the Web for everyone submitting articles to the *Journal of Vertebrate Paleontology*. The *Bibliography of Fossil Vertebrates*, now discontinued as an on-going project, is searchable for free online. They have developed an all-electronic journal *Palaeontologia Electronica* [<http://www-odp.tamu.edu/paleo/index.htm>] which allows for 3D images, color, computer modeling (of posture and gaits for example), a way to publish cat scans, and even do rapid prototyping from computer models. They have to create a product that can be used by members with a variety of technical skills. They have run into a nomenclature problem, however, since the International Code of Zoological Nomenclature does not recognize an electronic publication as a legitimate claim to a new species or name.

USGS:

New Publications is online as well as in print; they are beginning to consider the electronic version of major reports as the primary resource, with printed copies as secondary publications. Less formal publications will be only in electronic format. They are concerned about implications for depository libraries and about the issues of data formats and compatibility. PDF and HTML are around now, but XML might offer more flexibility; they recognize the need for publicly available DTD's for linking purposes. Overall, they would like to encourage electronic publication.

AGI:

AGI's Web page is primarily informational, with classified ads, a calendar, and table of contents from *Geotimes*. The *GeoRef* Preview Database is free, and contains references not yet indexed for *GeoRef*. A new database is planned that would be built from *GeoRef* but would concentrate on Web pages, CD-ROMs, and electronic journals. It would be called the Electronic Sources Database.

Community of Science (COS) presentation

COS is offering *GeoRef* on the Web through their search system, which includes provision to have direct links to Web publications.

Automated Online Journals:

COS initially developed the "Expertise Database", which contains information about researchers. To quote from the COS Web page [<http://best.gdb.org/best.html>]: "COS operates in three business areas: COS Memberships, Bibliographic Database Publishing, and Electronic Journal and Society Publishing. Community of Science, Inc. (COS) links researchers worldwide through information products available on the World Wide Web. The Company's products and services are designed to meet the information needs of the scientific R&D community."

COS is a for-profit enterprise, with shareholders. COS projects are based on the premise that it is necessary to break down barriers between researchers as producers of information and researchers as users of information, by eliminating intermediaries. These intermediaries include vendors, publishers, aggregators and libraries."

GeoRef on the Web via COS will be able to provide direct links from citations to the full electronic texts (as long as they were coded in SGML and the user is a subscriber to the electronic journal) because each article gets a unique identifier and each record is tagged to a journal identifier. This allows individuals and societies to build their own subsets of the database. A society could link that subset into their own home page, or an author could make links from his or her file in the Expertise database to a list of publications. Storage of the SGML and image files is cheap; COS estimates it to be \$150.00/year for an average title. The cost of producing the SGML files is high, however, as much as 30% of the cost of producing the journal. It would be best to have a way for users to do this automatically by using a template, as part of a system for submitting articles electronically.

As an example, the *American Journal of Science* online was described. The articles are stored in SGML, coded by a compositor. Middleware from COS produces HTML on the fly, and equations and figures are done as GIF files.

Online Authoring:

Jennifer Bol from COS made a presentation on "using online technology to create new content", based on a case study of CTSNet, an information site for cardiothoracic surgeons. COS contributed the authoring software so users can add content to the site, can work on documents collaboratively, and can set up the level of security needed for the different components of the site.

For example, there is an image library made up of images from the journal articles. Authors do their work in word-processing programs, and the HTML is generated for them. References can be easily pulled from online databases into papers, and joint authorship is also facilitated through simultaneous authoring. Financial support for CTSNet comes from the surgical supply industries and partly from member dues.

Getting from Here to There: The Technology Issues

Victor van Buren and Judy Holoviak covered the many technological issues. Electronic publishing will benefit from the adoption of standards in these areas:

- Editorial workflow
- Authoring procedures
- Composition (SGML is currently seen as the most flexible, rich and robust format)
- Standard Document Type Definitions (DTD)

AGU is planning to make all their publications available electronically eventually. Papers can now be submitted electronically to *Geophysical Research Letters*, and

reviewers can read them in several formats-HTML, PDF, PostScript, and dvi. Most will continue to have print counterparts for a while. *Earth Interactions* is their new, electronic-only electronic journal. It has benefited from being a cooperative venture among three societies although this has also slowed some decisions. SGML was chosen as the format for tagging and delivery, as being the best choice for long-term flexibility. The proprietary SGML viewer Panorama is not yet available for UNIX or Mac platforms, but PDF files are now available for those users, and simple HTML format for viewing will soon be available. Articles in *Earth Interactions* should be designed to take advantage of the multimedia capabilities of this journal.

Getting from Here to There: The Business Issues

Assuming that electronic journal publishing can provide more efficient access to information in more formats than print journal publishing, what business models are and will be viable?

Subscription models:

- Subscription to the whole journal (similar to current print publication)
- Pay per view
- Article document delivery
- Through an aggregator, similar to a print serials vendor

Access modes:

- IP
- Domain
- Password controlled

Wrap-up questions and comments:

- It's important to be clear about why societies should consider electronic publishing. It will speed up publication, but is it going to make research better or faster?
- Developing a centralized archive to help share those costs should be further discussed.
- The USGS is interested in continuing to investigate electronic publication as the primary format. Can online authoring tools help cut publication costs?
- Electronic journals should and can have added value to the geoscience community.
- Direct linking of references to indexing services and among references is very important, as a way to both add value and to provide easy access to electronic publications.
- It is important to build in redundancies of data storage for security and mirror sites for speed of access. Assurance of long-term availability is crucial.

This meeting provided a way for societies to share information and concerns, discuss possibilities for cost sharing, and learn about technological opportunities, such as reference linking in *GeoRef* from Community of Science. The participants agreed that the day had been

very informative and useful, and that there needed to be more such meetings. AGI will continue to hold meetings on this topic.

Electronic journals: Checklist of considerations for publishers

These considerations are based on the collective experience of librarians dealing with electronic journals over the past several years. Librarians are concerned with a range of issues that impact their ability to provide access to electronic journals easily to a broad range of qualified clients. This checklist addresses key concerns in this area.

1. Access

a. Current access:

- Access should be easy to provide for all eligible users.
- User authentication-IP access for as broad a domain as possible is generally desirable, although there needs to be provision for off-site users. (This can be accommodated by having offsite users connect first to the institution's computer system, then access the service from there.)
- Provision for password access may be necessary for offsite users.
- Limiting access to certain workstations or buildings is impractical.
- There should be some access for library walk-ins, based on the library's policies.

b. Long-term access:

- Perpetual online access to the subscribed titles needs to be guaranteed to all users, whether or not the subscription is continued.
- Long-term access needs to be included in license agreements, and could be provided through cooperative arrangements. JSTOR is a good example of a cooperative project. See information at: <http://www.jstor.org/>
- Consider the possible role of aggregation services in providing long-term access.

2. Pricing structures:

- Libraries may be unwilling or unable to pay more for electronic versions of journals already received in print.
- Burden of supporting the journal can no longer rest on libraries' paying greatly increased prices over that paid by individual subscribers.
- Noncancellation clauses are not acceptable.
- As an only option, per article pricing is not a desirable pricing model.
- Pricing should be simple and flexible.

Examples of pricing models:

- Unlimited use of all publications of society; package pricing.
- Unlimited use of individual titles selected, an option

to package pricing.

- Limited use.
- Use based on number of articles per time period from all publications of society.
- Pricing based on type and size of institution, department or working group.

3. Content and format of the material:

- Consideration should be given to following common practice for output formats as much as possible. Journals should be cross platform compatible, and the articles should be in PDF and HTML formats at least, with other formats such as PostScript also available.
- Reliability of the material needs to be guaranteed. Once published online, a paper should not be subject to dynamical alterations or revisions; errata, corrections, comments, etc. should reside in separate files, and be hyperlinked to the original paper.
- Table of contents should be offered free-of-charge to anyone.
- Limitations in equipment and technical expertise on the part of the intended audience need to be considered.

4. License agreements and contracts:

The Principles for Licensing Electronic Resources from the ARL Working Group should be adopted by publishers, or at least used as guidelines. This is available, with background information, at: <http://www.arl.org/scomm/licensing/principles.html>

- Interlibrary lending should be allowed for the electronic version of journals, subject to present fair-use guidelines.

5. Evaluation:

- Consideration should be given to ways to receive input from the researchers, librarians and other users of the journals.
- Libraries will be interested in statistics regarding use of the titles.
- Libraries will be active participants in promotion and evaluation of the products.

6. Integrate electronic journals into users' information gathering methods:

- Exploit the capabilities of the online environment (reference linkages to A&I databases, links to forward references and datasets, etc.).
- Offer automatic delivery of table of contents to users.
- Offer new issue notification for libraries and interested users.
- Offer as large a backfile electronically as is possible.

Geoscience Information Society
Barbara DeFelice
Shaun Hardy
1/17/98

Forum on International Geoscience Meeting Report,
11/17/97, Washington, DC
Barbara DeFelice

This day-long meeting sponsored by the National Research Council's Board on Earth Sciences and Resources, and the American Geological Institute, provided an opportunity to learn about the role of international science unions in international and global science, as well as to meet representatives from many international geoscience organizations and international industries. Barbara DeFelice, GIS Past President, and Shaun Hardy, member of the International Initiatives Committee, attended the meeting.

B. Clark Burchfiel of MIT, an expert in mountain building in the Himalayas and author of the report titled "International Role of U.S. Geoscience, published by the National Academy Press in 1987, spoke about the changes in the research environment since that report was written. He emphasized the difference between international and global science. Geoscience is intrinsically international because it is necessary to see geology in many parts of the world for insights into geological problems. Due to funding pressures, there is a trend in geoscience research towards global and multidisciplinary work such as climate change; however, there is still a need for international geology that focuses on issues such as hazard mitigation and seismic information. Changes in the research environment include more political stability in some areas, the need to concentrate on developing global and local data sets, and the requirement that scientists justify their work in economic terms in order to get funding. He concluded that international societies must restructure to be useful as a voice for scientists who need to communicate the real impact of their work to political organizations.

F. Sherwood Rowland, Nobel Laureate and Foreign Secretary of the National Academy of Sciences, gave the keynote address on "Global Atmospheric Chemistry", an overview of his work in this area, emphasizing the global nature of this research.

Presidents of three of the largest international unions spoke about their organizations: P. Robin Brett, International Union of Geological Sciences; Peter J. Wylie, International Union of Geodesy and Geophysics; Stephen C. Porter, International Union of Quaternary Research. General themes were the lack of funding sources (not all member countries contribute financially), participation (younger scientists are too busy doing research so much active participation is from established scientists), the political benefits of scientists from different countries working together within these organizations, scientific benefits such as sharing instrumentation and data, and the recognition that global processes are not subject to academic discipline boundaries. The presidents also described typical programs that their unions sponsor, such as the International Lithosphere Programme of IUGG, publications such as Episodes from the IUGS, and funding for scientists from less developed

countries to go to workshops or conferences. IUGS has a commission devoted to geoscience information, Commission on the Management and Application of Geoscience Information or COGEOINFO, which includes the Working Group on Multi-lingual Thesaurus of Geosciences.

Following these talks, the presidents engaged in an open forum on U.S. Participation in International Geoscientific Unions. These unions have complicated, many-layered structures, and many participants expressed a feeling of confusion because of all the acronyms! A major theme was how to communicate what the unions do and how people can participate in their activities.

The afternoon talks highlighted different examples of international geoscience:

- International Minerals Exploration and Production by U.S. Companies by Milton H. Ward, President, Chairman, and CEO of Cyprus Amax Minerals Co.;
- International Energy Exploration and Production by U.S. Companies by Susan Morrice, CEO, S. Morrice and Associates;
- Seismology as a Global and International Science by David W. Simpson, President of Incorporated Research Institutions for Seismology.

The whole group broke into working groups on these topics:

- International Geoscience Research Programs
 - International Energy and Mineral Resources
 - Roles of Scientific Societies and International Unions
 - Societal Benefits of U.S. Participation in International Geosciences
 - Group reports focused on these issues:
 - The need for geoscientists to understand what the unions are doing, how they can benefit from that knowledge, and how the unions might better cooperate in sharing this information. A clearinghouse of all projects was mentioned. Other communication vehicles like Episodes and Geotimes were mentioned as resources presently available.
 - Privatization in industry worldwide is creating opportunities for professional organizations, academia and industry to work together in terms of sharing data, information, skills, and training.
 - The U.S.G.S. was mentioned as a government agency that works internationally, and this role should be promoted.
 - Earth science education is a crucial issue for all geosciences.
- The group reports led to a summary of the discussion and choice of major action items for the future:
- The unions should support effective K-12 education in the geosciences
 - U.S. participation in the international unions is vital
 - The recommendation in the 1987 NRC report that there be an information center for international activities should be implemented.
 - The significance of the role of international cooperation in mineral resource management should be recognized and supported by industry and government.

The Forum concluded with an evening talk on "International Environmental Cooperation" by Timothy Wirth, then Under Secretary of State for Global Affairs. This meeting provided the GIS representatives with a broad view of international geoscience unions, and a good opportunity to discuss GIS's international concerns and plans with interested individuals.

GIS Preservation Committee

The GIS Preservation Committee will be conducting a survey to inquire about the preservation activities occurring at GIS member institutions as well as material that would benefit from preservation treatment. The survey will be arriving in the mail soon. The survey will also be available online at:

<http://vector.gis.psu.edu/ems/guides/GIS/survey.html>

This second profile about preservation projects at GIS member institutions looks at a thesis preservation project at the University of Nevada, Reno by GIS Member Linda Newman. If your institution has participated in preservation projects and you would like to share the results with your GIS colleagues through a brief profile in the GIS Newsletter, please contact Lisa Wishard or Linda Musser.

Linda Musser (LRM4@PSU.EDU), GIS Preservation Committee, co-chair

Lisa Wishard (LAR14@PSU.EDU), GIS Preservation Committee, co-chair

Thesis Preservation Project At The Mines/DeLaMare Library, University Of Nevada, Reno

The Mines Library (now called DeLaMare) at UNR has, over many years, maintained a preservation project for the original thesis maps contained in the MSM theses deposited with the library. Often the library had the only original (paper) copy available for public review and preservation for this copy was viewed as imperative. But, we were faced with—and still have—the dual problem of preservation and availability for use.

Basically, the initial project consisted of removal of the original plates in 163 theses, copying them on a color copier, piecing and placing of the copy in the rear pocket of the thesis, and encapsulation of the original, to be designated library-use-only. A follow-up project involved 99 more thesis maps.

- **Step one: Funds**

In the beginning, funding to pay for the color copying and encapsulation materials was the first challenge. I found that displaying a particularly ragged (I have one saved just for this purpose) folded, and folded, and folded thesis map would bring tears to the eyes of my Foundation and got me the first \$9000 for the project. Later funds came from a mining donor. I would also recommend seeking funds from the local geological or mining societies. I have often found them concerned and able to assist with special projects.

- **The problem of color:**

A color copier was the second hurdle. As we all have observed, geologic maps tend to come in wonderful colors and any preservation project must include color. Reno, when the project was begun, did not have a color copier. Sacramento, 2 hours west, was the closest. As I look back over 10 years ago, it seems like such an archaic situation, but I suspect many libraries may have been in locations where a color copier was not readily available 10-15 years ago. So, I would load my wagon bright and early with theses and head 'over-the-hill' as we love to call the Sierra Nevada, to Sacramento to a copy service. Yes, I tried shipping the theses to them with exact instructions on copying, but every error which could be made, was, and I sent back some volumes as many as 3 times before they had copied the maps entirely and with a little overlap for piecing. And shipping required insurance, etc. Believe me, it was easier to just load up my wagon.

Color copiers at that time were first the Xerox 6500 and later a Canon NP Color copier. The colors were OK, but no where near the nearly perfect reproduction readily available today. And crayon type coloring was especially difficult to be sensed by the machine. Hard colors were more faithfully reproduced.

- **Piecing:**

Working on the light table, a student would piece the sheets (no larger than ledger) into a map, trim and fold them and place them in the pocket which had held the original; sometimes the extra bulk would be a problem and a larger pocket had to be fashioned. We just used regular magic tape. In the event of eventually deterioration, copies would again have to be made from the originals.

The pocket holding the copy was marked 'Original _____ [number] maps filed: Library Use Only.' I have to say that I have never had a complaint about the copy quality or the fact they were copies. And I am hard-pressed to even remember a time when someone asked to use the originals, but it probably happened.

- **Encapsulation:**

The originals were cleaned lightly using erasers where it would not affect the coloring before encapsulation. We considered deacidification, but, at the time, the problems and doubts of the process caused us to decide not to do anything. Also, there were serious concerns of the effect on the assorted paper and colors/ink used. Tape on maps was avoided for obvious reasons and because we found that the encapsulation process which set up static electricity held the map pretty well in place and arrested further deterioration. 3-mil Mylar was bought by the roll and, in the beginning, in sufficient quantity to get a discount. The students doing this work were selected for inclination and talent for such detailed work and trained in the Special Collections Dept. The work was done on one of the large tables in the main map room; we did not have a suitable work area away from the public. The Mylar pieces were cut with a little overlap, laid out,

rubbed down (sets up the static electricity), map placed in center and double-sided tape used to join the two halves of the 'sandwich.' A slightly better method is to heat-seal the edges rather than use tape; we did not have that capability. The map had a sensitive strip added in a margin for security. The corners were rounded slightly.

The packet was not airtight but does seem to hold the map without slippage. A plain label was typed and placed on the lower right corner on the Mylar. It gave the UNR Thesis number (LC classification was not used although they were fully cataloged by LC), author's name, and was stamped 'Library use Only.' The encapsulated maps are filed by author's last name in over-sized flat map cases. Weight then becomes a factor and we found that far fewer maps could be placed in a drawer. We placed them in folders labeled by letter (for the author's last name). We also found maps of immense size, which caused problems with folding of the Mylar. Eventually we were able to get the Graduate Dean's office and the Geology Dept. to agree to limit the size of maps submitted with theses to 32" x 48".

- Copying

Reproduction is not a problem from encapsulated materials. While a bit clumsy, they do not have to be removed for basic copying, but would have to be put through a large format copier such as an architectural-sized machine. We do not have such a machine readily available and have rarely given permission for the encapsulated map to be taken from the library. We only have b&w copiers available on site.

- Technology improves:

For a while it appeared that preservation would be enhanced with micro reproduction of maps. Several national companies experimented and produced samples and limited series in microfiche.

In 1988 Susan Klimley, formerly at Columbia University and GIS member and always in the forefront of preservation issues, contacted me after reading an article about the thesis project. We collaborated on a GIS poster presentation at the 1988 meeting in Denver which I wrote up for the Proceedings.

The core of the problem remains with color: how to easily, faithfully, and cheaply reproduce from whatever format is used as an archival medium—which I consider micro to be. Most of us do not have sophisticated copiers nearby much less in our libraries to reproduce in color on paper from micro. They are not cheap to acquire or for convenient daily production.

- Future considerations:

Digital preservation now is the medium of today's most sophisticated preservation efforts and Susan Klimley has been a leader in experimenting in this field, which continues at Columbia University now. Certainly for preservation, this is the most ideal medium yet.

The primary concern today, from my perspective, is as it was when we were looking at micro reproduction: we need not just to preserve, but also the ability to reproduce the geologic map from whatever medium used for

storage. And reproduce it faithfully, full-size, easily, cheaply, and in its original color. Most of these demands seem to be met by digital technology; the 'cheap and easy' for inputting and reproduction are still problems for most of us.

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Web-based GeoRef Subscription Alternatives

The *GeoRef* database, established by the American Geological Institute in 1966, provides access to the world's literature in geology and the geosciences. A comprehensive resource with over 2 million citations, many with abstracts, *GeoRef* covers the geology of North America since 1785 and the geology of the rest of the world since 1933. AGI's *GeoRef* Information Services web site www.agiweb.org/agi/georef.html provides a list of *GeoRef* providers in association with searching aids and contacts. SilverPlatter, OCLC and the Community of Science provide subscription-based access to the *GeoRef* database. Comments on the following web-based search engines are derived from information professionals contributing to the geonet-I discussion list.

SilverPlatter (www.silverplatter.com) provides subscription access to *GeoRef* using a variety of SilverPlatter's *SPIRS* search engine formats. Most searchers and information professionals are familiar with and prefer *WinSPIRS* software linked to *GeoRef* on CD-ROM. Many *WinSPIRS* features have been included in the latest version of *WebSPIRS* 4.0 which is to be released some time after May 1st 1998. *WebSPIRS* as an

interface application, is a vast improvement over the familiar, yet clunky *WebSPIRS* 3.1. Search engine strengths include: access and familiarity with other SilverPlatter databases; domain-wide access; search history capabilities that enable searchers to combine and re-executing searches; marking records for later printing or down loading; mailing search results as HTML markup or plain text; sorting of the retrieved information by year, author, source, or any other field; thesaurus enhancement that includes explosions and searching by all subheadings offered by *GeoRefs* thesaurus; record display options for easy point and click access and online help. SilverPlatter *WebSPIRS*'s strengths include their reputation for the development of ERL, remote/server software and the potential for integration of *GeoRef* information with site-specific library catalogue and OPAC information.

WebSPIRS incorporation of an online thesaurus allowing for the cross classification and selection of geographic, biosystematic and subject descriptors. Allowable searching of all database tagged fields includes category code, mapping coordinates and update codes are a real bonus. The flexibility of pricing and multi-use access especially for smaller and medium sized institutions may be an important consideration.

Community of Science COS (www.cos.com) as the new kid on the block continues to modify and enhance its web-based search engine. This search engine provides simple or advanced search engine interfaces. COS search engine strengths include the development of a one-stop-shop web searching page; searching using 20 different field codes and associated syntax; subject searching including title, abstract and keywords; narrowing of search terms by secondary search strategies; displaying results by relevancy ranking; down loading using a variety of citation management software products; keyword index of thesaurical terms and online help.

The advanced search engine allows a great deal of flexibility using specific database commands, search logic, indexes and limiting features. COS web search engine subscription benefits include multi-level access, no restrictions on the number of concurrent users, domain-wide access and connectivity with individual networks and workstations. The advanced search engine is aimed at expert searchers familiar with complex, yet specific online search strategies. Advanced searching is welcomed by frequent users that are easily frustrated by menu-driven and inflexible web-based search engines. Projects to work on include the development of a thesaurus interface, allowable searching of all *GeoRef* tagged fields, search engine keyword and subject contextual searching problems, lack of mapping coordinates as search specific options and better description of help screen terms and definitions.

OCLC FirstSearch (www.oclc.org) provides web access using basic and advanced search engines. All search options include standard graphic formats and interfaces common to all *FirstSearch* databases. Searching is allowed using 32 different distinct indexing fields taking advantage of all *GeoRef* tagged fields although not all fields are displayed when viewing search

results. Searches can be limited by date, language and related subjects as set by administrative default settings. Unique features include search result related subject analysis, a listing of *GeoRef* periodicals titles, exact and/or phrase Boolean searching, browsing related indexes, an interactive search history option, flexible e-mail, tagging and saving of displayed records, downloading options and linkage to OCLC document delivery, interlibrary loan and location services. The advanced search engine builds on the basic search engine interface allowing multi level searching capabilities. Strengths of *FirstSearch* include a common, easy to use interface, flexibility and the reputation of OCLC products and services.

Searching *FirstSearch* was once thought of as using a blunt instrument to search a very specific database, but this is slowly changing. *FirstSearch* continues to upgrade its software and search engine to accommodate advanced and expert mode search capabilities. Smaller institutions may want to consider OCLC's pay per search/display pricing plan as part of its pricing policy for the entire collection of *FirstSearch* databases.

In summary, it would be great if all web-based search engines were as flexible and fast as windows-based software search engines. A web-based browser and graphics interface should allow for applications not capable of being supported by other platforms. Database vendor projects to work on in the future would include:

- incorporating a cartographic/mapping search engine;
- linking map graphics with long/lat search coordinates;
- development of the thesaurus (and not term keyword indexes);
- linking mapping, geographic, systematic and biological relationships with graphics, maps, pictures and full-text thesaurical descriptions;
- the ability to pull more than one thesaurical term into a series of complex search strategies;
- the ability to pull keywords, terms and/or thesaurical descriptors from displayed records for further searching;
- the development of personal current awareness/SDI profile searching;
- an agreement on the use of standardized terminology across all database search engines e.g. keyword/subject/term/descriptor;
- linking *GeoRef* bibliographic records to vendor/publisher full-text files;
- integration of *GeoRef* bibliographic records with OPAC records and related standards;
- integration of bibliographic management software packages.

I would recommend that anyone having to renew their *GeoRef* subscription research all database vendors, search engines, platforms, pricing policies and ask for a test drive. Many institutions and information professionals prefer a Window-based search engine and the control of working with a CD-ROM product. Although the www (world wide wait) is in its infancy, web-based search engines are at the mercy of a multitude of variables that contribute to slow searching which can be very frustrating at times. Smaller to medium sized institutions should

investigate whether they qualify for AGI discounts based on the size of their geoscience academic community. They should also investigate the cost of providing alternate non-subscription priced alternatives including OCLC's *FirstSearch* per search/display pricing policy. The best *GeoRef* search engine is the one that end-users find the most effective for their individual searching needs. Geonettors indicated that search engine and searching preferences vary widely and are based on different types of searches, levels of expertise and system requirements. It was noted that some institutions subscribe to more than one *GeoRef* product at the same time due to searcher's preferences and technical requirements.

Web-based *GeoRef* database vendors continue to upgrade and modify search engine designs primarily based on user feedback. All *GeoRef* vendors are constantly reviewing their AGI base agreement and conditions of subscription, which is reflected in their pricing policy. Contact Sharon Tahirkheli, *GeoRef* Information Systems @ AGI (e-mail: SNT@agi.agiweb.org) if you have any further questions about *GeoRef*. I would challenge the *GeoRef* community to continue to send recommendations to all database vendors, visit their booths while attending your next convention and/or send comments on search engine design via e-mail or their 1-800 number at every opportunity.

Thanks to those fellow geonettors who took the time to participate in this cooperative exercise.

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Trips to DC libraries will be a part of "Science Editing and Information Management across disciplines . . . across boundaries . . . through time," Washington D.C., September 9-14, 1998

Spend an extra day or more to visit one of more of the Smithsonian Institution's museums. Western Association of Map Librarians (WAML) convenes in early September at the Library of Congress. Come early and participate in the WAML meeting.

GeoRef Staff Changes

The American Geological Institute is pleased to announce that Sharon Tahirkheli will be appointed Acting Director of the *GeoRef* Information System effective March 1, 1998. She will be replacing John Mulvihill, who after 24 years of service, is retiring as *GeoRef* Director. Sharon joined the *GeoRef* staff in 1975 as an indexer. In 1987 Sharon was promoted to Chief Editor of the *GeoRef* system. Sharon received a Master's degree in Library and Information Science from Catholic University and a B.S. degree from Mary Washington College.

We are also pleased to announce that with Sharon's appointment as Acting Director of *GeoRef*, Ellen Hissong and Jim Mehl will be appointed to the positions of *GeoRef* Associate Editors, sharing the responsibilities of Chief Editor. Most recently, Jim Mehl has been coordinating development of the U.S. Geological Survey Publication List and Ellen Hissong has been responsible for development of special *GeoRef* indexes and assisted with selected data exchanges. Jim joined AGI in 1994 after receiving his B.S. degree in Geology and Russian Studies from James Madison University. Ellen also joined AGI in 1994 on receiving her B.S. degree in Geology and History from the College of William and Mary.

LITERATURE REVIEW

by Miriam Sheaves

There is an interesting article in *IFLA Journal*, v.23 (5/6):351-355, 1997, "The Impact of Electronic Publishing on the Scientific Information Chain". It features the address delivered by guest lecturer Sir Roger Elliott at the 63rd IFLA meeting in Copenhagen, September, 1997. Elliott is Chair of the International Council of Scientific Unions Press and Professor of Physics at the University of Oxford. He discusses several issues from the scientist's point of view: self-publication (preprints) versus editorial standardization and peer review; costs and economic models; the importance of the infrastructure of Internet access (danger of commercial and leisure usage overloading access for the academic community); archiving issues; and the importance of considering how electronic publications in science will fit into international regulatory regimes. He points out that scientific information is different in that even though it has commercial value, it is mainly passed around a loop (the authors are the users).

David Bearman and Jennifer Trant in the *ASIS Bulletin* (v.24 (3):13-17, 1998) report on a working meeting of archivists in "Electronic Records Research Working Meeting, May 28-30, 1997: A Report From the Archives Community". This emphasizes the archivists' approach of the problem from the "front end" before records can be brought together to become the problem of a repository (and librarians and preservationists).

Two recent issues of *Library Acquisitions - Practice & Theory* have articles of interest. "The Serials Cancellation Crisis - National Trends in Academic Library Serial Collections" by T.E. Chrzastowski and K.A. Schmidt (v.21 (4):431-443, 1997) reports results of a three year study of ten academic research libraries. "Partnering in a Changing Medium: the Challenges of Managing and Delivering E-Journals" by Sharon Cline McKay is a good summary of the issues from the perspective of the subscription agent (v.22 (1):23-27, 1998).

An article by N. Kaminer "Scholars and the Use of the Internet" reports on a survey of university faculty which studied length of time of Internet use, perceived expertise, and perceived utility of the Internet, *Library & Information Science Research* v.19 (4):329-345, 1997.

In "Question Master: An Evaluation of a Web-Based Decision-Support System for Use in Reference Environments", John V. Richardson Jr. describes a system which automates some of the more routine, fact-type reference questions encountered in libraries. A series of Web pages guides librarians through a set of clarifying questions before making recommendations of appropriate electronic or print resources from OCLC's *WorldCat*. His article is in *College & Research Libraries*, v.59 (1):29-37, 1998, or you can take a look for yourself at http://purl.org/net/Question_Master.

Steve Black in "Journal Collection Analysis at a Liberal Arts College" reports on a study calculating each journal's price per use, and other data for shelf-space analysis. He describes it as a low cost study method, which resulted in

reliable data for moving volumes to storage (among other things). (*Library Resources & Technical Services*, v. 41(4): 283-294, 1977).

Member News

Nominations for "sponsored members"

You can nominate a candidate to be GIS sponsored member. The person should be a geoscience librarian from a library in a nation that might be lacking a strong information infrastructure or significant resources and who would benefit from the GIS Newsletter, Directory, Proceedings and interaction with GIS members.

GIS has a "sponsored membership" category to which members are providing funds. Last year GIS sponsored members were from Zimbabwe, Czech Republic, and Botswana.

Nomination or self nomination can be archived by sending a note to Claren Kidd. In a paragraph nominate the person and describe their background, work, and workplace environment.

Claren M Kidd	Telephone	405 325-6217
100 E Boyd R220	Fax	405 325-6451 or
405 325-3180		
University of Oklahoma		
Norman, OK 73019-0628	email	ckidd@ou.edu
USA		

Address changes:

The area code for the part of California containing both Stanford and the USGS-Menlo Park has changed to "650."

The area code for Ann Arbor Michigan members has changed from "313" to "734." Please note for members' phone and fax numbers.

New members:

Peter Briere is a graduate student at Texas A&M University. E-mail: petr@geog2.tamu.edu.

Penny Whitten works at the University of Nevada, Los Vegas. Phone: 702-456-7561. E-mail: whittenp@nevada.edu

Jane Hultberg is Librarian/Information Specialist at the Johnson Space Center in Houston, TX. Phone: 713-664-2092. E-mail: jhultber@ems.jsc.nasa.gov.

Summer Institute in the Cartographic Sciences

The 1998 Summer Institute in the Cartographic Sciences will be held at Salem State College in Salem, Massachusetts from June 1 to July 10. Six 1-week courses will be offered this year; Air Photo Interpretation, Computer-Assisted Cartographic Modeling, Geographic Information Systems, Spatial Database Design and Analysis, Advanced Geographic Information Systems, and Digital Image Processing of Remotely Sensed Data.

These college-accredited courses are designed to provide students with technical expertise requisite to proper geoscience information and analyses. Participants may enroll in any sequence of courses and upon successful completion of any four a Certificate in the Cartographic Sciences is awarded. Courses toward the Certificate may be accrued over a period of years.

For more information contact:

Dr. William Hamilton, Dept of Geography
Salem State College
Salem, MA 01970

Phone: 978/741-6228 E-mail: info@dgl.salem.mass.edu
FAX: 978/740-7113 URL: <http://dgl.salem.mass.edu>

INTERNET SITES

GIS Website- New And Improved!

I'm delighted to announce the New And Improved GIS Website! As you know, our former webmaster, Vivienne Roumani-Denn had stepped down from that post, with her departure from the geology library at Berkeley. We needed a new webmaster and a new host site, and found them both: Linda Pierce at AGI is our new webmaster, and the nice folks at AGI are graciously hosting our site on their server. We even have a new, cleaner, domain name: **geoinfo.org** Linda has tremendous webpage expertise (and enthusiasm!), so can look forward to a lively page.

Our thanks to Linda Pierce and Marcus Milling, for the present and the future, and to Vivienne Roumani-Denn, who got it all started for us.

Connie Manson, GIS President

AGI Geoscience Careers Site

<http://www.agiweb.org/agi/careers.html>

The American Geological Institute (AGI) created this site in collaboration with the Professional Careers Pathways in the Geosciences project. Through the Brochure section, AGI provides information on what is a geoscientist, what they do, where they work, and the job outlook. Brief descriptions of the many types of geoscientists are available. But to get a real picture of what geoscientists do, AGI has compiled biographies of many different types of geoscientists. AGI also provides

career statistics in a variety of forms. Job advertisements are also available and lean heavily on the academic arena.

Palaeontologia Electronica

The first issue of Palaeontologia Electronica (PE) was officially released in January. The home site of this peer reviewed journal can be found at Texas A&M University, USA... <http://www-odp.tamu.edu/paleo/index.htm>
... with local mirrors at the following institutions:

Carleton University, Canada

(<http://www.earthsci.carleton.ca/paleo/index.htm>)

ETH, Zurich, Switzerland

(<http://www.erdw.ethz.ch/~pe/index.htm>)

Universitat de Valencia, Spain

(<http://www.uv.es/~pardomv/pe/index.htm>)

Additional mirror sites are on the way and will be linked into the pages mentioned above as they come online.

Palaeontologia Electronica is sponsored by The Palaeontological Association (UK), The Paleontological Society (US), the Cushman Foundation for Foraminiferal Research (US), The British Micropalaeontological Society (UK), the Sociedad Espanola de Paleontologia (Spain), the Canadian Association of Palynologists (Canada), and the Society of Vertebrate Paleontology (US).

Norm MacLeod & Tim Patterson coexecutive editors

JOB ANNOUNCEMENTS

ANNOUNCEMENT OF VACANCY

University Of Michigan University Library

Coordinator, Science Libraries And Head, Shapiro Science Library

DUTIES:

Reporting to the Assistant Director for Public Services, this position is charged with coordinating the University's response to the service and resource needs of faculty, researchers, and students in the sciences. The Science Libraries consist of the unified Shapiro Science Library (Chemistry, Mathematics, Natural Science, Physics/Astronomy), the Museums Library, and the Biological station Library. The Science Libraries have primary responsibility for the information needs of the departments of Astronomy, Biology, Chemistry, Geological Sciences, Mathematics, Anthropology, Paleontology, Zoology, Physics, Statistics, and the School of Natural Resources and Environment (SNRE).

The Coordinator of the Science Libraries is responsible for leadership and direction of the three units including

overall responsibility for budgeting, staffing, and coordination of public services and technical processing. As Head of the Shapiro Science Library, the librarian has special responsibility to the primary clientele of that library. The total staff resource within this cluster includes 5 librarians, 6 professional & administrative staff, 7 office-clericals, and additional hourly assistants.

As Coordinator of the Science Libraries, the librarian will:

- lead in the development of innovative services in response to and anticipation of the needs of library users, including the areas of electronic access to information resources and document delivery;
- provide direction for the sciences cluster in the areas of information services, collection development and collection management, and information technology;
- administer all phases of public services operations necessary to plan, staff, manage, and evaluate the services provided by the sciences libraries;
- prepare and monitor the various library budgets;
- serve as a member of the Public Services Council and other public services and library-wide groups which provide direction to the Library Administration and to the campus;
- participate in the discussions, planning efforts, and program direction of the Public Services Council.

As Head of the Shapiro Science Library, the librarian will:

- provide general oversight of the collections of the Science Library;
- manage the appropriate funds including personnel and collections;
- work directly with the Department Chairs in the Sciences and the dean of the SNRE, or their designated personnel, as necessary.

REQUIRED QUALIFICATIONS:

- ALA-accredited MLS;
- five years of administrative experience including work in a research, special, or science library serving similar clientele;
- evidence of innovative leadership;
- ability to translate vision into action;
- experience with relevant information technology;
- familiarity with issues, trends, and operational needs of research libraries;
- excellent interpersonal skills and ability to work effectively with faculty, staff, & students of culturally diverse backgrounds;
- demonstrated organizational, analytical and communication (both oral and written) skills.

RANK, SALARY, & LEAVE: Rank of Librarian. Final salary dependent on years of previous relevant experience (Minimum salary of \$60,000); 24 working days of vacation/year; 15 days of sick leave/year with provisions for extended benefits.

RETIREMENT PLAN: TIAA/CREF retirement plan

TO APPLY: Please send cover letter and resume to:
Lucy Cohen; Library Human Resources
404 Hatcher Graduate Library North
University of Michigan; Ann Arbor, MI 48109-1205.

APPLICATION DEADLINE: Applications received by 4/30/98 will be given first consideration

The University of Michigan is a non-discriminatory, affirmative action employer.

ANNOUNCEMENT OF VACANCY

University of California Davis, California

POSITION AVAILABLE

Assistant/Associate University Librarian for the Sciences

SALARY RANGE

\$53,400-\$87,600, based on qualifications and experience.

OPEN Immediately.

SCOPE

The Sciences at Davis are served by four units - the Health Sciences Library, the Medical Center Library, the Physical Sciences Library, and the Biological and Agricultural Sciences Department. The academic departments and the professional schools served are among the most distinguished in the nation. Staffing for these units consists of 17 Academic, 33 Clerical and 15 FTE Student staff. The annual collections budget for these areas exceeds \$3.5 million.

RESPONSIBILITIES

This is a senior level administrative position, which reports directly to the University Librarian and serves as part of the senior management team. Directly supervises the Heads of HSL, PSL, Bio/Ag, and the Medical Center Library. Has primary responsibility for planning and implementing effective Library services in support of the University's programs and research in the sciences. In coordination with the Associate University Librarian for Collections, has responsibility for allocating resources, spending funds and building collections in the sciences including the acquisition of electronic materials and participation in the development of the California Digital Library. Coordinates activities and services among the four science units with other Library units and programs. Promotes scholarly use of the science collections. Assists with special projects and proposals for the Science Units. Provides liaison with Science faculties. Represents the Library in UC System and national science forums.

QUALIFICATIONS

A graduate degree in library science from an ALA-accredited institution or its equivalent. Collection development and extensive management experience in

a science or bio-medical library in a research library essential. Excellent writing, speaking and interpersonal skills required. Ability to work effectively with colleagues, students, faculty, and staff in a rapidly changing, complex, diverse, and multicultural environment. Demonstrated decision making and planning skills required. Experience in coordinating a large library service staff in several branches preferred. Experience with current and developing information services and automated systems required. Demonstrated understanding of bibliographic sources and processes in the sciences. Evidence of ability to lead, coordinate and motivate professional associates within a collegial framework.

THE ENVIRONMENT

The University of California, Davis campus is a multicultural environment with a strong commitment to create a diverse community of faculty, staff and students. It has an enrollment of 23,500 students and offers a balanced academic program. Library holdings currently total more than 2.5 million and grow at an annual rate of 80,000 volumes. Davis is a pleasant community of 50,000 located in the lower Sacramento Valley - 75 miles northeast of San Francisco and 15 miles west of the state capitol. As a result of the University's presence, Davis offers many cultural advantages and a wide range of professional services.

BENEFITS

Assistant/Associate University Librarians are academic appointees. They earn 24 days of vacation and 12 days of sick leave per annum. The University has an excellent retirement system, which is coordinated with Social Security. Several health and dental plans are offered by the University.

FINAL FILING DATE

Applications received by June 1, 1998 will be assured consideration.

Applicants should send letter, resume, and the names and telephone numbers of four references to:

George E. Bynon
Associate University Librarian
Peter J. Shields Library
University of California
100 North West Quad
Davis, CA 95616-5292

Telephone: (530) 752-2110

The University of California, Davis is an affirmative action/equal opportunity employer.

Demonstrations of geoscience databases will take place on September 9, 1998 at AGU Headquarters. Have you constructed a dataset you would like to demonstrate? Would you like to see demonstrations of commercially developed geoscience databases? "Science Editing and Information Management across disciplines . . . across boundaries . . . through time"

Michael Noga
Massachusetts Institute of Technology
Science Library
14S-134
Cambridge MA
02139-4307 USA

Mary Frances Lembo, GIS Newsletter Editor
2500 George Washington Way #237
Richland, WA 99325

Bulk Rate
U.S. Postage
PAID
Permit No. 193
Richland, WA 99352

"Science Editing and Information Management across disciplines . . . across boundaries . . . through time" Washington D.C., September 9 - 14, 1998. Broad meeting topics include: electronic publishing, ethics, intellectual property, archiving and information retrieval, education and training. e-mail edinfo98@kosmos.agu.org WWW earth.agu.org/editorinfo98
Be Part of It!