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The Lattice

The Newsletter of the Mineralogical Society of America

Subscription and membership information is on page three.

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Institutional subscribers are entitled to electronic access to American Mineralogist; contact business@minsocam.org to give us your IP address.

Members nominate outstanding students in mineralogy for society's undergraduate award

MSA members have taken advantage of the Society's American Mineralogist Undergraduate (AMU) Award program to recognize outstanding students who have shown an interest and ability in the discipline of mineralogy. Each student was cited by his or her department for outstanding achievement in mineralogy-related courses. The AMU Awards allow MSA to join with the individual faculty to formally recognize outstanding students. Each student is presented a certificate at an awards ceremony at his or her university or college. In addition, each recipient receives a *Reviews in Mineralogy* or *Monograph* volume chosen by the sponsor, student, or both. Past AMU awardees are listed on the MSA website.

Deadlines for nominating students are January 1 and July 1 of each year. Mark these dates on your calendars and let us know about your exceptional student. If you are interested in presenting the award at a particular ceremony, please remember that time is required to produce certificates and have letters signed. To nominate a student, send a letter on departmental letterhead to Dr. J. Alexander Speer, MSA Business Office, 1015 Eighteenth St. NW Ste 601, Washington, DC 20036-5274. With the nomination, please include the student's full name that would be suitable for the certificate, a mailing address for the student that will be current at the time the award is made, year in school, the MSA sponsor's name, **the choice of *Reviews in Mineralogy* or *Monograph***, and the date and brief description of the award ceremony at which the certificate will be presented. The letter must be signed or co-signed by the department chair.

The Society welcomes the following exceptional students to the program's honor roll and wishes to thank the sponsors for enabling MSA to recognize these outstanding individuals.

LINDSEY M. ABLE
Smith College
Sponsored by Dr. John B. Brady

MÉLANIE BOURQUE
Université de Montréal
Sponsored by Dr. Walter E. Trzcienski

MARC COOPER
Louisiana State University
Sponsored by Dr. Barbara L. Dutrow

DANIEL RUSSELL LASCO
University of Missouri-Rolla
Sponsored by Dr. John P. Hogan

FRANCES MITCHELL
Acadia University
Sponsored by Dr. Sandra M. Barr

KARA A. PAJEWSKI
Georgia State University
Sponsored by Dr. Timothy E. La Tour

NEIL PERK
University of Victoria
Sponsored by Dr. Dante Canil

Adding Cyberinfrastructure to the toolbox of science

By J. Alexander Speer, MSA Executive Director

Doing science, whether as a student or researcher, requires an infrastructure. In the past we would think of places like classrooms, labs and libraries; equipment like hammers, hand lenses, microscopes, TEMS, synchrotrons; tools and techniques like wet chemistry, X-ray diffraction, thermodynamics, software; reference materials such as journals, books, and maps; communication venues such as journals and meetings; and organizational management or funding support. With the advances in technology of computing, visualization, storage, and communication, we can add cyberinfrastructure (CI) to the list. Research is being affected by the new capabilities of digital age technology as well as the increasing complexity, scope, and scale of today's challenges. We often must work with more data than can be thought about. But

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Letter from the President

MSA Presidential Letter...Last Letter

by Doug Rumble MSA President 2002-2003

The MSA enjoys a broadly international membership. Members who live around the world have always benefited from the Society's publishing ventures, either as authors or as readers, but they may not have had access to MSA meetings and Short Courses. Efforts are now being made to serve our international members directly by offering more convenient opportunities for personal participation in the Society's programs. The Mineral Transformation Short Course followed by the U-Series and Zircon Short Courses were held in Europe. MSA is co-sponsoring the Goldschmidt Conference in Kurashiki, Japan, September 7-12, 2003, and another Goldschmidt Conference in Copenhagen, Denmark, May, 2004. Michael Carpenter, MSA's rising President, is the first to be elected from outside of North America. He will bring a valuable perspective to MSA governance from the eastern shore of the Atlantic. In a joint venture with the Mineralogical Society, an upcoming issue of American Mineralogist will focus on Environmental Mineralogy. The purpose of these activities is to serve all of our members more effectively no matter where they live.

One of the giants in service to MSA, Paul Ribbe, is retiring as Series Editor of the RIMG volumes. As a former President, Councilor, and committee member, Paul made many contributions to the Society. For his seminal work in inaugurating the Short Courses and then nurturing their growth into the RIMG volumes, not only MSA but also the entire scientific community will forever be in his debt. Paul has been honored by MSA as a Distinguished Public Service Medalist but our appreciation to him deserves repetition: Thanks, Paul, from all of us!

My first memory of Paul is from his lectures at the Feldspar Short Course in Salt Lake City in 1975 (volume 2). He began his talk with a picture of a hybrid human figure with the recognizable face of a well-known feldspar-ologist attached to the neck of a hairy, naked back-to-camera male body. Paul's puckish sense of humor has served him well over the years and entertained his friends and colleagues. When volume 3 (Oxide Minerals) was delivered piece-meal and very late, Paul accepted it with good grace and arranged for the

printing of incomplete copies for use at the Short Course.

Dr. Jodi J. Rosso will serve as the new RIMG Series Editor. Jodi has been working with Paul to effect a smooth transition. An example of her talented work may be found in the recently published Volume 53, Uranium Series Geochemistry.

Let me conclude this final letter as MSA President by thanking Alex Speer, who makes the society run, for his patience and for his unstinting dedication to the Society. Thanks are due to Executive Committee members Rod Ewing, Michael Carpenter, Jim Blencoe, and Dave Jenkins, for their support and encouragement. I am grateful to MSA councilors Barb Dutrow, Peter Heaney, Becky Lange, Craig Manning, Kathy Nagy, and Nancy Ross for asking good questions. And, finally to all those who have voluntarily served MSA, as committee members, as reviewers, and in myriad other ways, Thank You!

GSA Seattle: The place to be this Fall

A number of sessions honoring W. Gary Ernst, Charles Prewitt, and Donald Lindsley will be held at the Geological Society of America National Meeting in Seattle, Washington, November 2–5, 2003. There promises to be a mineralogy or petrology session nearly every morning and afternoon of the meeting. Currently, there are a total of seven oral sessions planned in honor of these three greats of mineralogy/petrology, with a large combined poster session also. "Modeling Metamorphism: Petrology, Geochemistry, and Tectonics," organized by Michael Brown and Barb Dutrow, is featured as a Pardee Symposium. Response to this symposium was so great that two other oral sessions are planned for the meeting. Presentation of the Dana Medal will be made to Mark Ghiorso at the meeting.

National and international meetings are also a time to socialize with friends old and new, and this meeting will be no exception. A combined reception for Donald Lindsley, Charles Prewitt, and Gary Ernst will be held on Sunday night, November 2 and will be a ticketed event (see the GSA meeting website (http://www.geosociety.org/2003/) for details). The MSA luncheon will be held Tuesday November 4 from 12–2 p.m., followed by Doug Rumble's Presidential Address at 4 p.m. In addition the MSA/GS cocktail party will be held Tuesday evening at 5–7 p.m. The 2003 GSA National Meeting appears to be a great one for mineralogy and petrology.

The Lattice is published quarterly (February, May, August, November) by the Mineralogical Society of America. It is distributed to MSA members and subscribers as a service. Articles and letters are welcome.

The Mineralogical Society of America is composed of individuals interested in mineralogy, crystallography, and petrology. Founded in 1919, the Society promotes, through education and research, the understanding and application of mineralogy by industry, universities, government and the public.

Membership benefits include*: American Mineralogist*, published bi-monthly; 25% discount on volumes in the *Reviews in Mineralogy and Geochemistry* series*; The Lattice*; special subscription rates for *Mineralogical Abstracts, Physics and Chemistry of Minerals*, *Journal of Petrology*, *Rocks and Minerals,* and *Mineralogical Record*; reduced registration fees at MSA short courses; member rates for the MSA/Geological Society of America annual meeting and member rates at MSA's spring meeting with the American Geophysical Union; participation in a Society that supports the many facets of mineralogy.

Dues for 2003: professional members $50; student members $5. American Mineralogist subscription: members add $35 (paper and electronic); $10 electronic. Membership is on a calendar year basis. Individuals who join after January 1, 2003 will be sent all back issues of volume 88 for 2003.

Additional membership information and an application, and/or a price list of the Society's publications are elsewhere in this newsletter, or contact the Business Office.

Institutions may subscribe to the 2003 volume of *American Mineralogist* for the annual rate of $580 in the US and $600 for non-US addresses. The subscription price includes any new volumes of the *Reviews in Mineralogy and Geochemistry* series and issues of the *Lattice* published during the calendar year of the subscription. Payment must be received in full before a subscription will be started.

Mineralogical Society of America
1015 Eighteenth Street N.W., Suite 601
Washington, D.C. 20036-5212, U.S.A.
Tel: (202) 775-4344; Fax: (202) 775-0018
E-mail: business@minsocam.org

Notes from Washington

by J. Alexander Speer, MSA Executive Director

• At its 2003 Spring Meeting, MSA Council voted to increase 2004 professional member dues to $55. Student dues remain at $5 to encourage members to sign up student members. Member subscriptions to the paper copy of *American Mineralogist* increases to $40, the electronic version remains at $10. Institutional subscriptions to the paper journal were increased to $625 for subscribers with U.S. addresses and $650 for subscribers with non-U.S. addresses. Included in institutional subscription is access to the electronic journal.

• MSA 2004 membership renewals will start in September with mailing of hardcopy renewals to all members, followed by an electronic notice for online membership renewal soon afterwards. This is a slight retreat from the previous few years of sending out an electronic notice for online renewal in the hopes of avoiding a large hard copy mailing. We have found that the number of members willing to renew online remains at about one-third, and the processing of these online renewals before preparing and sending the hard copy notices makes for tight timing. Complicating matters is that this all occurs at the same time the office is preparing for the Fall meeting. The timing may also contribute to the large number of renewals received in a very short time span around December 31 that the office has difficulty processing in a timely manner. If you have never shared your current e-mail address with MSA and would like to participate in the online renewal, please send us your address. As always, you can save your Society money by renewing early whether you chose to use the electronic or the traditional paper versions. As encouragement there will again be a $5 discount on the professional membership dues for renewals received before December 31, 2003.

• Volume V of the *Handbook of Mineralogy* on borates, carbonates, and sulfates was published in May. It is the longest single volume at 813 pages. Volumes I and II of the *Handbook of Mineralogy* have been reprinted. If you are interested in these books, or any other volumes in the series, they can be ordered online or with the order form that appears elsewhere in this issue. MSA members get a 25% discount.

• The ad from the Geological Society London (GSL) in this issue is offering *Rock-Forming Minerals Volumes 2A* (second edition) Single-Chain Silicates and *2B*(second edition) Double-Chain Silicates by W. A. Deer, R. A. Howie, and J. Zussman to MSA members at reduced prices. MSA members can save over 50%, but the offer is available for a limited time. If you are interested consider taking advantage of the offer now.

• 2003 is the first year that an institutional or library *American Mineralogist* subscription includes access to the online version. About 300 libraries out of MSA's 850 institutional subscribers have registered for online access thus far. If your institution subscribes to the journal, and would like electronic access, it is simple to make the request. A library needs to tell us who they are and their IP or range of IP addresses. The information should be sent to business@ minsocam.org.

• The MSA Awards Luncheon, MSA Presidential Address, Annual Business Meeting, and joint MSA-Geochemical Society Reception at the Annual Meeting with Geological Society of America (GSA) in Seattle, WA will all be on Tuesday, November 4, 2003. Different this year is another reception honoring the retirement of Drs. Ernst, Lindsley, and Prewitt on Sunday evening, November 2, 2003. The Luncheon and Receptions are ticketed functions. Tickets are sold by GSA and can be bought either when you register for the meeting or up to 24 hours before the event in the meeting registration area. MSA will have a booth in the Exhibit Hall. Further information, as well as meeting and housing registration forms are at <http://www.geosociety.org/>.

Treasurer's report: August, 2003

By Jim Blencoe, MSA Treasurer

Some serious financial challenges notwithstanding, 2002 was another good year for the MSA. Herewith, a brief summary of notable MSA budgetary events and developments during 2002.

• Good news! Sales of RiMG volumes are up significantly (~$174.2K in 2002 vs. ~$124.2K in 2001), due partly to the large number of new titles that were printed in 2002.

• The Society has more members (2,157 in 2002 vs. 2,137 in 2001); consequently, income from membership dues, and subscriptions to the *American Mineralogist*, is up. On the down side, there were 13 fewer institutional subscribers this year.

• Monograph sales and expenses fell again this year, and they are likely to continue to fall in the future, because no new monographs are planned.

• Costs for Business Office supplies and services are much less than budgeted, in part because no new computer equipment was purchased.

• Total website expenses were up this year, primarily as a result of shifting to new computers and a new operating

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the digital age offers the opportunity to look at entire systems at once. In the past it was possible to have significant breakthroughs within a discipline. But those are being replaced by breakthroughs that overlap several disciplines. Areas of interest to MSA members are also affected.

In April 2003 the National Science Board (NSB) unanimously accepted from its Task Force on Science and Engineering Infrastructure a report titled *"Science and Engineering Infrastructure for the 21st Century"* (NSB-02-190). The report was written to help inform the national dialogue on the science and engineering infrastructure. The report highlights the role of the National Science Foundation (NSF), larger resources that will be needed, and possible management strategies for U.S. federal policymakers. The NSB made 5 recommendations.

(1) Increase the share of the NSF budget devoted to infrastructure to the higher end of its historic range (22–27%) with the significant additional resources coming from future growth of the NSF budget.

(2) Emphasize research on instrumental technology and building the next-generation of observational, communication, visualization, data analysis, interpretational, data archiving, and computational tools. This should include midsize (US$1–10 millions) as well as small and large infrastructure needs.

(3) Expand education, training, and outreach at new and existing research infrastructure facilities.

(4) Strengthen the planning and budget process by assessing academic disciplinary and cross-disciplinary research infrastructure needs, developing criteria and indicators to establish priorities, and implementing budgets for the infrastructure projects throughout their life-cycles.

(5) Formulate (governmental) interagency plans to establish priorities for use in competitive merit reviews to select projects, to stimulate development and deployment of new infrastructure technologies, to develop next-generation high-end, high-performance computing and networking infrastructure, to facilitate international partnerships, and to protect the nation's infrastructure against accidental or malicious attacks and misuse.

About the same time the NSF Advisory Panel on Cyberinfrastructure reported on "*Revolutionizing Science and Engineering through Cyberinfrastructure*". The panel also recognized that computational, archiving, visualization, and networking technology have now reached a critical point. It is possible that a comprehensive cyberinfrastructure could build new types of knowledge environments and organizations with which to pursue research in new ways with greater efficacy. The panel concluded that these are required to address the newer national and global priorities (climate change, protection of nature, health, national security, nanotechnology, predicting and protecting against disasters), as well as our fundamental intellectual questions such as the formation of the universe or character of matter. The panel recommended that NSF establish and lead a large-scale interagency and

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25th FM-TGMS-MSA Mineralogical Symposium: Gold

in conjunction with the Tucson Gem and Mineral Show

Saturday February 14, 2004

The twenty-fifth annual Mineralogical Symposium will be held on February 14, 2004 at the Tucson Gem and Mineral Show. The Friends of Mineralogy (FM), the Tucson Gem and Mineral Society (TGMS), and the Mineralogical Society of America (MSA) cosponsor it. The topic of the symposium is Gold, the Tucson Show's theme for 2004. Papers on descriptive mineralogy, paragenesis, classic and new locations, and related subjects about gold are welcome. An audience of amateur and professional mineralogists and geologists is expected.

Anyone wanting to present a paper should submit a 200 to 300 word abstract to: Dr. Robert B. Cook, Auburn University, Department of Geology and Geography, Auburn University, AL 36849-5305: phone (334) 844-4891; fax: (334) 844-4486, e-mail: cookrob@ auburn.edu.

Presentations will twenty minutes, followed by a period for questions. Abstracts must be submitted by September 21, 2003.

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internationally coordinated Advanced Cyberinfrastructure Program (ACP) to enhance all scientific and engineering research and allied education. What is startling in the report is the estimate of sustained new NSF funding of $1 billion per year. It is thought this amount is required to achieve critical mass and leverage co-coordinated co-investments from other federal agencies, universities, industry and international sources.

We can conclude from the reports that NSB and NSF believe building a cyberinfrastructure is necessary and must be a large, long-term concerted effort. It will be tremendously complex, but the opportunity is enormous. It is a once in a generation opportunity. There are significant risks and costs in not acting quickly. Otherwise a number of splintered and incomplete efforts with no interoperability could arise. The cost of converting for interoperability and the disincentives to change once they are established would be enormous.

CYBERINFRASTRUCTURE FOR THE SOLID EARTH SCIENCES

There have been CI workshops on topics of interest to MSA members. At the 2002 Geological Society of America (GSA) meeting in Denver there was one on "Setting Priorities in Solid Earth Science," a follow-up Town Meeting at Fall 2003 AGU, and a NSF-sponsored workshop at the University of Kansas on March, 2003. Termed *Cyberinfrastructure for the Integrated Solid Earth Sciences* (ISES-CI), the goals of the workshops were to create a common voice for areas of geology that focus on the solid earth. This includes geochemistry, geochronology, paleontology, petrology, sedimentology, stratigraphy, structural geology, tectonics and volcanology. The workshop concluded that there is a pressing need to develop databases and analysis and synthesis tools, and to ensure interoperability of ISES data sets and tools in keeping with other efforts. There are many ongoing collaborative efforts that need to be fostered, there are natural collaborations that need to be cultured, and others that have yet to be organized but are identified. ISES-CI along with GeoScience Network (GEON), Cyberinfrastructure for Chronostratigraphic Databases (CHRONOS) and the EarthScope data management programs, will provide the mechanism to facilitate interdisciplinary-integrated science, that will lead to more developed understanding of the Earth as a complete and interacting system involving its solid earth, oceans, and atmospheric shells. The process of evaluating needs, developing consensus, and building community support was started during the ISES-CI workshops by selecting key scientists to serve on a steering committee and others as leaders for each discipline. The website is http://tectonics.geo.ku.edu/ises-ci/. The steering committee is chaired by J. Douglas Walker (University of Kansas) and Richard Carlson (DTM Carnegie Institute of Washington) and includes C.J. Northrup (Boise State University), Michael Brown (University of Maryland), G. Randy Keller (UTEP), John Oldow (University of Idaho), and Jeff Freymuller (University of Alaska). The workshop identified ten priority areas that are critical to the future progress of the ISES and their integration into the broader spectrum of Geosciences and other related areas of science. Working groups were established for each:

(1) *Geochemistry of Igneous and Sedimentary Rocks*

Kerstin Lehnert (Chair, LDGO-PetDB), Al Hofmann (Max Planck Institut fur Chemie, Mainz-GEOROC), Richard Carlson (DTM-NAVDAT)

This working group includes members of the three functioning on-line relational databases for geochemical analyses of igneous rocks:PetDB (Petrological Database of the Ocean Floor), GEOROC (Geo chemistry of Rocks of the Oceans and Continents), and NAVDAT (North America Volcanic and Intrusive Rock Database) from both continents and the ocean basins who have outlined a series of tasks to be pursued in a cooperative manner, now presented at www.earthchem.org, that will bolster the coverage, utility, and ease of use of the data sets. Coordination with CHRONOS (Cyberinfrastructure for Chronostratigraphic Databases) will ensure compatibility with the yet-to-be compiled sediment geochemical data set.

(2) *Geochronology and Thermochronology*

Mark Schmitz (Co-Chair, DTM and U. Idaho), Dan Stockli (Co-Chair, U. Kansas), John Gosse (Co-Chair, Dalhousie)

This group will first become familiar with the planned geochronologic efforts of the CHRONOS program then form a working group to deal with developing databases and access tools for thermochronologic and cosmogenic age data.

(3) *Geochemistry of Metamorphic Rocks and Metamorphic Petrology*

Frank Spear (Chair; Rensselaer Polytechnic Institute), John Brady (Smith College), Barbara Dutrow (LSU), William Carlson (UT Austin), Tom Foster (U Iowa), David Pattison (U Calgary), Michael Williams (U Mass, Amherst)

This group will identify important issues relating to a MetPetDB (Metamorphic Petrology DataBase) and will visit the PetDB site to discuss possible strategies for a MetPetDB. There are (at least) two types of information that a MetPetDB needs to incorporate: (1) Raw data with sufficient documentation that a petrologist can use these data for scientific discovery. These include data such as assemblage information, textures, microprobe analyses, BSE, SE, X-ray images, photomicrographs, along with associated spatial data such as location of sample, location of microprobe analyses, etc. (2) Interpretative data such as peak *P-T* conditions and rock *P-T* path, fluid-rock ratios, cooling/heating rates with associated metadata. An additional consideration is the development of tools for analysis of information in the database such as programs to do geothermobarometry, *P-T* path calculations, thermal modeling, and thermodynamic calculations of various sorts.

(4) *Structural Geology*

John Oldow (Chair, U. of Idaho), Jeff Lee (Central Washington U.), C. J. Northrup (Boise State), Basil Tikoff (U. of Wisconsin)

This group will hold a two day workshop at the University of Idaho in early October 2003 to: (1) identify the database needs and analysis tools required by structural geologists,

(2) outline a vision for the architecture of a structural geology CI and its relation to existing or planned earth science CI initiatives, (3) initiate a discussion on data standards, required metadata, and information formats for databases, and (4) develop a strategy for community involvement and implementation.

(5) *Physical properties of rocks and minerals*

Tracy Rushmer (Chair, U. Vermont), Herb Wang (U. Wisconsin), Nik Christianson (U. Wisconsin), Steve Kirby (USGS)

The main need is to establish accessible databases and exploration tools for the fundamental properties of rocks, including attenuation, rock density, seismic velocity, magnetic properties, permeability and anisotropy. Access to these data in an integrated form is critical to many aspects of ISES research and especially to the new EarthScope effort. This group will work with the PPEM (Physical Properties of Earth Materials) community that is already established.

(6) *Field data acquisition techniques*

Carlos Aiken (Chair, UT Dallas), Kelin Whipple (MIT), Doug Walker (U. Kansas)

There is active research on using new technologies for field data acquisition but there is no organized community of researchers. The steering committee recommends coordination under an organization they call INTERFACE (INTERdisciplinary alliance for digital Field data ACquisition and Exploration). This alliance will involve not just geosci-

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Integrated Solid Earth Sciences
ISES Forum I: CyberInfrastructure and Geochronology
Saturday, November 1st, 2003

This year, on the day before the Annual Meeting of GSA in Seattle, the ISES Coordinating Group will hold the first Integrated Solid Earth Science Forum (ISES Forum I) with the support of the NSF. ISES is the outgrowth of the "Setting Priorities in Solid Earth Science Workshop" held last year in Denver. This forum is the next step in the change in the research and education culture of the Solid Earth Sciences (SES) through communication and integration. We invite participation in the forum from individuals in all sectors of the Solid Earth Science community. ISES Forum I will involve a series of updates and presentations, will serve as a platform for discussion of research facilities and equipment, and will identify emerging needs in cyberinfrastructure to support research and education in the SES. We will discuss recent developments in the ISES Initiative and EarthScope Program, and receive an update about the ISES-CI (CyberInfrastructure) activities, including discussion of progress in some of its components. The goal in facilities and equipment is to ensure sufficient infrastructure in geochemistry, particularly geochronology, to support the increasing needs of ISES research, including research by students. Community input through the Annual ISES Forums will be used to develop new ISES initiatives to better integrate and strengthen our science. Several of the NSF EAR and OCE Directorate will attend the Forum, and will contribute to the discussion of opportunities available to the ISES community. Please come to Seattle to meet with colleagues in the Solid Earth Sciences and the NSF, and be involved in developing the ISES community and in shaping our collective future.

To apply, send a single page two-paragraph application to Mike Brown at mbrown@geol.umd.edu by Friday September 26th, 2003. In the first paragraph, give your background, current interests and position, and summarize previous participation in recent workshops (e.g., "Setting Priorities in the Solid Earth Sciences", "New Departures in Structural Geology & Tectonics", "On the Cutting Edge", any "EarthScope" workshop), and in the second paragraph describe what you hope to contribute to ISES Forum I, including what you view as important priorities for the community and your ideas about the future direction of research and education in the Solid Earth Sciences. Please indicate the level of support you will need (generally as an add-on cost to your GSA attendance) to participate in the Forum (as a guide, we anticipated an average grant for up to 100 participants of $400 towards travel and/or hotel costs).

The *American Mineralogist* Crystal Structure Database represents one of the ways that the Mineralogical Society of America is taking advantage of the Information Technology emphasis of the National Science Foundation (Downs and Hall-Wallace, 2003). This database currently consists of all the crystal structure data ever published in the *American Mineralogist*, *The Canadian Mineralogist*, and the *European Journal of Mineralogy*. The data is freely accessible through the "Crystal Structure Database" link on the MSA website at http://www.minsocam.org/ or directly at http://www.geo.arizona.edu/AMS/amcsd.php. Future plans include data from *Physics and Chemistry of Minerals*, *Mineral Magazine* and *Acta Crystallographica*. Hyperlinks from minerals will be provided to the *Handbook of Mineralogy* (http://www.minsocam.org/MSA/Handbook/) as well as to electronic copies of the papers from which the data originated. *—Robert T. Downs*

Reference cited

Downs, R.T. and Hall-Wallace, M. (2003) The American Mineralogist Crystal Structure Database. American Mineralogist, 88, 247–250

Mineralogical Society of America and Geochemical Society Short Course

BIOMINERALIZATION

December 6-7, 2003
Silverado Resort, Napa Valley, California, 94558, U.S.A.

Over the course of Earth history, organisms have developed the ability to produce a wide variety of complex inorganic minerals. These biominerals often have sophisticated structures and can possess chemical compositions that reflect their environments of formation. The abundance of biominerals in modern water columns, sediments and the rock record extensively chronicle the intertwined roles of biota and environment. An example of the extent and impact of biomineralization processes is clearly demonstrated in the global balance of carbon. Biomineral precipitation has sequestered a significant portion of the earth's carbon into an inert geochemical reservoir over the course of 3.5 by. This link between earth and life has governed critical shifts in ocean and atmospheric chemistry throughout earth's history.

The immense complexity of natural systems has thwarted efforts to construct a fundamental understanding of the processes employed by organisms to control mineralization. The advent of powerful new experimental and theoretical methods in geochemistry and molecular biology has enabled the scientific community to witness the first glimpses of a revolution that will unravel the complexity of mineral assembly in biological and inorganic systems. These approaches will be required to obtain unambiguous models of mineralization that are rooted in kinetics and thermodynamic properties. Linking mineralization models with the biological processes will give a fundamental and microscopic understanding of how organisms organize elements into minerals and materials. With this understanding, we will be able to overcome many of the limitations on our ability to interpret and predict longer length- and time- scale phenomena that occur in biogeochemical systems.

The subject of biological mineralization is a growing research area, as new and more established scientists focus upon biogeochemical problems at the interface between earth and life. The earth sciences are uniquely positioned to play a central role in advancing this field. To this end, a primary goal of the short course is to bring the subject of biological mineralization into an educational forum that will establish the state of the field and show new avenues for research. Our approach is to introduce the concepts that are common to biological mineralization phenomena and then to examine the major mineralization processes and their impacts on earth history. We encourage the participation of scientists from a wide cross-section of earth, biological, and materials disciplines. The short course will be followed by Biomineralization Special Sessions at the American Geophysical Union Meeting in San Francisco, California. Topics and Speakers/Authors for the short course:

Establishing Cross-Disciplinary Communication

- Overview of biomineralization: Interface between earth and life - *Steve Weiner (Weizmann Institute) and Patricia Dove (Virginia Tech)*
- Principles of molecular biology and protein chemistry - *John Evans (New York University)*
- Principles of nucleation and growth - *Jim De Yoreo (Lawrence Livermore National Laboratory)*

Biological Processes and Mechanisms

- Biologically induced mineralization (with focus on microbes) - *Richard Frankel (California Polytechnic State University)*
- Boundary organized (with focus on microbes) - *Dennis Bazylinski (Iowa State University)*
- Mineralization in an organic matrix framework (with focus on vertebrates) - *Arthur Veis (Northwestern University)*
- Supplying the ions for biomineralization (with focus on corals/forams) - *Jonathan Erez (Hebrew University)*
- Mineralization inside vesicles (with focus on coccoliths) - *Jeremy Young (Natural History Museum of London) and Karen Henriksen (University of Copenhagen)*
- Silicification (with focus on diatoms, sponges) - *Carole Perry (Nottingham Trent University)*

Biomineralization Impacts on Earth Environments

- Biomineralization and evolutionary history of organisms - *Andrew Knoll (Harvard University)*
- Impacts of biomineralization on biogeochemical cycles - *Philippe Van Cappellen (University of Utrecht)*

Conveners: *Patricia M. Dove*, Department of Geological Sciences, Virginia Tech, Blacksburg, VA, *James J. De Yoreo*, Lawrence Livermore National Laboratory, Livermore, CA, and *Steve Weiner*, Department of Structural Biology, Weizmann Institute, Rehovot, Israel.

Fees & Registration: All inclusive registration fee covers short course sessions, hotel room for two nights (double occupancy), refreshments at breaks, Saturday lunch, evening banquet at Napa Valley Grill, transportation to restaurant, and *Reviews in Mineralogy and Geochemistry* volume. Professional Registration on or before 11/1/03: Member $420; Non-member $475; Student Registration: Member $220; Non-member $240. You can register online at the MSA Home Page (http://www.minsocam.org). Forms are are available from the MSA Business Office, 1015 Eighteenth Street NW Suite 601, Washington, DC, 20036-5212, USA. Tel: 202-775-4344, Fax: 202-775-0018, e-mail: business@minsocam.org.

The course is sponsored in part by the U.S. Department of Energy, Office of Basic Energy Sciences, Chemical Sciences, Geosciences and Biosciences Division, in honor of Dr. William C. Luth. The Lawrence Livermore National Laboratory and Department of Geological Sciences at Virginia Tech are also providing support for the short course and graduate student registration waivers, respectively.

Registration Form
Mineralogical Society of America and Geochemical Society Short Course

BIOMINERALIZATION

Silverado Resort & Conference Center, Napa, California – December 6-7, 2003

Complete and return this registration form to the MSA Business Office, 1015 Eighteenth St NW Suite 601, Washington, D.C. 20036-5274, USA. Voice: (202) 775-4344. Fax: (202) 775-0018. Please type or print. Use one form per registrant. Registration is limited to 100 people on a first-come, first-served basis. Payment must accompany this form, which will be fully refunded if cancellation is received in writing prior to November 9, 2003.

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All-inclusive registration fee covers Short Course session costs, hotel room for two nights (double occupancy), Saturday lunch, refreshments, banquet at Napa Valley Grill, and the *MSA/GS* volume. All Short Course sessions will be held at the Silverado Resort, 1600 Atlas Peak Road, Napa Valley, California, 94558, U.S.A. Voice: (707) 257-0200. There is an informal welcoming reception at 6:00 pm Friday evening, December 5, Silverado Resort. Information on the Short Course location, ground transportation, and course updates are on the MSA Home Page (http://www.minsocam.org).

Registration. Mark the appropriate registration category [X] and write the appropriate fee on the cost line.

Professional Registration:	*on or before 11/1/03*	*after 11/1/03*	**Cost**
[ ] Member	$440	$490	$_____
[ ] Non-member	$495*	$545*	$_____
[ ] Speaker	no cost	no cost	$_____
Student Registration:	*on or before 11/1/03*	*after 11/1/03*	
[ ] Member	$260	$290	$_____
[ ] Non-member	$280*	$310*	$_____

* includes MSA membership dues/electronic access to *American Mineralogist* for 2004

Room Assignments (based on double occupancy). Mark [X] all preferences that apply.

[ ] Male [ ] Female
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Roommate preference (both parties must state) _____
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Total Due $_____

Amount Enclosed. Indicate the payment method and amount of payment enclosed.

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entists, but also biologists, ecologists, geographers, and any other domains that rely on field data acquisition by individuals or small groups.

(7) *Geological and Geophysical Maps*

Doug Walker (Chair, U. Kansas), Clark Burchfiel (MIT, President GSA), Bruce Wardlaw (CHRONOS)

Because the spatial content of most ISES data is critical, the creation of maps is vital, all the way from the basic field data and relations presented on geologic maps, to geophysical measurement of gravity, magnetics, and crustal properties, to derived maps such as paleogeography, paleotectonics, and palinspastic reconstructions. Coordination with the USGS and GSA is critical to this because of ongoing efforts of these groups to publish maps and charts.

(8) *Stratigraphy*

Rebecca Dorsey (Co-Chair, U. of Oregon), Tim Carr (Co-Chair, Kansas Geological Survey)

This working group is starting efforts to understand the needs of the stratigraphic and larger geological community as well as a variety of data, tools, and CI efforts available already to work on stratigraphic information.

(9) *Tools for data integration and exploration, and creating the ISES Colaboratory*

Jonathan Lees (Chair, U. of North Carolina), Randy Keller (UTEP), James Handschy (ConocoPhillips), Eric Frost (Cal State San Diego).

All of the efforts described here would benefit greatly from the ability to visualize and analyze data sets and models in a 3-D and 4-D environment. Integrative efforts are necessary to allow for the seamless blending of ISES data with those coordinated by CHRONOS, the GeoScience Network (GEON), and any geophysical-CI groups [e.g., CI products from Incorporated Research Institutions for Seismology (IRIS) and University NAVSTAR Consortium (UNAVCO)]. These tools also will help enable the type of integrative research at the heart of the EarthScope Program. In addition, the ISES-CI group considers a Colaboratory effort (a distributed laboratory) that allows for interdisciplinary interactions and integrating real-time field data acquisition into office efforts to be goals.

(10) *Sample Archiving*

Steven L. Goldstein (Co-Chair, LDEO), Paul Kimberley (Co-Chair, Smithsonian Institution), Roberta Rudnick (U. Maryland), Terry Plank (Boston U.), Charlie Langmuir (Harvard U.), Paul Renne (Berkeley Geochronology Center), Scott McLennan (SUNY Stony Brook), Sam Bowring (MIT), Allen Glazner (U. North Carolina), Richard Carlson (DTM)

All geochemical data and much structural data are associated with physical samples, and therefore data preservation must be accompanied by a system that insures sample preservation and community access. Discarding samples after an investigation is finished or when an individual retires has been a common practice. Many unique samples and collections have been lost to the community for future studies.

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Contributors and Benefactors

Many members contribute to MSA each year by including a contribution with their dues. Depending on the wishes of the member, the money is deposited with the principal of the MSA Endowment, MSA Mineralogy/Petrology, MSA Outreach, or Edward H. Kraus Crystallographic Research Funds. The income of these four Funds are to support MSA's research grants in crystallography, mineralogy, and petrology; publishing of the *American Mineralogist*; the *American Mineralogist* Undergraduate Awards; the Mineralogical Society of America Award; the Distinguished Public Service Award, the Roebling Medal; the website, and the lectureship program. These Funds are described in more detail in the Financial Advisory Committee Report that appears in this issue. Continued member generosity has permitted the two Funds that support student research grants to each give three $5000 student research grants yearly.

Between 8/1/2002 and 7/11/2003, 496 MSA members and organizations contributed $19,631.25 to MSA Funds: Endowment ($10,139.25), Kraus ($1,782), Mineralogy/Petrology Fund ($5,331), and Outreach ($2,399). If you have not done so previously, you might want to consider contributing at the next opportunity. Here we want to extend our gratitude to the following individuals and organizations:

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Upcoming Short Courses

Epidote Group Minerals Spring 2004
Organizer: Axel Liebscher
Meeting: XIV Goldschmidt Conference in Copenhagen (Denmark)

Stable Isotopes of Intermediate to Heavy Mass Elements May 16, 2004
Organizers: Clark Johnson (Univ. of Wisconsin-Madison), Francis Albarade (Univ. of Lyon), Brian Beard (Univ. of Wisconsin-Madison).
Meeting: Joint American Geophysical Union and Canadian Geophysical Union Meeting, Montreal, QC Canada

Treasurer, Continued from page 4

system. These upgrades were required to handle increasing electronic traffic resulting from on-line access to the *American Mineralogist*.

• This year accrued leave and depreciation expenses for the Business and Editorial Offices were treated as "actual" expenses, even though they were not included in the 2002 Council-approved budget. In the future these expenditures will be included in projected MSA budgets, as it is now possible to estimate them with good accuracy.

• "Bad debt" expenses were high again this year, mainly because many bills for off-prints remain to be paid.

• Costs of publishing *The Lattice* newsletter are up, partly due to an increased average length, but also because membership in the Society has increased. Mailing issues to foreign subscribers is a particularly expensive part of distributing *The Lattice*. It now costs $7.89 to mail four issues of the newsletter to those subscribers, compared to just $1.58 for domestic subscribers.

• Postage, shipping and supply expenses are much less than anticipated for the Editorial Office, and production costs for the *American Mineralogist* are down. In addition, costs of storing back issues of the *American Mineralogist* continue to decline. Currently, only back issues from the past five years are stocked; inventories from previous years are being stored by Periodical Services Company.

• As of 12/31/02, the market value of MSA's investments was $1,651,402.07. Corresponding figures for last year and the year before are $2,025,061.08 and $2,331,008.16, respectively.

• The Society's books were again audited by the firm of Rubino & McGeehin and found to be in order. On the basis of the preliminary audit report, the Society's total assets at the end of 2002 were $1,877,415 vs. $2,339,273 in 2001 (a 19.7% decrease since the end of 2001). Approximately 75% of this decrease is attributable to unrealized capital losses from investments. The remaining amount (~$115K) is primarily the result of printing six RiMG volumes last year.

• Auditing costs have increased, and are expected to increase further in the future. This is due largely to more rigorous scrutiny of MSA's financial statements.

• Investment fees are higher this year, due to redemption of all assets held prior to the current arrangement with Wachovia Securities.

• Interest income from the Commercial Money Account for MSA operating funds is half the amount budgeted due to very low interest rates.

• The 2003 budget remains as approved by Council during the Third 2002 Council Meeting. As was the case last year, the main budgetary uncertainties are: the number of RiMG volumes that *actually* will be printed and reprinted, and the income that will be generated by sales of RiMG volumes. The past two years have seen a sharp increase in the number of new volumes; five in 2001 and six in 2002, versus one or two per year between 1994 and 2000. To reduce near-term costs stemming from the production and distribution of the books, it seems prudent to limit annual publication to 2-3 "full-length" (~800 page) books, ±1-2 "abbreviated" (400-500 page) volumes.

• The U.S. Department of Energy (DOE) continues to provide important financial support for MSA/GS short courses (to date, $70K for nine short courses). The latest grant, $30K for 3/1/2003 through 7/31/2004, will help defray the costs of the short courses entitled: "U-Series Geochemistry"; "Zircon: Experiments, Isotopes, and Trace Element Investigations"; and "Intermediate-Mass Stable Isotopes." The primary purpose of the support is to reduce student fees. The MSA is deeply indebted to the DOE for their generous sponsorship of MSA/GS topical short courses.

• The Accademia Nazionale dei Lincei (Italian Academy of Sciences) supported production of RiMG volume 46: "Micas: Crystal Chemistry and Metamorphic Petrology," edited by A. Mottana, F. P. Sassi, J. B. Thompson, Jr., and S. Guggenheim. The funds (i) covered most of the costs of printing and distributing copies to institutional subscribers to the *American Mineralogist*, and (ii) provided the Italian Academy with 250 copies for their own internal distribution.

• Projected 2004 "first-copy" (production) expenses for the *American Mineralogist* are $635 for domestic subscribers and $662 for foreign subscribers. These prices cover the costs of producing eight issues of the *American Mineralogist*, four new RiMG volumes, and four issues of *The Lattice* newsletter. Dollar amounts required to break even under all assumptions are: member subscription rate, $40.60; domestic institutional subscription rate, $635.16; and foreign institutional subscription rate, $662.07. Weighing the implications of these figures, the following decisions were made. (1) MSA members currently pay $35 for a subscription to the *American Mineralogist*, which includes access to the online journal. This rate is more than $5 below the estimated break-even cost ($40.60). Therefore, it is necessary to raise the 2004 rate to $40. (2) In addition to raising the member rate, institutional subscription rates to the *American Mineralogist* will be increased from $580 to $625 for domestic subscribers, and from $600 to $650 for foreign subscribers. These new prices are, respectively, 7.2% and 7.7% higher than they were last year. These increases, while significant, still do not cover full production costs, which have increased significantly due partly to the larger number of RiMG volumes that are included in the subscriptions. (3) The $10 charge for professional and student member access to the online journal will be maintained. This price is slightly above the estimated break-even cost ($7.36). (4) Institutional subscribers are now receiving electronic access to the *American Mineralogist* as part of their paper subscriptions. This avoids the need to charge separately for that access, and to separately process and record paper and electronic subscriptions. Institutions can choose not to receive paper copies, but the cost of the subscription remains the same.

• Income from 2002 dues was $78,673. To date, Council has not specifically identified expenses to be covered by

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Mineralogical Society of America Publications Price List and Order Form

Reviews in Mineralogy and Reviews in Mineralogy and Geochemistry (25% member discount)

___v. 08: Kinetics of Geochemical Processes (1981) **$20**
___v. 9A: Amphiboles: Mineralogy (1981) **$20**
___v. 9B: Amphiboles: Petrology, Phase Relations (1982) **$20**
___v. 10: Characterization of Metamorphism through Mineral Equilibria (1982) **$20**
___v. 11: Carbonates: Mineralogy & Chemistry (1983) **$24**
___v. 12: Fluid Inclusions (1984) **$32**
___v. 13: Micas (1984) **$28**
___v. 14: Microscopic to Macroscopic: Atomic Environments to Mineral Thermodynamics (1985) **$20**
___v. 15: Mathematical Crystallography (rev.) (1990) **$24**
___v. 16: Stable Isotopes in High Temperature Geological Processes (1986) **$24**
___v. 17: Thermodynamic Modeling of Geological Materials: Minerals, Fluids, Melts (1987) **$28**
___v. 18: Spectroscopic Methods in Mineralogy and Geology (1988) **$28**
___ v. 19: Hydrous Phyllosilicates (Exclusive of Micas) (1988) **$28**
___v. 20: Modern Powder Diffraction (1989) **$28**
___v. 21: Geochemistry/Mineralogy of REE (1989) **$28**
___v. 22: The Al_2SiO_5 Polymorphs (1990) **$24**
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Mineralogical Society of America Membership Application

To join the MSA, please send a copy of this application, along with the required payments for dues and subscriptions, to the Mineralogical Society of America, 1015 Eighteenth St NW Ste 601, Washington DC 20036-5212, USA phone: (202) 775-4344; fax: (202) 775-0018; e-mail: business@minsocam.org; website: www.minsocam.org

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Areas of Interest: (Check as many as apply) [ ] Mineralogy (MI), [ ] Crystallography/Crystal Chemistry (CC), [ ] Material Properties (PP), [ ] Igneous Petrology (IP), [ ] Metamorphic Petrology (MP), [ ] Sedimentary Petrology (SP), [ ] Geochemistry (GE), [ ] Phase Equilibria (PE), [ ] Economic Geology (EG), [ ] Clay Mineralogy (CM), [ ] Industrial Mineralogy (IM), [ ] Environmental Mineralogy (EM), [ ] Gems GM, [ ] Planetary Materials (PM), [ ] Teaching (TC), [ ] Descriptive (Topologic) Mineralogy (TP), [ ] Mineral Surfaces (MS), [ ] Biological-Mineral Interactions (BM), [ ] Others (Please indicate) _____

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2003 Fee Schedule

Memberships are entered and renewed on a calendar basis. You will receive all publications for the year you join. Membership applications received after October 1 will be made effective January 1 of the following year unless otherwise requested. Members will receive the newsletter, *The Lattice*, as part of their dues. As an additional benefit, members may elect to receive the *American Mineralogist*, as well as some related publications, at substantially reduced rates. Please indicate all options that apply in the box to the right. Members are entitled to a 25% discount on other MSA publications given on our Publication List.

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	American Mineralogist (paper & online member price)	35.00
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	Mineralogical Abstracts, published quarterly by the Mineralogical Society of Great Britain & Ireland	60.00
	Physics and Chemistry of Minerals, published eight times a year by Springer-Verlag	532.00
	Journal of Petrology, published twelve times a year by Oxford University Press	434.00
	Rocks & Minerals published 6 times a year by Heldref Foundation $48.00 ($63.00 for non-US addresses)	
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Welcome New Members

WELCOME!

The following individuals joined MSA January 16, 2003 through April 11, 2003. We welcome them to the Society. The areas of interest are: Mineralogy (MI), Crystallography/Crystal Chemistry (CC), Material Properties (PP), Igneous Petrology (IP), Metamorphic Petrology (MP), Sedimentary Petrology (SP), Geochemistry (GE), Phase Equilibria (PE), Economic Geology (EG), Clay Mineralogy (CM), Industrial Mineralogy (IM), Environmental Mineralogy (EM), Gems (GM), Planetary Materials (PM), Teaching (TC), Descriptive Mineralogy (TP), Biological-Mineral Interactions (BM), and others as indicated.

If you know of someone who would like or should join MSA, give them the membership application that appears in this issue of *The Lattic*e, or is available from either MSA's web site (http://www. minsocam.org) and the MSA Business Office, 1015 Eighteenth St NW Ste 601, Washington, DC 20036-5212, USA.

Abe, Dr. Natsue, Japan Marine Sci & Tech Center, Yokosuka Kanagawa, JAPAN. (Member: 5/22/03). IP, MP, PM, BM,

Akamatsu, Dr. Tadashi, Kochi University, Kochi, JAPAN. (Member: 5/22/03). MI, CC, PP, PE,

Anderson, Mr. Eric D., Mount Sterling KY. (Student: 4/17/03). MI, CC, IP, MP, GE, PE, PM,

Bates, Mr. William J.L., Univ of Illinois @ Chicago, Chicago IL. (Student: 6/27/03). MI, SP, GE, EM, MS,

Beckham, Prof. Haskell W., Atlanta GA. (Member: 6/18/03). MI, PP, GE, IM, EM, TC, BM,

Blankenship, Mr. James L., Euless TX. (Member: 5/22/03). MI, CC, PP, PE, EM, BM,

Carruzzo, Ms. Sarah, Halifax NS, CANADA. (Student: 6/26/03). MI, IP, GE, EG, TC,

Chutas, Mr. Nathan I., Univ of Washington, Seattle WA. (Student: 4/23/03). MI, CC, MP, PE, EG,

Cihan, Mr. Mustafa, James Cook University, Townsville QLD, AUSTRALIA. (Student: 4/23/03). MP, PE, EG, PM,

Ciocirdel, Mr. Mihai, Ploiesti Prahova, ROMANIA. (Student: 5/30/03). IP, MP, SP, EG,

Cooper, Mr. Marc R., Baton Rouge LA. (Student: 5/29/03). MI, CC, GE, IP, MP,

Culkin, Mr. Sean L., Manhasset NY. (Student: 5/22/03). MI, IP, MP, SP, PM, BM,

Da Silva, Mr. Eduardo Figueira, Ann Arbor MI. (Student: 5/1/03). GE, EM, TC, MS,

Green, Mrs. Elisabeth G., Univ of California-Berkeley, Berkeley CA. (Student: 5/22/03). MI, GE, BM,

Greene, Mr. Brennan E., Salisbury MD. (Student: 5/22/03). PM,

Harris, Mr. Ian Edsel, St Lambert QC, CANADA. (Member: 5/1/03). MI, CC, PP, IP, MP, SP, PE, CM, EM, PM, TP, MS, BM, OTHER, GEODESY, PLANETARY PETROLOGY

Hattori, Prof. Keiko H., University of Ottawa, Ottawa ON, CANADA. (Member: 5/22/03). MI, IP, MP, GE, EG,

Hill, Miss Lana Jo, Reading PA. (Student: 5/22/03). CC, GM,

Ishida, Prof. Kiyotaka, Kyushu University, Fukuoka, JAPAN. (Member: 6/19/03). MI, CC, PP, IP, MP, GE, PE, CM, PM, TP,

Jahn, Prof. Bor-ming, National Taiwan University, Taipei, TAIWAN. (Member: 5/1/03). MI, IP, MP, SP, GE, PE, EG, PM,

Jullien, Dr. Michel, Commissariat Energie Atomique, St Paul Lez Durance Cedex, FRANCE. (Member: 6/Member/03).,

Kelson, Mr. Chris R., Univ of Georgia, Athens GA. (Student: 5/1/03). MI, CC, IP, GE, EG, CM, GM, BM,

Knox, Dr. Anna Sophia, Westinghouse Savannah River Co, Aiken SC. (Member: 6/23/03).,

Liu, Ms. Qiong, Univ of Michigan, Ann Arbor MI. (Student: 5/22/03). MI, PP, IP,

Lopez, Miss Karen M., Toms River NJ. (Student: 5/22/03). MI, CC, PP, IP, MP, SP, GE, PE, EG, CM, IM, EM, GM, PM, TP, MS, BM,

Malkovets, Dr. Vladimir, Macquarie University, Sydney NSW, AUSTRALIA. (Member: 6/19/03). MI, CC, IP, MP, GE, PE, EG, IM, GM, PM, TC, TP,

Maloney, Ms. Jennifer S., Morgantown WV. (Student: 7/9/03). MI, IP, MP, GE, EG, EM, GM, PM, BM, TP,

Mejia Santillan, Ms. Mirian Esrher, Lima, PERU. (Student: 5/30/03). MI, GE, CM, EM, TC, BM,

Miller, Ms. Sarah A., California Inst of Technology, Pasadena CA. (Student: 6/4/03). MI, CC, IP, GE, PE, PM,

Perrone, Ms. Morgan L., Las Cruces NM. (Student: 5/30/03). MI, CC, SP, GE, EM, GM, PM, TC, MS, BM, OTHER, MINERALS IN CAVES

Petko, Mr. Craig E., Mechanicsburg PA. (Member: 6/Member/03). MI, IP, MP, GE, PE,

Pinan-Llamas, Ms. Aranzazu, Boston University, Boston MA. (Student: 6/2/03). MI, IP,

MP, GE, PE,

Poulos, Ms. Christina M., Binghamton NY. (Student: 5/30/03). MI, PP, OTHER, PETROFABRICS

Rodriguez, Ms. Virginia T., Ellensburg WA. (Student: 5/Student/03). MI, IP, GE, EM, OTHER, GEOTHERMAL WATERS

Rowe, Ms. Christen D., Univ of California-Santa Cruz, Santa Cruz CA. (Student: 5/23/03). MI, MP, SP, GE, TC,

Rustad, Dr. James R., Pacific Northwest National Lab, Richland WA. (Member: 5/30/03). MI, CC, GE, EM,

Schelble, Ms. Rachel T., Univ of Southern California, Los Angeles CA. (Student: 5/30/03). MI, SP, GE, EG, CM, BM,

Shand, Miss Elizabeth R., Christ's College, Cambridge Cambridgeshire, UNITED KINGDOM. (Student: 5/22/03). MI, CC, PE, IM, EM, TP,

Sidman, Mr. Donald J., Univ of Minnesota, Minneapolis MN. (Student: 6/4/03). MI, CC, MP,

Stone, Dr. Howard J., Cambridge England, UNITED KINGDOM. (Member: 5/22/03). MI, CC, PP, PE,

Suiter, Miss BreAnna M., Hagerstown MD. (Student: 5/22/03). MI, CC, GE, EG, CM, EM, GM, PM, TC, BM,

Tomiya, Mr. Susumu, Baltimore MD. (Student: 5/22/03). SP, EM, BM,

Valencia, Mr. Victor A., Tucson AZ. (Student: 6/18/03). IP, GE, EG,

Weaver, Dr. Robert M., McCrone Research Institute, Chicago IL. (Member: 6/Member/03).,

Yamaguchi, Dr. Akira, National Inst of Polar Research, Tokyo, JAPAN. (Member: 5/30/03). MI, PM,

Yan, Mr. Rong Yi, Taipei, TAIWAN. (Student: 6/27/03).

CI, Continued from page 10

The mandate of the SAMPLES (Sample Archive and Management Planning for the Earth Sciences) working group is to assess archival options for precious *petrology-geochemistry* and *structural geology* samples and make recommendations for their implementation taking into account the practices of other disciplines where samples are archived and widely accessible.

The ISES-CI Steering Committee and the working groups will prepare detailed recommendations by the time of the GSA and AGU meetings in the Fall of 2003. Most working groups will make presentations at the next ISES meeting to be held the day before the Geological Society of America meeting in Fall, 2003. After developing community consensus, the working groups will initiate proposals to implement the ISES-CI system at the start of 2004. Within 1 to 2 years, these proposals will start to produce results that will foster a cultural shift in the ISES community toward the adoption and integration of the CI system.

Other disciplines have been busy thinking about a cyberinfrastructure. A recent issue of the International Union of Crystallography (IUCR) Newsletter (2003, volume 11, no. 1, 8) reports on the Inter-Union Bioinformatics Group. The group comprises organizations primarily interested in crystallography of biological materials. They concluded that it is the obligation of all concerned (researchers, funding agencies, educational and research organizations, societies, for-profit and non-profit publishers) to archive and support validation, storage, and full public access of primary scientific data. To really make use of the data, standardization as well specific education in informatics is required. The Bioinformatics Group had a number of recommendations. For publishers and authors they recommend making the primary data available on the same basis as the published paper. They suggest that journals not publish an article until the data is deposited, and authors not publish in journals that do not conform to the rules of data archiving and availability.

If you want to participate in any of these efforts, consider contacting the chairs of the ISES-CI Working Groups. If you feel that a discipline of interest to MSA members has been overlooked, contact one of the Steering Committee chairs to see if an additional working group might be started, or the domain of an existing one expanded. Certainly there appears that much can also be learned at the GSA and AGU meetings in the Fall of 2003 as well. Non-US individuals are most welcome and are already involved in some of the ISES-CI working groups. Some aspects of these efforts will be NSF-focused, and hence US-centric, but the science issues are international in scope.

November 2003 Lattice DEADLINE: October 15, 2003

Andrea Koziol: e-mail: Andrea.Koziol@

AM MIN STATS AT A GLANCE (FOR JULY)

No. of Pending Manuscripts (on 30-July-2003): 130
No. of New Manuscripts Submitted: 19
No. of Accepted Manuscripts: 22 (queued)
No. of Declined Manuscripts: 4
No. of Withdrawn Manuscripts: 1
No. of revisions pending: 46

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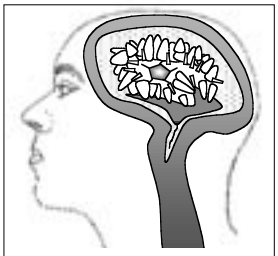
Pegmatite Interest Group



"Get PIG-headed."

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Are you interested in the mineralogy and geology of pegmatites? If so, visit the website for the Pegmatite Interest Group (PIG), hosted by the Mineralogical Society of America at

http://www.minsocam.org/msa/Pegmatites.html

Keep up on news, events, & information about pegmatites and their minerals. Current postings include a field guide to pegmatites in Madagascar, a report on a new elbaite-bearing pegmatite in the Italian Alps, and weekly updates on gem mining at the Cryo Genie pegmatite, southern California.

Send contributions to the PIG site in electronic formats only to Dr. David London (editor and MSA representative) at

dlondon.ou.edu.

Meetings Calendar 2003

2003

SEPTEMBER

18–21 International Symposium on Mineralogy. Cluj-Napoca, Romania. Details: Prof. Bogdan P. Onac, Department of Mineralogy, Babes-University, 3400 Cluj, Romania. E-mail: obonac@bioge.ubbcluj.ro. Web site: http://bioge.ubbcluj.ro/~bonac/smr.htm.

22–25 Earth Sciences into the 3. Millennium: Methods, Materials, Mechanisms, Böchum, Germany. Details: Olaf Medenbach, Institut für Geologie, Mineralogie und Geophysik, Ruhr-Universität Bochum, 44780 Bochum. E-mail: olaf.medenbach@rub.de. Web Page: http://www. geo2003.rub.de/html/eng/index.html

OCTOBER

5–10 The XII International Mineral Processing Congress. Cape Town, South Africa. Details: Mrs Meg Winter, Congress Secretariat, IMPC 2003, c/o Department of Chemical Engineering, University of Cape Town, Rondebosch 7701, South Africa. Phone: +27(0)21 650-2752. Fax: +27(0)21 689-7579. E-mail: impc@chemeng.uct.ac.za. Web page: http://www.impc2003.org.za

NOVEMBER

2–5 Geological Society of America Annual Meeting. Seattle WA USA. Details: GSA Meetings, Box 9140, Boulder, CO. 80301-9140. Phone: +1-303-447-2020, ext. 164. Fax: +1-303-447-1133. E-mail: meetings@geosociety.org. Web page: http://www.geosociety.org/meetings/index.htm

9–12 Materials Science & Technology 2003, Chicago, Illinois. E-mail: info@matscitech.org. Web page: http://www.matscitech.org/2003/Home.shtml

28–29 Swiss Society of Mineralogy and Petrology: National Symposium on SWISS GEOSCIENCES: New Perspectives. Basel, Switzerland. Web page:http://titan.minpet.unibas.ch/aliens/smpg/Meeting.html

DECEMBER

1–5 Materials Research Society Fall Meeting, Boston MA USA. Web page; http://www.mrs.org/meetings/fall2003/

8–12 AGU Fall Meeting, San Francisco, CA, USA. Details: AGU Meetings Department, 2000 Florida Avenue NW, Washington, DC 20009 USA. Phone: +1-202-462-6900; Fax: +1-202-328-0566. Email: meetinginfo@ agu.org. Web page: http://www.agu.org/meetings.

2004

JANUARY

5–7 The Mineralogical Society (of Great Britain and Ireland) Winter Meeting 2004. Assembly Rooms, Bath, Great Britain. Details: Dr N. Petford. E-mail: info@minersoc.org; Web site: http://www.minersoc.org/pages/meetings/Geothermal.htm

FEBRUARY

8–13 17th Australian Geological Convention. Hobart, Tasmania. Web page: http://www.17thagc.gsa.org.au/

10–12 Second International Symposium on the Dynamics of Fluids in Fractured Rock. Berkeley, California USA. Details: Boris Faybishenko, Lawrence Berkeley National Laboratory. Phone (510) 486-4852, fax 510-486-5686. E-mail: bfayb@lbl.gov. Web page: http://esd.lbl.gov/fluidsinrock/

MARCH

14–18 The Minerals, Metals & Materials Society Spring Meeting. Charlotte, North Carolina, USA. Details: TMS, Meeting Services, 184 Thorn Hill Road, Warrendale, PA 15086 USA. Tel: (724) 776-9000 x243; Fax: (724) 776-3700. Email: RLINK "mailto:mtgserv@tms.org" mtgserv@tms.org. Web page:http://www.tms.org/Meetings/Annual-04/AnnMtg04Home.html

15–19 35th Lunar and Planetary Science Conference (LPSC). South Shore Harbour Resort and Conference Center, Houston, TX. Details: Publications and Program Services Department, Lunar and Planetary Institute, 3600 Bay Area Blvd., Houston, TX 77058-1113.Tel: 281-486-2188; Fax: 281-486- 2125. E-mail: cloud@lpi.usra. edu

APRIL

4–7 Tenth International Symposium on Experimental Mineralogy, Petrology and Geochemistry (EMPG X). Frankfurt, Germany. Details: EMPG X Organizing Committee, Institute of Mineralogy, Johann Wolfgang Goethe-University Frankfurt, Senckenberganlage 28, D-60054 Frankfurt/Germany. Phone: +49 69- 798 22 111. fax: +49-69-798 280 66. E-mail: empgX@uni-frankfurt.de. Web page:http://www.empgx.uni-frankfurt.de/

12–16 Materials Research Society Spring Meeting, San Francisco, CA. Details: Telephone (724) 779-3003; Fax (724) 779-8313. Email: info@mrs.org. Web page: http://www.mrs.org/meetings/future_meetings. html

18–21 AAPG Annual Convention and Exhibition. Dallas, TX USA. Details: Phone: 1-800-364-2274 (USA and Canada) or 918-560-2679. Fax: 1-800-281-2283 (USA and Canada) or 918-560-2684. E-mail: convene@aapg.org. Web page: http://www.aapg.org/meetings/dallas04/index.html

18–21 106th Annual Meeting & Exposition of The American Ceramic Society. Indianapolis, IN. Details: Meetings Dept.. tel. 614/794-5868. Web page: http://www.acers.org/meetings/AM2004/default.asp

25–30 European Union of Geosciences First General Assembly. Nice, France. Details: EGU Office, Max-Planck-Str. 13, 37191 Katlenburg-Lindau,

Germany. Phone: +49-5556-1440. Fax: +49-5556-4709. Email: egu@copernicus.org. Web page: http://www.copernicus.org/EGU/ga/egu04/index.html

25–30 14th International Zeolite Conference. Cape Town, South Africa. Details: Organising Secretariat: 14th IZC Mrs Meg Winter, c/o Department of Chemical Engineering, University of Cape Town, Rondebosch , 7701, South Africa. Tel: +27 21 650 2752; Fax: +27 21 689 7579. Email: izc@chemeng.uct.ac.za. Web page:http://www.14izc.org.za/

May

12–14 Joint annual meeting of the Geological Association of Canada, the Mineralogical Association of Canada and the Society of Economic Geologists. Brock University St. Catharine's, Ontario. Web page:http://sparky2.esd.mun.ca/~gac/ANNMEET/annmeet.html

17–21 Joint Meeting: AGU and the Canadian Geophysical Union (CGU). Montreal, Canada. Details: AGU Meetings Department, 2000 Florida Avenue NW, Washington, DC 20009 USA. Phone: +1-202-462-6900; Fax: +1-202-328-0566. Email: meetinginfo@agu.org. Web page:http://www.agu.org/meetings

June

6–12 14th V.M. Goldschmidt Conference. Copenhagen, Denmark. Details: Goldschmidt 2004, Geological Institute, University of Copenhagen, ØsterVoldgade 10, DK-1350 Copenhagen K, Denmark. Fax: +45 33 14 83 22. E-mail: goldschmidt@geol.ku.dk. Web page: http://www.goldschmidt2004.dk/

26–28 5th International Conference on: Mineralogy & Museums. Paris, France. Details: Conference Secretariat, SFMC, Tour 16, Casier 83, 4, place Jussieu, 75252 Paris Cedex 05 FRANCE. Web page: http://www.ensmp.fr/Fr/Actualites/Agenda/PDF/MM5.html

June 27–July 2 11th International Symposium on Water-Rock Interaction. Saratoga Springs, NY, USA. Details:Dr. Susan Brantley, Secretary General, Dept. of Geosciences, The Pennsylvania State University, 239 Deike Building, University Park PA USA 16802. Phone: 814-863-1739 FAX: 814-863-8724. E-mail: ConferenceInfo2 @outreach.psu.edu. Web page: http://www.outreach.psu.edu/C&I/WRI/

August

20-28 32nd International Geological Congress (IGC). Florence, Italy. Details: Newtours, Via A. Righi, 8-50019 Sesto Fiorentino FIRENZE-ITALY. Tel/Fax +39 055 33611; fax +39 055 3361350. E-mail: secretariat @32igc.org. Web page: http://www.32igc.org/

September

4-8 5th European Conference on Mineralogy and Spectroscopy (ECMS). Vienna, Austria. Details: Prof. Dr. Anton Beran, Institut für Mineralogie und Kristallographie, Universität, Althanstr. 14, A-1090 Wien, Österreich. E-mail: mineralogie@univie.ac.at. Web page: http://www.univie.ac.at/Mineralogie/EMU/welcome.htm?emusch_6.htm~body

11–19 Tectonics, Magmatism and Metallogeny of Active Continental Margins (Interim International Conference on Metallogeny of the Pacific Northwest). Vladivostok, Russia. Details: Far East Geological Institute, Far Eastern Branch of Russian Academy of Sciences, 159, Prospekt 100-letiya, Vladivostok, 690022 Russia. Tel. +7(4232)31-87-50; Fax: +7(4232)31-78-47. E-mail: iagodconf@fegi.ru/ or fegi@online.marine.su. Web page: http://www.fegi.ru/IAGOD/

19–22 8th International Congress on Applied Mineralogy (ICAM 2004). Aguas de Lindoia, Sao Paulo, BRAZIL. Details: D. Paktunc, CANMET, 555 Booth Street, Ottawa, Ontario K1A 0G1 CANADA. Phone: +1-613-947-7061; Fax: +1-613-996-9673. Email: dpaktunc@NRCan.gc.ca. Web page: www.icam2004.org

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dues. This year Executive Director J. A. Speer used the money to cover most of the costs of: Council/committee activities, production and distribution of *The Lattice* newsletter, IMA and AGI dues and contributions, receptions, subscription renewals, election ballots, insurance, travel expenses, and administrative overhead. These expenses summed to ~$95K in 2002. Because the dollar amounts from annual dues continue to lag behind the total annual costs of the activities listed above, it has become necessary to increase dues for membership in MSA. I have recommended, and the MSA Council has concurred, that dues for regular members should be raised from $50 to $55 per year. Dues for student members will remain at $5/yr.

• It is important to recognize that annual MSA budgets are guided by the following policies and considerations. (1) Subscription rates for the *American Mineralogist* are assigned according to estimated "first-copy costs" and "last-copy costs." The former are borne entirely by institutional subscribers, and include expenses from, first, production of the American Mineralogist, and books that are included in the subscription, and second, any costs that are incurred due to website set-up. Last-copy costs are expenses associated with printing and mailing journal issues and books to both institutional and member subscribers. (2) In preparing annual MSA budgets, the MSA Council and MSA treasurers have traditionally adopted conservative estimates of income, and liberal estimates of expenses. (3) Future income and expense figures are approved by the MSA Council 13-14 months prior to the end of the upcoming year. Many values are known within narrow limits at the time they are set. However, others are little more than educated guesses (hence the policy of adopting conservative estimates of income and liberal estimates of expenses). Chief among the "guesstimates" are: (a) costs stemming from the production and reprinting of RiMG volumes (each new RiMG volume costs ~$30K to produce, costs for reprinting a volume generally range from $5K to $10K); (b) the timing of payments made to cover the costs of printing and reprinting RiMG volumes (large payments made late in the calendar year artificially inflate annual expenses because counterbalancing income from sales of the books shifts to future budgets); and (c) income from sales of RiMG volumes, and institutional subscriptions to the *American Mineralogist*. These uncertainties cause budgets to fluctuate significantly from one year to the next.

• MSA's investments held in its Roebling, Endowment, Kraus, Mineralogy/Petrology and Outreach Funds declined 18.5% in total value during 2002. While this is not a happy development, it is also no cause for alarm. The Society's carefully constructed financial framework is designed to with-

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stand economic downturns, both byprudent diversification in MSA's portfolio of investments, and from the longstanding policy that annual operating expenses and income should be closely balanced. In a given year, MSA's operating expenses are typically ~$30K higher than regular income from dues, journal subscriptions, book sales, fund investments, miscellaneous services provided to other societies, etc. This shortfall is covered by transferring "extra" money from the Roebling and Endowment Funds to the Society's annual operating budget. In 2002, ~$77K was transferred from these two funds into the annual operating budget. This figure is significant in relation to the total value of the two funds at the end of 2002, which was ~$1397K. Dividing $77K by $1397K, it is evident that the monetary transfers from the Roebling and Endowment Funds during 2002 represent ~5% of the total value of the two funds at the end of 2002. This percentage is slightly higher than in past years, due partly to a decrease in the total value of the two funds between December, 2001, and December, 2002. However, it should be borne in mind that, in the recent past, both funds grew at an annual rate substantially greater than 5% per year. (Hence, the steadily increasing total value of the assets in the two funds through 2000.)

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