



## CONTENTS

## Special Features:

Preliminary Schedule/Abstracts - Annual Meeting.....	8
Nominations Committee.....	4
Annual Conference Announcements.....	4
Field Trip Registration Form.....	15
Research Fellowship Announcement.....	16

## Departments:

President's column.....	1
Vice President's column.....	1
Mid Year Reports.....	3
Announcements.....	4
Literature Reviews.....	6
Forthcoming meetings/conferences.....	5
Job Announcements.....	6

## PRESIDENT'S COLUMN

Those of you attending the Geological Society of America annual conference in Salt Lake City to take advantage of the many GIS programs offered there will want to bring this August GIS Newsletter with you, since it contains information about the GIS events. Connie Manson has put together an exciting Symposium, with an impressive array of speakers dealing with a topic central to the provision of geoscience information.

I would like to invite all members to attend the two GIS business meetings that will be held during the 1997 annual meeting, and to send me agenda items for these meetings.

All committee chairs, new officers, and representatives are asked to attend the Executive Board Meeting, to be held on Sunday, October 19, 1997, from 9 am to noon in the Marriott in Salt Lake City. All other members are invited to attend as well.

The Annual Business Meeting for all members will be held on Tuesday, October 21, 1997 at the Salt Palace Convention Center from about 2-5 pm. We will have at least one guest speaker, Ed Lizewski from USGS Reston, to talk about the USGS serials problems and perhaps the National Library of Geosciences proposal. Included in this meeting will be updates to the annual reports from officers, committee chairs, and representatives, which are printed in full in the October GIS Newsletter.

In order to make this deadline, annual reports from officers, committee chairs, and representatives are due on September 12.

Please send a copy to both me and to the Newsletter Editor Mary Frances Lembo, so she can include these in the October GIS Newsletter, which we hope will reach all members before the annual meeting.

Barbara J. DeFelice, GIS President

## VICE-PRESIDENT'S COLUMN

Our Annual Meeting in Salt Lake City is set! This issue of the Newsletter includes the schedule, the abstracts, and lots of other information. By both chance and design, it's all come together.

The framework of the Symposium might have been my design, but the details filled in by the speakers exceeded my dreams. The speakers-- all accomplished, senior members of their organizations and professions -- will speak about the "Costs and Values of Geoscience Information" from the points of view of geologists, publishers, and librarians, in both the public and private sectors. We know how we've been impacted by the rapid changes in our field. But how are the other players-- especially the geoscientists and publishers-- being impacted? This session should help us see the Big Picture--to better understand the concerns and perspectives of the geoscience community as a whole by learning more about the different parts.

The Technical Session doesn't get planned, it just happens: It's made up of whatever abstracts are sent in. And this year, by pure chance, 4 of the 7 abstracts pertain to national geologic surveys! The scheduling got lucky, too: Because of a last-minute GSA scheduling crisis, our Technical Session was moved from the Monday afternoon to the Wednesday morning -- but that turned out to be a happy accident! One of our speakers, Dr. William Holser, was greatly concerned by last spring's budget threats to the USGS Library-- and is doing something about it. He will host the first-ever Friends of the U.S. Geological Survey Library meeting, to be held Tuesday evening -- part of his efforts to have the USGS Library established as the National Library of the Geosciences. That meeting will be great publicity for our Technical Session where he'll be presenting his paper, "Toward a National Library of Geosciences" the very next morning.

As usual, our meeting is very full. There are a few open times, though, for you to visit the exhibits, schedule your committee meetings, and even catch some posters and papers.

Rich Soares has planned a terrific field trip: a half-day geologic tour of Lake Bonneville and then (depending on the weather) either a hike to tour Timpanogas Cave or a tour of the Bingham copper mine. The registration form is in this issue. Don't miss it!

This year the headquarters hotel is the Little America-- many blocks from the Salt Palace Convention Center. The schedulers at GSA have been very good to us, though: all our sessions are either in the Convention Center or across the street at the Marriott. But, Words To The Wise: Get your hotel reservations in early! There is another large group in Salt Lake City at this same time, and the rooms are filling up quickly! Oh-- and don't forget to include your reservation for the GIS Luncheon with your registration: Tickets will not be available there.

See you in Salt Lake City!

Connie Manson, GIS Vice President

**GEOSCIENCE INFORMATION SOCIETY**  
**1997 OFFICERS**

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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 October 1997 issue of the GIS Newsletter should be received no later than 10 September 1997. If possible, please send materials by e-mail or on IBM-compatible disc (WordPerfect 5.1, WordPerfect for Windows 6.1, or ASCII format).

**MIDYEAR (JUNE 30) FINANCIAL REPORT - 1997**

**Checking accounts:**

Balance from 1996:	
Bank of America	\$22,378.95
First National Bank (WY)	<u>8,136.13</u>
	\$30,515.08

**Income:**

	First National Bank	Bank of America
Dues - Personal	\$ 5680.00	
Dues - Institutional	1500.00	
Dues - Sustaining	100.00	
Dues - Retired	150.00	
Dues - Student	60.00	
Dues - Sponsored	140.00	
Pooled sponsor fund	492.00	
Gift	300.00	
Publication sales	2178.00	
Newsletter subscriptions	450.00	
Bank interest	<u>122.70</u>	<u>279.16</u>
<b>Total income</b>	\$11172.70	+ \$ 279.16 = <b>\$11451.86</b>

**Expenses:**

AGI member dues	\$ 176.00
Secretary	304.24
Exhibits Committee	27.90
1996 annual meeting (GSA)	3264.77
Conference call (GIS Board)	166.44
Publication Manager	132.00
Newsletter printing/ mailing	1424.10
Newsletter editor	28.21
Directory of Geoscience Libraries	1770.00
"GSA Today" mailing to members	<u>282.50</u>
<b>Total expenses</b>	<b>\$7576.16</b>

**Midyear 1997 checking balance = \$41,966.94**

**Savings accounts:**

	Ansari Funds	Bristol Fund
1996 closing balance	\$3931.45	\$772.90
1997 interest to June 30	<u>55.66</u>	<u>7.70</u>
<b>Total</b>	<b>\$3987.11</b>	<b>\$780.60</b>

**Total in savings = \$4767.71**

**Grand total, checking and savings = \$46,734.65**

	<u>Income</u>	<u>Expenses</u>
1997 budget	\$16,565.00	\$19,800.00
Through June 30, 1997	\$11,515.22	\$ 7,576.16

Submitted by  
Sally Scott  
GIS Treasurer

## MIDYEAR REPORT GIS SECRETARY 7/97

Our active membership now stands at 190. We have 10 new personal members and 1 new institutional member:

**David Allen** is the Map Librarian and Head of the Earth & Space Sciences Library at SUNY Stony Brook in New York. His stated interests are in the history of cartography and digital cartography.

**Pam Barry** is the Librarian at the Institute of Mining Research, University of Zimbabwe in Mount Pleasant, Harare, Zimbabwe. Ms. Barry's membership is sponsored by a GIS member.

**Garrett Eastman**, a new student member, is a Library Assistant at Lindgren Library, Massachusetts Institute of Technology in Cambridge, Massachusetts. Mr. Eastman's stated interests are in the Internet, GeoRef and other bibliographic databases, and in digital spatial data.

**Adona Fleming** is Electronic Resources/Science Librarian at Own Science & Engineering Library, Washington State University in Pullman, Washington. Her stated interests are in digitization and image databases.

**Pauline Kamel** is the Coordinator, Collection Management at the Earth Sciences Information Centre, Natural Resources Canada in Ottawa, Ontario. Ms. Kamel's stated interests are in library preservation and collection development.

**John Moreau**, a new student member, works at the Space Photography Lab, Department of Geology, Arizona State University in Tempe, Arizona.

**Thomas Plawman** is a Reference Assistant at the Shapiro Science Library, University of Michigan in Ann Arbor, Michigan.

**Edgar Rivera-Ortiz**, a new student member, is employed by the University of Puerto Rico-Mayaguez. His stated interest is in sedimentology.

**Clement Suyumbwa** is Technical Records Officer at the Botswana Geological Survey in Lobatse, Botswana. Mr. Clement's membership is sponsored by a GIS member.

**Michele Wiles**, a new student member, is located in Ann Arbor, Michigan.

**Fachbibliothek fur Geowissenschaften**, Montanuniversitat Leoben is our newest corporate member and is located in Leoben, Austria.

This year GIS, through the International Initiatives Committee, is developing a sponsored membership program to increase international membership. We have four international members sponsored from this program for this year. GIS members donated an additional \$392.00 for international members yet to be named.

Respectfully submitted,  
Lisa G. Dunn, Secretary

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### NOMINATIONS COMMITTEE

We are happy to announce that the new 1997-1998 Vice-President, 1998 annual meeting coordinator, and future President is Charlotte Derksen. The new Treasurer is Susan Goodman. The Nominations Committee ended its assignment with the tallying of ballots August 6. We had an exceptionally

excellent slate of candidates this year and wish to thank the candidates who offered their services to the society for the coming year. The members of the committee are Nancy Blair, Lois Pausch, Miriam Sheaves, and Janice Sorensen. The Chairman wishes to thank the committee members for their dedicated work this year.

Nancy L. Blair  
Chair, Nominations Committee

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### ANNUAL CONFERENCE ANNOUNCEMENTS:

#### Digital Database Forum: Sunday, October 19, 1:30-4:30pm

We are close to having all of our speakers for this year's Digital Database Forum. The first half of the session will be devoted to electronic journals in the geosciences: availability, technical issues, and user/library concerns. We will have presentations from Elsevier, AIP (American Institute of Physics), AMS (American Meteorological Society), and Springer-Verlag. The second half will focus on CD-ROM publications in the earth sciences. Speakers from John Wiley & Sons and (hopefully) the National Geophysical Data Center will update us on their latest digital offerings, including interactive media.

Vivienne Roumani-Denn  
Shaun Hardy

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### ATTENTION GSA CONFERENCE GOERS:

The GSA Meetings Coordinator sent a memo indicating that hotel reservations for the Meeting in Salt Lake will be tight (another convention overlaps GSA during the pre-meeting weekend on Oct. 17 and 18).

It is STRONGLY ADVISED to make  
hotel reservations as early as possible

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### ANNOUNCEMENTS

#### Mines Library to Move

The Mines Library at University of Nevada, Reno is tentatively scheduled to be closed for a week beginning 24 July 1997 while relocating to the historic renovated Mackay Mines building. The library will be merged with the Engineering Library and henceforth be known as the DeLaMare Library. Please note change of phones and address for Library and Linda Newman (henceforth to be known as Geoscience and Map Librarian):

**DeLaMare Library/MS 262**  
**University of Nevada**  
**Reno, NV 89557**  
**phone: (702) 784-6945 fax: (702) 784-6949**  
**www.library.unr.edu/~delamare**

The building is nearly completed and looking fabulous on 4 floors with 3-floor atrium, skylights, custom carpet and furnishings.

Linda Newman  
Geoscience and Map Librarian  
lnewman@unr.edu

### **New URL: GIS Preservation Committee**

Due to some directory restructuring, the GIS Preservation Committee has a new URL. The New URL for the GIS Preservation Committee is:

<http://vector.gis.psu.edu/GIS/gispresv.html>

The Action Plan, is located on this site, and can also be reached directly at:

<http://vector.gis.psu.edu/GIS/gispplan.html>

Thanks,

Lisa (Recupero) Wishard

GIS Preservation Committee co-chair

Penn State Earth and Mineral Sciences Library

L2W@psulias.psu.edu

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### **PUBLICATIONS UPDATE**

The GIS Proceedings Volume 27 1996 and the 1997 GIS Membership Directory are both at the printers. They should be shipped out the last week of August or the first week of September.

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### **NEWS OF THE USGS LIBRARIES**

The members of the library staff in Reston are busily planning for the move of the library to the first floor and hoping they will have enough space to fit everything in. The new location will make the library more visible to employees and visitors to the national center, but there will be temporary interruptions in service during the move planned to take place in the next few months. The library in Menlo Park will participate in the regional center's Open House Sept. 12-14 and invite GIS members in the San Francisco Bay area to visit us. The new USGS logo will be prominently featured during the Open House on t-shirts, signs, and hats and the Open House is called the New Survey.

Nancy L. Blair

USGS

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### **FORTHCOMING MEETINGS/CONFERENCES**

#### **5th ACM Workshop on Geographic Information Systems, Las Vegas, Nevada, USA November 13-14, 1997**

Scope of the conference: The scope of this conference will be to regroup all people carrying out researches in novel systems based on spatial data and knowledge. The emphasis will be essentially targeted to the development of generic principles and systems in computing based on those applications. For cross-fertilizations and synergies between several applications can help to develop new computing knowledge. It is organized within ACM CIKM'97, the Sixth ACM International Conference on Information and Knowledge Management

Location: Monte Carlo Hotel, 3770 Las Vegas Boulevard South, Las Vegas, Nevada 89109 USA; Phone: (702) 730-7777

Please visit our WWW site for up-to-date CIKM97 program information and related activities:

<http://www.arian.eas.asu.edu/cikm97/cikm97.html>

If you have any questions contact appropriate person: on registrations (Dr. Park: [ekpark@cstp.umkc.edu](mailto:ekpark@cstp.umkc.edu));

on technical programs (Program Chair: Dr. Robert Laurini at [robert.laurini@if.insa-lyon.fr](mailto:robert.laurini@if.insa-lyon.fr)); on other conference and GIS97 related matters (General Chair: Dr. Kia Makki at [kia@cs.unlv.edu](mailto:kia@cs.unlv.edu)).

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#### **Land Satellite Information in the Next Decade II Sources and Applications December 2-5, 1997 Omni Shoreham Hotel Washington, DC**

Mark your calendar NOW to attend the second specialty conference on Land Satellite Information in the Next Decade II: Sources and Applications

This conference builds on the highly successful 1995 Land Satellite Information Conference that previewed the characteristics of the next generation of high resolution satellite systems. Organized by the American Society for Photogrammetry and Remote Sensing (ASPRS) with help from the North American Remote Sensing Industries Association (NARSIA), the conference is co-sponsored by the Landsat Management Team (NASA, NOAA, and USGS), NIMA, USDA, EPA, NASA Applications, and others.

This year's conference will bring together more than 700 experts from the satellite companies, value-added producers and end user communities to study anticipated applications, detect potential problems, and discuss common solutions.

For a copy of the Preliminary Program and Registration Information, contact ASPRS at:

ASPRS

5410 Grosvenor Lane, #210

Bethesda, MD 20814

Phone: 301/493-0290 Fax: 301/493-0208

E-mail: [asprs@asprs.org](mailto:asprs@asprs.org)

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#### **International Conference and Workshop on Interoperating Geographic Information Systems, Santa Barbara, California, USA December 3-4 and 5-6, 1997**

##### **Preliminary Announcement and Call for Participation**

The National Center for Geographic Information and Analysis and the Open GIS Consortium Inc. announce an International Conference on Interoperating Geographic Information Systems, to be held in Santa Barbara December 3-4, 1997, and to be followed December 5-6 by an invitational Workshop. Topics to be addressed at the conference include the current state of research in related disciplines concerning the technical, semantic, and organizational issues of GIS interoperation; case studies of GIS interoperation; theoretical frameworks for interoperation; interoperation of data and metadata; inter-operation in GIS application areas, including environmental modeling; and evaluations of alternative approaches. The program will include invited keynote presentations and contributed papers; limited space will also be available for posters, demonstrations, and exhibits.

Proposals for contributed presentations are invited. They should include an extended (1,000-word) abstract, and must be submitted by e-mail prior to September 15, 1997. Full versions of papers will be due by the conference date. Further information on registration will be available shortly via the NCGIA Web site [www.ncgia.ucsb.edu](http://www.ncgia.ucsb.edu) or directly via [www.ncgia.ucsb.edu/conf/interop97/](http://www.ncgia.ucsb.edu/conf/interop97/). This site will also be

used to post the program and full papers as they become available. A CD of the papers will be issued after the conference.

The workshop following the conference will be limited to approximately 30 invited participants. It will build on the conference proceedings by focusing on the development of a research agenda, identifying those topics of interest that will likely yield to concentrated research effort within short, medium, and long time frames. Funds to support participation in the workshop will be provided by the U.S. National Science Foundation through NCGIA's Varenus project. Expressions of interest in participation in the workshop should also be submitted by e-mail prior to September 15, 1997. They should include a short resume and short (1,000-word) position paper on the issues to be addressed by the conference and subsequent workshop.

E-mail concerning the conference and workshop, including submissions or requests for information, should be sent to [i20@ncgia.ucsb.edu](mailto:i20@ncgia.ucsb.edu) or to the Conference Secretariat by phone (805) 893-8224 or FAX (805) 893-8617.

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### LITERATURE REVIEWS edited by Miriam Sheaves

**The Amber Book.** Ake Dahlstrom and Leif Brost (translated by Jonas Leijonhufvud). Tucson, AZ: Geoscience Press, 1996. 134 p. \$27.00. ISBN: 0945005237.

*The Amber Book*, with a Scandinavian focus, was originally published in Swedish under the title *Stenen som flyter och brinner* (1995, Norstedts Forlag: Stockholm). The title was translated to English and expanded to include additional material on world amber resources in 1996. *The Amber Book* is a fun and funky book that outlines the legend and lore of amber, including quotes, and renditions of ancient tales such as "The fisherman and the sea goddess," a Lithuanian folktale of a sea goddess who lives in an amber castle on the bottom of the Baltic Sea. The book is abundantly filled with delightful captions (which often supplement the text) and color photographs of amber art and artifacts. There are several small scale maps of the Baltic region, as well as the world depicting amber "find" areas. The majority of the book outlines the history of amber, amber trade, amber art and artists, basic amber facts and a discussion on whether or not amber really contains dinosaur or any form of viable DNA. The book also contains a table that outlines properties of the major amber types as well as a geologic time scale that lists amber formations by associated geologic period. The "Other amber facts" section includes a listing of historical amber artists, contemporary amber collections and a brief bibliography. Some of the translations are a bit awkward, and the content is probably more appropriate for a lay researcher than a scholarly one, but this book would complement any collection specializing in amber, gems, jewelry making, art history or Scandinavian history.

Lisa (Recupero) Wishard  
Penn State Earth and Mineral Sciences Library

## JOB ANNOUNCEMENTS

### Search Reopened - Professional Vacancy - Librarian of the Bernhard Kummel Library of the Geological Sciences

The Harvard College Library seeks a dynamic individual to head the Kummel Library and provide leadership in the field of geosciences information at Harvard.

Reporting to the Librarian for the Sciences, administers the Bernhard Kummel Library of the Geological Sciences, which supports individual, research and curriculum in geology, geophysics, and related subjects, primarily within the Department of Earth and Planetary Sciences. The Kummel Library is a unit of the Harvard College Library. Its collections include 63,000 volumes, 41,000 maps, and 850 periodical titles. The annual budget is 350K, including a materials budget of 90K. Direct responsibilities include developing the Kummel collection; initiating collaborative collection development for print and electronic resources for the geoscience community at Harvard; providing reference services and guidance in geoscience research; preparing and monitoring the Kummel budget; and managing a staff of 3 FTE plus students. Areas of supervisory oversight include all library circulation, reserves, acquisitions, technical services, and interlibrary loan operations.

**Qualifications:** M.L.S. plus subject degree in geology, earth sciences, or related field, and 3-5 years of relevant library experience. Knowledge of geosciences literature and demonstrated ability with electronic resources. Knowledge of geological sciences book and map trade. Experience in managing science collections and budgets. Superior inter-personal and communication skills. Ability to work with resources in a wide range of foreign languages. Demonstrated understanding of the issues and trends in earth sciences research. Experience with cartographic resources in the earth sciences.

**Compensation:** Appointment salary dependent on qualifications, mid-upper \$50's. Harvard University offers a competitive program of benefits.

The review of applications will begin immediately and continue until position is filled. Interested parties are invited to submit a letter of application addressing qualifications, resume, and the names of three references to:

**Hazel C. Stamps**  
**Senior Human Resources Program Administrator**  
**Harvard College Library**  
**Widener 192**  
**Cambridge, MA 02138**

HARVARD UNIVERSITY UPHOLDS A COMMITMENT  
TO AFFIRMATIVE ACTION AND EQUAL EMPLOYMENT  
OPPORTUNITY

July 1997

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### Vacancy Announcement - Stanford University Libraries and Academic Information Resources

**Position Title:** Head Librarian & Bibliographer Mathematical & Computer Sciences Library

**Classification:** Associate Librarian/Librarian

**Salary Range:** Associate Librarian \$39,200-\$49,800

Librarian: \$44,700 - \$58,800 FTE: 100%

**Appointment Date:** January 1, 1998 or sooner

**Responsibilities:**

1) Defines goals, sets policies, makes plans, and manages

Mathematical and Computer Sciences Library.

- a) Maintains contact with faculty and students in the Departments of Computer Science, Mathematics, and Statistics to ensure that library service adequately support current research and teaching programs.
  - b) Keeps abreast of current information and literature in all appropriate formats and trends of publication and distribution of information in the mathematical and computer sciences.
  - c) Selects current and retrospective materials in the mathematical and computer sciences according to established policies and practice.
  - d) Reviews collections for relegation, discard, and preservation purposes, and plans and supervises evaluations and use studies of the mathematical and computer science collections.
- 2) Plans, organizes, and allocates resources to maintain quality service and achieve goals.
  - 3) Provides reference service and performs online bibliographic searches of mathematical and computer science databases.
  - 4) Develops and implements library instruction programs in mathematical and computer sciences including support and training for users of MathSci, INSPEC, and other databases.
  - 5) Coordinates Mathematical and Computer Sciences Library services, activities, and the collection development programs with other Science and Engineering Resource Group branch libraries and with other units at Stanford as needed.
  - 6) Contributes to library-wide planning, collaborates with colleagues, and may supervise science programs at other branches as required.
  - 7) Serves on University and Library committees as appropriate.

**Qualifications:**

- 1) Academic degree in the mathematical or computer sciences or demonstrated equivalent in experience is required. An undergraduate or graduate degree, mathematics, computer science or statistics is preferred.
- 2) Knowledge of the literature of the mathematical and computer sciences and its organization is required. A master's degree in library or information science from an accredited graduate school is the preferred evidence, though Stanford will accept the demonstrated equivalent in training and experience.
- 3) Effective supervisory and management competence is required, as is the demonstrated ability to contribute usefully to planning and implementation of new and improved services and resources. Preferred evidence is successful work in a graduate research library.
- 4) General knowledge of collection development principles and practices is highly desirable and required for appointment at the Librarian level.
- 5) Demonstrated ability to communicate and work effectively with faculty, students, and library staff is required. Ability to perform effectively in and contribute successfully to a diverse, multicultural workplace is required.
- 6) Bibliographic proficiency in German, French, Japanese or Russian is desirable.
- 7) Experience with microcomputers, automated systems, programming, and instructional offerings will weigh heavily in favor of the candidate.

Four to five years public service experience with supervisory responsibility and significant relevant collection development experience are required for appointment at the Librarian rank. Comparable successful experience in a non-library environment will be considered as equivalent.

**Background:** The Mathematical and Computer Sciences

Library is one of seven science research branches in the Stanford University Libraries system. The Mathematical and Computer Sciences Library provides services primarily to over 100 faculty, 450 graduate students, 140 undergraduate students, plus post-doctoral students and visiting scholars of the Department of Computer Science, Mathematics, and Statistics. It also serves the mathematical and computer science information needs of other members of the Stanford community. It has a collection of over 60,000 volumes including approximately 700 serial subscriptions and a large collection of technical reports in print and online. The Library is staffed by one librarian and 3 FTE support staff plus student assistants.

**Applications:** The review of applications will begin August 29, 1997. Applications will be accepted until the position is filled. A letter of application, resume, and the names, addresses, and telephone numbers of three references should be submitted by August 29, 1997 to:

**Search Committee for Math/CS Librarian**  
**c/o Steve Gass**  
**Engineering Library**  
**Terman Engineering Center**  
**Stanford University**  
**Stanford, CA 94305-4029**

Stanford is committed to the principles of diversity and encourages applications from women, members of ethnic minorities, and individuals with disabilities.

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**UNIVERSITY OF CALIFORNIA, BERKELEY**  
**ASSISTANT/ASSOCIATE LIBRARIAN CHEMISTRY**  
**LIBRARY \$31,032-\$44,544 per annum, hiring range**

The Chemistry Library's primary clientele is the college of Chemistry including 85 faculty, 500 post-doctoral fellows and graduate students, and 600 under-graduates in the departments of Chemistry and Chemical Engineering.

The librarian's primary assignment is the development of specialized services to users, chemistry collection development and management, maintaining close working relationships with faculty. S/he participates as a team member in the Chemistry Library and in the entire Physical Science Libraries unit. The position requires and MLS from an ALA accredited library school (or equivalent), superior communication skills, excellent analytical and organizational skills. Academic training in chemistry is preferred. See our Web site for the full announcement. <http://library.berkeley.edu/LHRD/>

To apply, send cover letter, complete resume, and names, addresses and phone numbers of three knowledgeable references to

Janice H. Dost  
Director for Library Human Resources  
447 Doe Library  
University of California  
Berkeley, CA 94720-6000  
FAX 510/642-8675.

Closing date: October 15, 1997.

University of California is an affirmative action employer.

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GIS '97 -- SALT LAKE CITY  
GEOSCIENCE INFORMATION SOCIETY  
Annual Meeting Preliminary Schedule  
October 19-October 23, 1997  
Salt Lake City, Utah

*Note: Italicized items are non-standard events, included for your information*

**Sunday, October 19**

- 9:00 am-noon GIS 1996 Executive Board Meeting (Open to members): Marriott Salon  
(*Presiding: Barbara DeFelice*)
- 1:30 pm-4:30 pm GIS Digital Database Forum: Marriott Salon A&B  
(*Presiding: Vivienne Roumani-Denn*)

**Monday, October 20**

- 9:30 am-11:30 am GIS Collection Development Issues: Marriott Salon A&B  
(*Presiding: Steve Hiller*)
- [1:00-5:00 pm] [*Suggested time for committee meetings, e.g., The Preservation Committee*]
- 7:00 pm-9:30 pm GIS Reception: Marriott Solitude  
(*Presiding: Barbara DeFelice*)

**Tuesday, October 21**

- 8:00 am-12:00 am GIS Symposium: "The Costs and Values of Geoscience Information": SPCC257  
(*Presiding: Connie Manson, with Louise Zipp*)
- 12:00 pm-1:45 pm GIS Luncheon and Awards: SPCC: Ballroom G  
(*Presiding: Barbara DeFelice*)
- 1:45 pm-4:45 pm GIS Annual Business Meeting: SPCC 254A  
(*Presiding: Barbara DeFelice*)
- [5:00-7:00 pm] [*Friends of the U.S. Geological Survey Library: Marriott Cottonwood*]

**Wednesday, October 22**

- 8:00-10:00 am GIS Technical Session: SPCC 251F  
(*Presiding: Joanne Lerud, with Lisa Recupero*)
- 10:00 -noon GIS GeoRef Users Group: Marriott Brighton-Snowbird  
(*Presiding: Suzanne Larsen*)
- 1:30-3:30 pm GIS Professional Issues: Marriott Brighton-Snowbird  
(*Presiding: Jim O'Donnell*)
- 5 pm-8 pm GIS 1996/1997 Executive Board Meeting; location to be announced  
(*Presiding: Connie Manson*)

**Thursday, October 23**

- 8:00 am -4 pm GIS Field Trip; Pre-registration with Rich Soares required



USE OF GEOSCIENCE INFORMATION BY THE CONSULTING GEOSCIENTIST COMMUNITY  
LAPRADE, William T., Shannon & Wilson, Inc., 400 N. 34th Street, Suite 100, Seattle, WA 98103

Throughout the United States, private geologic/geotechnical consultants are being asked to make difficult decisions on marginally stable and hazardous ground. Among others, these include site selection studies, structural foundation studies, groundwater and pollutant migration studies, seismic risk determinations, and mass wasting inventories. They are performed for industrial, commercial, and residential clients. Under the present economic system, these clients cannot afford the time or money to perform original research on their sites.

More than ever, the private consultant relies on government-supported research and mapping to solve the big issues. Analogous situations in one part of the world or country can be of great assistance to practicing professionals elsewhere. Their publication in the media, including electronic media, benefits all levels of society, from the prevention of economic and natural disaster to the development of factory and home.

Five case histories illustrate how basic research of geologic process and site conditions were used on consulting geotechnical, engineering, and groundwater publication projects to serve government, industrial, and other private clients. In some of the cases, the information was a direct transfer of site-specific data; however, in other cases, the research was performed at distant locations, but a description of the geologic process aided the geologist in recognizing the local situation and proposing engineering solutions.

The reception of different forms of electronic media received mixed reviews. Electronic journals have not yet been fully adopted, due to cost and unfamiliarity of the staff with the system. The downloading of technical data regarding seismic mapping and stream flows has been very successful and cost effective; however, the time and effort to download long research papers has been excessive and caused staff members to order paper copies in the traditional way. It is more efficient to order a paper copy.

The most frustrating experience has been the availability of the USGS new publication list by electronic means only. It requires more administrative work to distribute to staff.

Two of the most useful forms of electronic information retrieval are the GEOREF database, used to find reference material by subject matter or by geographic area, and newsgroups/list serves used to contact colleagues all over the world.

DISSEMINATING USGS DATA AND INFORMATION

DUFF, Beth, National Mapping Division, U.S. Geological Survey, 12201 Sunrise Valley Drive, MS 508; [bduff@igsm008.er.usgs.gov](mailto:bduff@igsm008.er.usgs.gov)

As the Nation's largest natural resources agency, the USGS provides managers, planners and the public basic information and research on water, energy, mineral, and biological resources as well as natural hazards such as earthquakes and floods. In the process, the USGS produces several thousand new and revised maps and reports each year and answers millions of inquiries for information, while working in cooperation with nearly 2,000 local, state and federal agencies in all 50 states. In the context of this symposium the USGS role encompasses research, publication, distribution, and its library. Each of these functions will be addressed, but the focus will be on publication and distribution of USGS information.

The mission of the USGS is to provide the Nation with reliable, impartial information to describe and understand the Earth. The research that leads to that information is the scientific work of the USGS. An increasing proportion of that work is done in cooperation with other government organizations in direct response to their specific information needs. This ensures that the data and information generated by the research are of interest and concern to the natural resource managers. Also cooperation combines research funds from interested organizations and focuses them on addressing common issues. The USGS has recently instituted a planning process for products to be developed, and also is reviewing its criteria for publishing technical research results. Since federal government does not copyright its publications, the considerations are different from those of non-federal organizations. Involving other organizations in customizing and incorporating USGS data and information into their products is a way to increase the dissemination and use of USGS data and information.

The USGS has the opportunity to distribute its research results in hard copy and in electronic form. With rapidly changing technology, the criteria for distribution mechanisms is evolving; the customer segment for each information set is a major factor in deciding how to distribute information. Congress has authorized the federal government to charge for the cost of reproducing and distributing information. Therefore, the USGS is able to distribute its data and information in the form desired by customers for that information set when sufficient overall demand exists.

THE IMPACT OF ELECTRONIC DISSEMINATION: THE EXPERIENCE OF A STATE GEOLOGICAL SURVEY

BUCHANAN, Rex C., Kansas Geological Survey, 1930 Constant Ave., Lawrence, KS 66047, [rex@kgs.ukans.edu](mailto:rex@kgs.ukans.edu); CARR, Timothy R., Kansas Geological Survey, 1930 Constant Ave., Lawrence, KS 66047.

As a state agency and a division of the University of Kansas, the Kansas Geological Survey (KGS) is charged with statutory responsibility

to disseminate geologic information. Electronic communication has enabled the KGS to make major changes in the way it fulfills that responsibility. The electronic methods used for dissemination vary according to the type of information provided. The earliest changes came in map production. Since the 1980s, maps that the KGS sells to the public have been generated on-demand from digital data, with output to an electrostatic plotter. That process saves inventory costs, the expense of a large press run, and allows easy correction and updating. A 1996 survey of our customers verified their preference for on-demand maps; the survey showed that obtaining information as quickly as possible (both in hard copy and digital formats) was a high priority, and that pricing and printing quality were less of a concern. For the past three years, the KGS has used the World Wide Web to disseminate geologic reports, and particularly data. Electronic dissemination has proven appropriate for searchable data bases, such as the KGS bibliography of Kansas geology; for short, time-sensitive papers about current research; and for open-file reports, especially those that include color figures. It also appears especially appropriate for disseminating data that would be too expensive to make available in hard copy. A digital petroleum atlas, under construction for the past two years, is heavily used by clients who want immediate access to data, particularly in digital form. Electronic methods, then, have been effective for map production and data dissemination, and are beginning to affect the way the KGS communicates research results. That allows the KGS to make more information available quickly, in a variety of formats.

#### GEOLOGIC REPORT PRODUCTION IN THE 1990'S--EXAMPLE FROM THE WASHINGTON STATE GEOLOGICAL SURVEY

WALSH, Timothy J., Washington Division of Geology and Resources, P.O. Box 47007, Olympia, WA 98504-7007; REED, Katherine M., Washington Division of Geology and Resources, P. O. Box 47007, Olympia, WA 98504-7007, tim.walsh@wadnr.gov

The Washington Division of Geology and Earth Resources (DGER) is a small division of the Department of Natural Resources, which is a leader in GIS technology. However, DGER's budget is now more than half dedicated to outside-funded grants and contracts to support its 13 geologists and 11 other staff members, and we have been unable to modernize as aggressively as the rest of the Department. Recognizing the realities of the 1990's, we are moving toward digital publication, but paper versions of our reports still out-sell digital versions by about 20 to 1. We have begun to prepare urban geohazards maps in ARC-INFO (the Department standard), which is an excellent tool for analysis. Geologic maps are being drafted digitally but are still being published as traditional paper maps. We are converting geologic maps into ARC-INFO for land management purposes (and as part of the National Cooperative Geological Mapping Program) but we have not yet been able to systematize distribution of digital maps (for instance, through an FTP site) due to security concerns and different priorities of our department. Because of our external funding constraints, we now produce about 200 copies of briefer, more narrowly focused contract reports on tight, externally applied deadlines, instead of the 1,000-copy press runs of multi-year applied research reports of the early 1990's. We do, however, still make sure titles are included in bibliographic databases. Eventually, we expect to produce fully digital color reports, searchable map indexes, and CD-ROM or web versions of our bibliographies. However, we expect that the transition to fully digital publication will take several more years of hybrid digital/manual methods as long as it makes sense both for us and our clientele and while we continue to acquire appropriate hardware and software and upgrade our cartographic skills.

#### COST AND VALUE OF GEOSCIENCE INFORMATION -- A PUBLISHER'S PERSPECTIVE

VAN DER HOEK, Bas, Earth Science Department, Elsevier Science Publishers, PO Box 1930, 1000 BX Amsterdam, The Netherlands. After a centuries-long period of stability, the publishing industry is now undergoing a major change, fueled by the information technology revolution. As a first step, the industry now has started to offer journal packages to libraries in electronic form. Basically these products mimic their paper pendants and offer ease of delivery, searching and storage but not much else.

The future approach lies in an integrated, total publishing concept. The basis for this at Elsevier is formed by the Electronic Warehouse which offers: -- generic storage of all articles in SGML; -- generic storage of multimedia material, such as video, sound, datasets, geological maps; -- generic storage of links, including linking of references with an abstracting service. Material is stored in a platform-independent way, so that articles in the future can be represented in line with the interfaces of that time. This system allows the design of products that can range from simple delivery of pdf files to a library client, up to a service provider with a user-friendly WWW interface, offering all desired journals with a link to a secondary service and extensive search capabilities.

The economics behind this process has a drastic influence on a publisher's balance sheet. Investments in the Warehouse are more than \$10 million, and there are also multimillion dollar annual running costs. To ensure a generic product, typesetters will need to work entirely differently and more expensively. Substantial extra income is not to be expected in the short term, as clients will either need to run two different systems (paper/electronic), or take electronic publications in lieu of paper.

In the long term, it is hoped that all parties will benefit: the client by having lower operational costs, and being able to integrate primary and secondary literature, the author by having multimedia means of enhancing his manuscript, and the publisher by being able to offer much more material with added functionalities for a marginal extra fee. Following the premise that the future electronic systems will allow a publisher to sell more units, unit cost may very well go down considerably.

#### ELECTRONIC SOCIETY JOURNALS: TIME-HONORED VALUES AT NEW COSTS

HOLOVIK, Judy C., American Geophysical Union, 2000 Florida Ave. NW, Washington, DC 20009; jholovik@kosmos.aug.org

Tight budgets, bad spending decisions, and unwise publishing practices seem to be hastening the downward spiral of scientific journal subscriptions. Will the electronic media hasten the system to utter collapse, be its salvation, or have little long-term effect on what truly

**SESSION 62**

- 10:05 AM Budd, Ann F.\*, Johnson, Kenneth G.: CONTRASTING EVOLUTIONARY PATTERNS IN RARE AND ABUNDANT SPECIES DURING PLIO-PLEISTOCENE TURNOVER OF CARIBBEAN REEF CORALS [50231]
- 10:25 AM BREAK
- 10:40 AM McShea, Daniel W.\*: PARTS AND INTEGRATION: CONSEQUENCES OF HIERARCHY [3114]
- 11:00 AM Håkansson, Eckart\*, Thomsen, Erik: CLONAL PROPAGATION IN CHELOSTOME BRYOZOANS II; LONG TERM PATTERNS [50540]
- 11:20 AM McKinney, F. K.\*, Lidgard, S., Taylor, P. D.: MACROEVOLUTIONARY TRENDS: PERCEPTION DEPENDS ON THE MEASURE USED [1392]
- 11:40 AM Gould, Stephen Jay\*: PUNCTUATED EQUILIBRIUM AS A BASIS FOR MACROEVOLUTIONARY THEORY [3111]

**SESSION NO. 63**

**S13. Quaternary Geology and Geomorphology Division Symposium: Isotopes and Earth Surface Processes**

Salt Palace Conv. Center, Ballroom AC, 8:00 AM

Paul Bierman and Eric Steig, Presiding

- 8:00 AM Peucker-Ehrenbrink, Bernhard\*, Blum, Joel D., Ravizza, Greg: THE EFFECTS OF SURFICIAL PROCESSES ON THE MARINE OS AND SR ISOTOPE RECORDS [50864]
- 8:20 AM Kennedy, Martin J.\*, Chadwick, Oliver E., Vitousek, Peter A., Derry, Louis A.: THE EVOLUTION OF THE CALCIUM CYCLE WITHIN A SOIL DEVELOPMENTAL SEQUENCE IN HAWAII; TIMING THE SHIFT IN CA SOURCES FROM WEATHERING TO ATMOSPHERE AS DETERMINED BY SR ISOTOPES [51467]
- 8:40 AM Bard, Edouard\*: RELATIVE TIMING OF SEA LEVEL AND ATMOSPHERIC C14/C12 CHANGES DURING THE LAST DEGLACIATION [50425]
- 9:00 AM Bierman, Paul R.\*, Caffee, Marc: MEASURING MULTIPLE COSMOGENIC NUCLIDES: WHAT THEY TELL US ABOUT THE STABILITY AND COVER HISTORY OF BEDROCK SURFACES [3105]
- 9:20 AM Cockburn, Hermione A. P.\*, Seidl, Michele A., Summerfield, Michael A.: ASSESSING DENUDATION RATES ACROSS ANCIENT LANDSCAPES: BE-10 AND AL-26 DATA FROM CENTRAL NAMIBIA [50937]
- 9:40 AM Finkel, Robert C.\*, Ryerson, Frederick J., Caffee, Marc W., Van der Woerd, Jerome, Meriaux, Anne-Sophie, Tapponnier, Paul: DATING DEFORMATION: APPLICATION OF COSMOGENIC EXPOSURE DATING TO ACTIVE TECTONICS [50724]
- 10:00 AM Poreda, Robert J.\*, Solomon, D. K.: DIFFUSION OF HELIUM IN QUARTZ: APPLICATIONS TO QUATERNARY GEOLOGY AND HYDROLOGY [4209]
- 10:20 AM Cerling, Thure E.\*, Ehleringer, James R.: QUATERNARY C3 AND C4 ECOSYSTEM RESPONSE TO CHANGES IN ATMOSPHERIC CO2 [4647]
- 10:40 AM Lini, Andrea\*: ISOTOPIC RECORDS IN LAKE SEDIMENTS AS INDICATORS FOR LANDSCAPE AND BIOTIC RESPONSE TO HOLOCENE CLIMATE CHANGE [13380]
- 11:00 AM Sauer, Peter E.\*, Overpeck, Jonathan T., Miller, Gifford H.: THE CLIMATIC SIGNAL IN OXYGEN AND HYDROGEN STABLE ISOTOPE RATIOS IN LAKE WATER AND LACUSTRINE ORGANIC MATTER, EASTERN NORTH AMERICAN ARCTIC [51384]
- 11:20 AM Steig, Eric J.\*: DEUTERIUM EXCESS, MELT WATER AND THE ORIGIN OF ROCK GLACIERS [51511]

- 11:40 AM Fairchild, I. J.\*, Huang, Y., Tooth, A. F., McDermott, F., Heaton, T. J., Spiro, B., Borsato, A., Frisia, S., K., Keppens, E.: COMBINING ISOTOPIC AND TRACE ELEMENT DATA TO INTERPRET PALEOCLIMATES FROM SPELEOTHEMS [50911]

**SESSION NO. 64**

**S14. GIS Symposium: The Costs and Values of Geoscience Information**

Salt Palace Conv. Center, 257, 8:00 AM

Connie Manson and Louise Zipp, Presiding

- 8:00 AM INTRODUCTORY REMARKS
- 8:10 AM Laprade, William T.\*: USE OF GEOSCIENCE INFORMATION BY THE CONSULTING GEOSCIENTIST COMMUNITY [50801]
- 8:30 AM Duff, Beth\*: DISSEMINATING USGS DATA AND INFORMATION [3541]
- 8:50 AM Buchanan, Rex C.\*, Carr, Timothy R.: THE IMPACT OF ELECTRONIC DISSEMINATION: THE EXPERIENCE OF A STATE GEOLOGICAL SURVEY [50221]
- 9:10 AM Walsh, Timothy J.\*, Reed, Katherine M.: GEOLOGIC REPORT PRODUCTION IN THE 1990'S—EXAMPLE FROM THE WASHINGTON STATE GEOLOGICAL SURVEY [51415]
- 9:30 AM BREAK
- 9:50 AM Holoviak, Judy C.\*: ELECTRONIC SOCIETY JOURNALS: TIME-HONORED VALUES AT NEW COSTS [50706]
- 10:10 AM van der Hoek, Bas\*: COST AND VALUE OF GEOSCIENCE INFORMATION—A PUBLISHER'S PERSPECTIVE [3543]
- 10:30 AM Fitzpatrick, Gary L.\*: DIGITAL PROGRAM OF THE GEOGRAPHY & MAP DIVISION, LIBRARY OF CONGRESS [3534]
- 10:50 AM Derksen, Charlotte R. M.\*, Haner, Barbara E.: ACCESS AND COST OF GEOSCIENCE INFORMATION IN THE TECHNOLOGY ERA [50800]
- 11:10 AM Browne, D. G.\*, Love, J. D.: MORE THAN BOOKS AND JOURNALS: A PLEA FOR GREATER INCLUSIVENESS IN DEFINING 'GEOSCIENCE INFORMATION' [50735]
- 11:30 AM DISCUSSION

**SESSION NO. 65**

**T05. International Association of Geochemistry and Cosmochemistry: Trace Metals in the Environment: Sources, Transport, and Fate—A Tribute to Ernest E. Angino**

Salt Palace Conv. Center, 151 A-G, 8:00 AM

David T. Long and Gunter Faure, Presiding

- 8:00 AM INTRODUCTORY REMARKS
- 8:15 AM Lyons, W. Berry\*, Welch, K. A., Graham, E. Y., Prisco, J. C., Benson, L. V., Bullen, T. D., Green, W. J.: THE GEOCHEMISTRY AND CHEMICAL EVOLUTION OF LAKES BONNEY AND FRYXELL, ANTARCTICA: THE ANGINO LEGACY [4041]
- 8:30 AM Nezat, Carmen A.\*, Lyons, W. Berry, Graham, Elizabeth Y., Welch, Kathleen A., Lechler, Paul J., McKnight, Diane M.: CHEMICAL WEATHERING IN STREAMS FROM TAYLOR VALLEY, ANTARCTICA [51530]
- 8:45 AM Angino, Ernest E.\*, MacPherson, G. L.: LEACHABLE TRACE ELEMENTS IN NON-DAIRY COFFEE CREAMERS [51242]
- 9:00 AM Essenburg, Cheryl L., Faure, Gunter\*: SOURCES OF THE NATURAL STRONTIUM ANOMALY IN THE RIVERS OF OHIO [14913]

- 10:30 AM Willsey, S. P.\*, Yonkee, W. A., Sheik, H. A.: ANALYSIS OF FOOTBALL DEFORMATION, WILLARD THRUST SYSTEM, SEVIER OROGENIC BELT, UTAH [12322]
- 10:45 AM Needs, Tom J.\*, Lisenbee, Alvis L.: STRUCTURAL DEVELOPMENT OF THE NORTHERN EUREKA MINING DISTRICT [13738]
- 11:00 AM Lisenbee, Alvis L.\*: STRUCTURAL DEVELOPMENT OF THE EUREKA MINING DISTRICT, NEVADA [12122]
- 11:15 AM Kellogg, Karl S.\*: THE WILLIAMS RANGE THRUST NEAR DILLON, COLORADO—HANGING-WALL FRACTURING DURING LARAMIDE THRUSTING PREPARED BEDROCK FOR MAJOR NEOGENE AND PLEISTOCENE LANDSLIDING [5621]
- 11:30 AM Scott, Robert B.\*, Egger, Anne E.: STRUCTURAL CONTROL OF PLEISTOCENE LANDSLIDES ALONG THE GRAND HOGBACK OF WESTERN COLORADO [5097]
- 11:45 AM Dinklage, William S.\*: SIMULTANEOUS SHEAR ON TWO FOLIATIONS DURING CRUSTAL EXTENSION: EVIDENCE FOR FOLIATION REACTIVATION AND PORPHYROBLAST NON-ROTATION [51552]

**SESSION NO. 60****Volcanology**

Salt Palace Conv. Center, Ballroom D, 8:00 AM

Wendell Duffield and Berekat Haileab, Presiding

- 8:00 AM Kress, Victor C.\*: MAGMA MIXING AS A SOURCE FOR PINATUBO SULFUR [3917]
- 8:15 AM Carmichael, Ian S. E.\*, Lange, Rebecca A., Hall, Chris: THE DURATION OF THE LEUCITE HILLS VOLCANISM AND OBSERVATIONS ON THE ERUPTION RATE AND INTENSIVE VARIABLES OF THE MAGMAS [15094]
- 8:30 AM Shane, Philip A.\*, Black, T. M., Eggins, S., Westgate, J. A.: 10 MILLION YEARS OF RHYOLITIC ACTIVITY IN NEW ZEALAND [5327]
- 8:45 AM Siebe, Claus\*, Schaaaf, Peter, Urrutia-Fucugauchi, Jaime, Morett-Alatorre, Luis, Arrollo-Cabrales, Joaquín, Obenholzer, Johannes: MAMMOTH BONES EMBEDDED IN A LATE PLEISTOCENE LAHAR DEPOSIT FROM POPOCATEPETL VOLCANO, NEAR TOCUILA, VALLEY OF MEXICO [5487]
- 9:00 AM Harmon, Russell S.\*, Johnson, Kathleen: H-ISOTOPE SYSTEMATICS AT AUGUSTINE VOLCANO, ALASKA [5741]
- 9:15 AM Woldehaimanot, Beraki, Haileab, Berekat\*: NEW GEOCHEMICAL DATA FROM THE CENOZOIC VOLCANIC ROCKS OF ERITREA [16227]
- 9:30 AM Michaels, Gregory A.\*, Greeley, Ronald: ANALYSIS OF THE MARGINS OF LAVA AND DEBRIS FLOWS REVEALS CHARACTERISTICS OF FLOW EMBLACEMENT [50267]
- 9:45 AM Lighthart, Alyson\*, Nelson, Stephen A., Kozlowski, Gregory J.: SIERRA LAS NAVAJAS: A PLIOCENE PERALKALINE RHYOLITE VOLCANIC CENTER, HIDALGO, MEXICO [50281]
- 10:00 AM Harris, Andrew J. L.\*, Keszthelyi, Laszlo, Flynn, Luke P., Mouginiis-Mark, Peter J., Thornber, Carl, Kauahikaua, James, Sherrod, David, Trusdell, Frank, Flament, Pierre: NEAR-REAL-TIME MONITORING OF EFFUSIVE VOLCANIC ERUPTIONS FROM GEOSTATIONARY SATELLITES [50446]
- 10:15 AM Huysken, Kristin T.\*, Vogel, Thomas A., Layer, Paul W.: MAGMATIC ACTIVITY RECORDED IN THE TEPHRA SEQUENCE UNDERLYING THE AMMONIA TANKS ASH-FLOW SHEET, NEVADA, USA [51267]
- 10:30 AM MSA Presidential Address

**SESSION NO. 61****S11. Geophysics Division Symposium: Hotspots from the Top Down: What Are They?**

Salt Palace Conv. Center, Ballroom F, 8:00 AM

Eugene D. Humphreys and Robert B. Smith, Presiding

- 8:00 AM INTRODUCTORY REMARKS
- 8:20 AM Morgan, Jason P.\*: HOTSPOT EPEIROGENY REVISITED: EFFECTS OF PLUME-LITHOSPHERE INTERACTION ON VOLCANISM AND RELIEF [51609]
- 8:40 AM Gordon, Richard G.\*: PLATE RECONSTRUCTIONS, PALEOMAGNETIC POLES, AND HOTSPOTS [50367]
- 9:00 AM Wessel, Paul\*, Kroenke, Loren: ON THE COMPLIMENTARY NATURE OF HOT-SPOTTING AND BACK-TRACKING [51569]
- 9:20 AM Anderson, Don L.\*: THE MYTHOLOGY OF PLUMES [51335]
- 9:40 AM Smith, Robert B.\*, Meertens, Charles M., Lowry, Anthony R., Palmer, Randy, Ribe, Neil M.: THE YELLOWSTONE HOTSPOT: EVOLUTION AND ITS TOPOGRAPHIC, DEFORMATION AND EARTHQUAKE SIGNATURES [51055]
- 10:00 AM BREAK
- 10:20 AM Anders, Mark H.\*: THE YELLOWSTONE-SNAKE RIVER PLAIN MIGRATING DEFORMATION FIELD: CAUSES AND IMPLICATIONS FOR ASSESSING NORTH AMERICAN PLATE VELOCITY [4401]
- 10:40 AM Nash, William P., Perkins, Michael E.: HOTSPOTS AND THE CONTINENTAL LITHOSPHERE: THE SILICIC VOLCANIC RECORD OF THE YELLOWSTONE HOTSPOT [50058]
- 11:00 AM Humphreys, Gene\*, Dueker, Ken: YELLOWSTONE'S MANTLE PROCESSES [51363]
- 11:20 AM Leeman, William P.\*: MAGMATIC RECORD OF PLUME-LITHOSPHERE INTERACTION IN THE SNAKE RIVER PLAIN—YELLOWSTONE (SRPY) PROVINCE [15401]
- 11:40 AM White, R. S.\*, Smallwood, J. R., Staples, R. K., Richardson, K. R.: ANATOMY OF THE ICELAND PLUME: FROM EARLY TERTIARY CONTINENTAL BREAKUP TO THE PRESENT DAY [50560]

**SESSION NO. 62****S12. PS Symposium: Process from Pattern in the Fossil Record**

Salt Palace Conv. Center, 255 A-C, 8:00 AM

Jeremy B. C. Jackson, Scott Lidgard, and Frank K. McKinney, Presiding

- 8:00 AM INTRODUCTORY REMARKS
- 8:05 AM Lidgard, Scott\*, McKinney, Frank K., Hageman, Steven J.: SPECIES-RICH BRYOZOAN GARDENS OF THE POST-PALEOZOIC [50330]
- 8:25 AM Okamura, Beth\*, Jackson, Jeremy B. C., Harmelin, Jean-Georges: REFUGES REVISITED: ENEMIES VERSUS FLOW AND FEEDING AS DETERMINANTS OF SESSILE ANIMAL DISTRIBUTION AND FORM [50430]
- 8:45 AM Buss, Leo W.\*: GROWTH BY INTROSUSCEPTION IN A COLONIAL HYDROID [3108]
- 9:05 AM Knowlton, Nancy\*, Budd, Ann F.: RECOGNIZING CORAL SPECIES PRESENT AND PAST [50434]
- 9:25 AM Pandolfi, John M.\*, Jackson, Jeremy B. C., Geister, Jörn: THE REALLY RAPID NATURAL EXTINCTION OF TWO LATE PLEISTOCENE CARIBBEAN REEF CORALS [50451]
- 9:45 AM Foote, M.\*: AGE DISTRIBUTIONS OF LIVING AND EXTINCT TAXA [3117]

matters to the scientific community? To be effective electronic publications must carry forward the time-honored values of the scientific publication process. Among these is access by individual scientists to validated contributions to the body of knowledge--contributions that the reader can trust as the authentic version of the work. Scientific quality of publication will continue to be the highest priority. The methods of reaching these objectives may differ somewhat in the more fully electronic system. One thing is certain: sustaining the values will not be free, and some sector(s) of the overall communication cycle will have to pay. To date the great savings predicted for electronic publications have been elusive. Those who claim otherwise are not doing an accurate accounting job. Savings in paper and postage have been replaced by new costs for hardware, software, personnel training, and even higher salaries for more highly skilled staff. New features possible in electronic journals come at higher costs. For example, the interactive features of AGU's electronic journal Earth Interactions require added time in the production process, may ultimately require special licenses, and take more computer resources; however, the advantages for the authors and readers are enormous. So long as both print and electronic formats must be provided, there will be duplications in costs and effort. Yet are we ready to rely only on the electronic version? Perpetual care of the electronic files is a moral obligation for publishers--one whose costs are currently unknown. Experimentation is a given and experimentation costs money. What will all this mean for society journals and those who depend on them?

#### ACCESS AND COST OF GEOSCIENCE INFORMATION IN THE TECHNOLOGY ERA

DERKSEN, Charlotte R. M., Branner Earth Sciences Library, Stanford University, Stanford, CA 94305, cderksen@marine.stanford.edu; HANER, Barbara E., Geology/Geophysics Collection, Science & Engineering Library, University of California, Los Angeles, CA 90095

Libraries have traditionally been thought of as depositories of printed material, but today, access to earth science information may be via a stand alone workstation, a networked CD-ROM collection, Telnet sessions, Internet sites, or paper. This multiplicity of formats, while facilitating the earth scientist's ability to find and make use of data, articles and other text, does not come for no cost either to the user or to the library.

A survey was sent to academic, government agency and corporate libraries seeking specific information on how libraries provide access to information resources, spatially referenced digital data, GIS systems, with a view to detailing and summarizing the current costs of providing access to earth sciences information, in this rapidly changing environment. Since 1990, computers have increased in academic libraries by over 400 percent and in government agency libraries by 300 percent. In addition to providing ever more robust workstations, other costs include high speed network connections, hardware and software security systems, as well as printers and printer supplies. Hardware costs are not the only ones: staffing for purchasing and maintaining the equipment, negotiating contracts for access to indexing products and electronic journals, and training expenses also need to be included. The technological environment has also added the challenges of continuously changing e-mail systems, word processing packets and library online catalog formats. These changes are often introduced with minimal training and little documentation. The cost in corporate and government libraries has been between 15-20,000 dollars and a little less in academic settings.

Today's users may have greater access to information but providing speed and cutting edge technology continues to be a burden on library budget and support staff.

#### DIGITAL PROGRAM OF THE GEOGRAPHY & MAP DIVISION, LIBRARY OF CONGRESS

FITZPATRICK, Gary L., Geography and Map Division, Library of Congress, Washington, DC 20540-4650; gfit@loc.gov  
The Geography and Map Division is the world's largest map collection with 4.6 million maps, 60,000 atlases, and numerous other cartographic materials. In the early 1990s, the Division faced a difficult situation: How could it collect, catalog, preserve, and provide reference access to digital forms of cartography and geography? Software and data were often proprietary, and equipment was expensive. As an official depository for both government and privately published data, the Library could not arbitrarily adopt a single system to the exclusion of others.

In 1995, the Division established the Center for Geographic Information, a corporate support group whose members are committed to assisting the Library of Congress in its transition to the digital era of cartography and geography. Members have donated funding, hardware, software, data, and have shared their expertise. There are approximately 12 full members. Major donations to date include: a large-format, color flatbed scanning system; a major suite of servers, workstations, and peripherals; an effective software system for file compression and WWW map delivery; and a wide array of GIS software and data. A GIS applications specialist will be funded with member contributions.

An important benefit of the Center has been the development of a cartographic component of the National Digital Library Program. The Division has embarked on a program to scan at least 50,000 historic maps from its collections. The first such maps, 19th century panoramic maps of American towns and cities, is now available on the Library of Congress' homepage.

#### MORE THAN BOOKS AND JOURNALS: A PLEA FOR GREATER INCLUSIVENESS IN DEFINING 'GEOSCIENCE INFORMATION'

BROWNE, D. G.; LOVE, J. D., U.S. Geological Survey, P.O. Box 3007, University Station, Laramie, WY 82071

Although the advent of the digital computer has allowed significant advances in the management and dissemination of geoscience information, there remain two areas of information that have not received appropriate attention from the geoscience information

community. Manuscript collections often contain unpublished or draft papers, significant unpublished technical information such as geochemical analyses or stratigraphic sections, and supporting documentation such as annotated aerial photographs, wire-line logs, and geophysical data. Although the papers of many significant figures in the history of geology and the geosciences have been retained, access is hampered by the lack of any coherent nationwide data base on holdings; locating a manuscript collection is often more a matter of luck than science.

The geosciences place heavy emphasis on the analysis of three-dimensional artifacts, such as hand specimens, thin sections, and fossils, yet these collections are poorly maintained in many cases, often falling outside the collection development statements of many libraries and institutional collections. These specimens are often separated from the manuscript collections they rightfully belong to, with the result that researchers may be aware of one portion of a collection and unaware of others. One of us (JDL) is presently attempting to overcome these problems in the deposit of his personal papers and specimens in an appropriate repository. Unfortunately, while some institutions are interested in the manuscript collection, they are not interested in the specimens; other institutions are interested in both parts of the collection, but lack the long-term endowment that curation of the collection demands. The ideal repository should probably be one modeled on herbaria and other biological science collections, perhaps in a regional natural history museum.

We will illustrate these collection management problems with an analysis of our recent work in attempting to reconstruct and publish Part I of Arnold Hague's U. S. Geological Survey Monograph XXXII on Yellowstone National Park - a nearly complete manuscript that was apparently shelved and largely forgotten after Hague's death in 1917. The manuscript was located in the National Archives, the hand specimens (but inexplicably not the thin sections) in the Smithsonian Institution, and a newly-discovered Part III of the monograph, with supporting botanical specimens, in the University Herbarium at the University of California, Berkeley.

#### GEOSCIENCE INFORMATION SOCIETY

Technical Session: SPCC 258

Monday, October 20, 3:30-5:30 pm

*Presiding:* Joanne Lerud and Lisa Recupero

#### THE ROLE OF GEOLOGICAL SURVEYS IN THE INFORMATION AGE

SCHUENLAUB, Hans P., Geological Survey of Austria, P.O. Box 127, A-103 Vienna, [hpschoenlaub@cc.geolba.ac.at](mailto:hpschoenlaub@cc.geolba.ac.at)

The governmental mandate of geological surveys to capture geoscientific information through mapping, monitoring and RTD has extensively been applied since their early days of foundation as a basis for decisions relevant for the environment and economic resources. In many industrialized countries due to global economic and environmental pressure, however, the involvement into traditional tasks of geological surveys such as the construction of railways, roads, tunnels and canals, exploration of hydrocarbon reservoirs, mining and the exploitation of various mineral resources has diminished in recent years. In addition, many surveys have seriously been affected by financial and personal cuts. The majority of geological surveys has successfully adopted these new challenges and has re-evaluated their working programmes. Their new strategic concepts primarily address society's fundamental needs and define customer demands of high priority with focus on issues like thematic mapping, recognition of natural hazards, supply of water, exploitation of raw material, urban geology, land-use planning, waste disposal, soil contamination and related applied research activities. Following this relaunch of geological surveys Earth science-related data will be made accessible by implementation of sophisticated IT. In fact, national surveys are gradually becoming a 'virtual geodata-warehouse' built within a 'geocyberspace' in which all available object-oriented information is managed through digital relational databases. Those data which are of actual interest for a customer will be provided at ones finger grips just- in-time and online. Flexible data modeling will permit further applications and cross-references with data from other sources.

#### TOWARD A NATIONAL LIBRARY OF GEOSCIENCES

HOLSER, William T., Department of Geological Sciences, University of Oregon, Eugene, OR 97403, [wholser@oregon.uoregon.edu](mailto:wholser@oregon.uoregon.edu)

With an active inventory of 756,000 volumes and 3000 serial subscriptions based in a national network of branches, the Library of the US Geological Survey is a world class national treasure. It is time to recognize this preeminence by removing its administration from the narrow purview of the Geologic Division of the Survey, and place it under the advisory guidance of a distinguished Board of Regents similar to the one governing the National Library of Medicine. The widened responsibilities and opportunities of the projected National Library of Geosciences are compared with those of our other national libraries: the National Library of Medicine, the National Agricultural Library and the National Library of Education. The advantages and disadvantages of funding these libraries by a line item in the Secretaries' budgets are considered.

#### THE NATIONAL GEOLOGICAL MAPPING PROGRAM OF MOROCCO

BENSAID, Mohammed, Director Geological Survey, Ministry Energy and Mines, P.O. Box 6208, Rabat, Institut

Geological and thematic mapping is necessary for the development of a country, particularly for: mining and hydrocarbon exploration, ground water evaluation, and land use planning survey. The country is insufficiently covered by this needed basic information. Therefore, the geological survey has launched an important National Geological Mapping Program with four main components: Establishment of 480

geological maps to a scale of 1/50,000 and 1/100,000, ground and airborne geophysics (low altitude), 100 geochemical maps on areas of mining interest, thematic maps for land use planning and finally creation of a geoscientific database. The execution of this program will last 20 years for an estimated cost of 200 million dollars US. More than 65% of the program will be realized by contractors, the rest by own staff of the survey. This later has to establish standards for the elaboration of geological maps and geophysical survey. It is also needed a training plan for the own staff of the survey to enable our geologists to work according the forestablished standards for contractors. Two important actions as accompanied measures for the National Program: creation of six regional centers through the country with own management and changement of status of the actual geological survey to permit it to have budget autonomy from the tutel Ministry.

#### GEOLOGIC MAP DATABASE OF THE NEVADA TEST SITE AREA, NEVADA

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Data from forty years of geologic mapping and topical investigations in the Nevada Test Site Area (NTS) by the U.S. Geological Survey (USGS) have been compiled into a geospatial database for Department of Energy programs. Most of the recent mapping was done to study the hydrogeology of the NTS area. Map data were collected from paper maps, publication materials, digital geologic map production files, and directly from aerial photography. These data, recorded at various maps scales, have been combined to produce an integrated database at a scale of 1:100,000. The structure of the NTS database follows a proposed digital geologic map data model content standard outlined in a preliminary report of a working group formed jointly by the USGS and the Association of American State Geologists Digital Mapping Committee. If this model is used, it is possible to construct generalizations of hierarchical attributes for polygon, line and point entities. Because the proposed data model is extensible, tables of attributes specific to the study of the hydrogeology of the area are present. In addition, one can produce a paper geologic map easily that looks like a standard USGS geologic map publication that will reflect changes made to the database.

Using a standard structure for the NTS database allows the sharing of geologic data in a format that permits selection of entities based on a known attribute content. Categories in the database include names and mnemonics for member, formation, and group; overall unit descriptions; rock types; age, minimum, maximum, and predominant; hydrogeologic classification, and average unit thickness. The building of abstractions from this database as it is structured and the combinations that then can be made with the petrographic and geochemical database of the Southwest Nevada Volcanic Field, the aeromagnetic and gravity databases, or other geospatial databases for this area will provide a unique and powerful mechanism for the further examination of the hydrogeology of this area.

#### EVALUATING THE NEED FOR A NATIONWIDE HARD ROCK MINING DATABASE

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Despite the social, economic, and environmental importance of hard rock mining, our knowledge of the location, size, and commodity(ies) of active and inactive/abandoned mines in the United States is poor. As a result, there is a strong need to develop a nationwide hard rock mining database. This database would facilitate large-scale (i.e. regional landscape) analyses of adverse effects on surface water, fisheries, and terrestrial organisms; and would aid in socio-economic, regulatory impact, and policy studies. Both public and private efforts in the past have produced databases (U.S. Bureau of Mines/U.S. Geological Survey's MAS/MILS database), but the information contained within the existing databases appears to be inadequate for addressing these large-scale issues. Appropriate parameters for the national hard rock mining database might include the location and type of mine, the commodity mined, production status, quantity of ore produced, as well as environmental data (leach test results, AMD/ARD potential, precipitation, soil type, etc.). This database would allow accurate and comprehensive GIS maps to be produced which show the distribution of mines over public and private lands and detail the proximity of mines to population centers, national parks, endangered species habitats, drinking water sources, etc. In addition, this data could be coupled with topographical and geological information to produce GIS models capable of predicting potential environmental hazards associated with hard rock mining. In addition to presenting an evaluation of the rational for, and content of such a database, we demonstrate potential analytical uses and limitations of existing information using existing data and GIS tools.

#### ADDRESSING READER MISCONCEPTIONS WHEN EXPLAINING GEOLOGIC PROCESSES TO LAY AUDIENCES

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Explaining geologic processes to the lay public in a way that encourages comprehension requires special strategies and skills. Many geologic phenomena involve processes which are counterintuitive. Addressing misconceptions and replacing them with more plausible scientific theories may be one way that science communicators can help lay audiences understand geologic processes, particularly ones that are counterintuitive. Transformative explanations are designed to help lay readers understand a counterintuitive notion; therefore, they can be particularly useful in correcting misconceptions that lay audiences hold about geologic processes.

The purpose of this study was to examine the effects of different levels of explanation on readers' ability to understand two geologic

processes: (1) ground water and (2) flood recurrence intervals. The study focuses specifically on the usefulness of transformative explanations in correcting misconceptions held by lay readers. The study also examines the effect of subjects' level of interest and expertise in earth science on their ability to comprehend the processes.

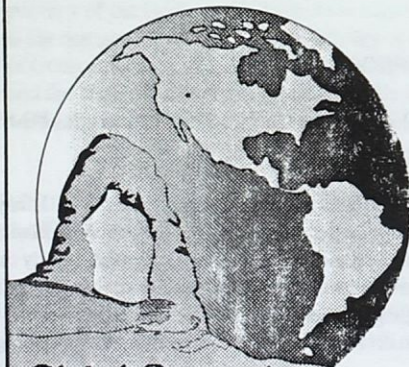
Subjects were undergraduate and graduate students enrolled in classes at Colorado State University. The stimuli consisted of two versions each of two geologic processes. Subjects were randomly assigned to one of three experimental conditions for each process: (1) no explanation, (2) non-transformative explanation, and (3) transformative explanation. After reading the explanation, they answered questions designed to measure their level of interest and expertise in earth science. Next, they completed a 12-questions multiple choice test related to the explanation they read. Because the processes being explained are ones about which many lay readers hold misconceptions, it was hypothesized that the transformative explanations would promote greater understanding of the process by acknowledging and replacing the erroneous theory held by the subjects. All data has been collected and analysis is currently in progress. Results will be finalized prior to the oral presentation.

SECURE WEBSITES FACILITATE GEOSCIENTIFIC COLLABORATION, PROGRESS AND TECHNOLOGY TRANSFER  
BURNS, Sara L., Geolectica, P.O. Box 758, Perkins, OK 74059; sara@geolectica.com

Geoscientific research projects involving collaboration across organizational boundaries are greatly facilitated through the use of internet technologies. By taking advantage of the secure website environment, geoscientists communicate and share a variety of information resources more effectively and conveniently. This results in closer collaboration, faster timelines, lower costs and more effective technology transfer to the private sector. One example of a project that has benefited from the wise use of internet technologies is an on-going natural fracture study. This research is supported by a global consortium of energy companies and related research institutions. The research is done by several geoscientists at various research organizations in the United States and abroad. A variety of new scientific tools and techniques are employed in the study. Many different types and sizes of data files, images and text files are produced and are published in final printed reports. Traditionally, the consortium members meet once or twice a year to review slide presentations of the project's progress and discuss future directions for the study. Limited resources, conflicting travel schedules and outside time constraints often mean that not all stakeholders are able to receive the full benefits of participation. With the implementation of the natural fracture study's private website and its associated network resources, all research study participants have daily access at their desktops to current study data, archived files and publications, and online forums in which members can discuss project-related issues at their convenience. Since some of the tools used in the study are new in their application to natural fracture characterization, an online user group section gives technical assistance to researchers. This speeds work and reduces machine downtime. The website is secured so that access to the site is restricted to study participants only by prior approval. Effective use of internet technologies has resulted in greater collaboration, closer relationships among project participants, faster progress and reduced costs. This type of research support vehicle will become the standard for geoscientific communications in the near future.

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**GIS FIELD TRIP  
HIKE TO TIMPANOGOS CAVE AND GEOLOGIC TOUR COVERING LOCAL GEOLOGY AND  
ANCIENT LAKE BONNEVILLE**

We will take a moderate hike to and tour of Timpanogos Cave which is located in the Uinta National Forest, up American Fork Canyon, not far from Robert Redford's Sundance Resort. The trail is 1.5 miles, paved, moderate difficulty, and can take between 45 to 75 minutes. Hike at your own pace. Tours are ongoing by National Park Rangers.

[NOTE: In case of snow or other adverse weather conditions, we will visit the Bingham Copper Mine instead of the cave].

Then its off for FOSSIL COLLECTING and a field lecture with an experienced geologist/tour guide up Spanish Fork Canyon. Our guide will talk to us about the local geology and Ancient Lake Bonneville.

Bus will leave from Salt Lake City at 8:00am and return between 3:00 & 4:00 pm, depending on the needs of our group.

**Cost:** \$26.00 per person which includes lunch, transportation, tips, and entrance fees.

Wear good walking/hiking shoes. You may want to bring a rock hammer for fossil collecting. Be prepared for unpredictable weather (Poncho)! Sweat shirt, flashlight (though cave is lit) & small amount of water advised for cave.

Please send registration information and payment to:

**Richard Soares**

**BYU**

**1402 HBLL**

**Provo, Utah 84602**

**801-378-6179 (day) 801-489-7933 (after hours) 801-378-3221 (FAX)**

or e-mail him at: rich\_soares@byu.edu

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**Announcement**

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**The Bernard L. Majewski Research Fellowship**

The American Heritage Center announces the second annual offering of the Bernard L. Majewski Fellowship and invites applications from interested scholars. The Fellowship is named in honor of the late petroleum industry pioneer, Bernard L. Majewski, and provides a stipend of \$2,500 in support of research conducted in the archival collections at the American Heritage Center on the campus of UW. Acceptable areas of research include history, oral history and historical archaeology pertaining to economic and petroleum geology, or, environment and natural resources, business or economic history pertaining to economic and petroleum geology. The deadline for applications for the 1998 Fellowship is December 15, 1997 and research should be conducted by the Fellow within one year of appointment. For application information or a comprehensive listing of available research collections, contact:

Manager  
International Archive of Economic Geology  
American Heritage Center  
P.O. Box 3924  
University of Wyoming  
Laramie, WY 82071

Phone: *voice* (307) 766-6506 or, *fax* (307) 766-5511  
E-mail: [mgrafel@uwoyo.edu](mailto:mgrafel@uwoyo.edu)

For updated information on this subject, check our web page:  
<http://www.uwoyo.edu/ahc/iaeg/majewann.htm>

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