Newsletter of the Mineralogical Society of America Vol. 14, No. 4, November 1998

The Lattice

MSA AWARDS LUNCHEON AT 1998 GSA MEETING

The Mineralogical Society of America presented awards during its annual luncheon held on October 27 during the 1998 Geological Society of America meeting in Toronto, Ontario, Canada.

C. Wayne Burnham was awarded the Roebling Medal, the highest honor given by MSA, for his outstanding contributions to experimental petrology. During his faculty career at Penn State, he set up and maintained an extremely productive laboratory with large volume pressure vessels designed to determine the thermodynamic properties of fluids at high temperatures and pressures. Professor Burnham reviewed his research

(Continued on next page)

Roebling Medal awarded to C. Wayne Burnham. MSA President E. Bruce Watson presented the medal to Wayne Burnham, with citationist John Holloway looking on.

GEOLOGICAL MATERIALS RESEARCH - MSA'S NEW ELECTRONIC JOURNAL

MSA has a new electronic journal - *Geological Materials Research* (GMR). With the inauguration of this web-based journal MSA becomes one of the pioneers in scientific publication on the World Wide Web. This fully reviewed and edited journal is meant to take advantage of the immediacy, the minimal cost and the rich environment that is found on the web. The journal is now online at http://gmr.minsocam.org. For more information and details on this pioneering effort, see the article on page 12 of this *Lattice*.

Also in this issue

publications and recognized a large number of graduate students, post-doctoral assistants and faculty colleagues who influenced him. John Holloway, a former student, served as citationist for this award, and offered unique perspectives on Professor Burnham. Full citations for all awards will be published in the American Mineralogist.

The Distinguished Public Service Award was awarded to the late Daniel E. Appleman for his years of service to the mineralogical and geological community. While at USGS Dan pioneered development of computer programs used to solve mineral structures. Later, while at the National Museum of Natural History, he became adept at mineral exhibit development and designed a number of exhibits, including several in the new hall of Geology, Gems and Minerals. Peggy Appleman, Dan's wife, accepted the award on behalf of her husband. E. Bruce Watson cited Dan Appleman for the service that he provided to MSA and the scientific community.

James M. Brenan was presented with the Mineralogical Society of America Award for outstanding research early in one's research career. James began his productive research at RPI with his Ph.D. dissertation entitled "Partitioning of Trace Elements Between Mantle Minerals and Non-silicate Fluids at High P-T Conditions". As a Postdoctoral Fellow at the Geophysical Laboratory, James focussed on the exchange kinetics of anions between apatite and aqueous fluids. At Lawrence Livermore National Laboratory James carried out a series of high P-T mineral-fluid experiments to define the role of aqueous fluids in subduction zone magma genesis. In his current faculty position at the University of Toronto he is continuing his research on subduction zone processes and has expanded to the geochemistry of the rhenium-osmium isotopic system. E. Bruce Watson, Ph.D. advisor, served as citationist and recognized James for his quality research accomplishments in mineralogy and geochemistry.

James Brenan receiving the MSA Award from MSA President E. Bruce Watson.

Peggy Appleman receiving the Distinguished Public Service Award medal on behalf of her late husband, Dan Appleman. The award was presented by MSA President E. Bruce Watson.

David L. Bish and Carol D. Frost were recognized by MSA for their service as 1997-1998 MSA Lecturers. During their tenure as MSA lecturers they each presented over 12 lectures at a variety of universities and college throughout the U.S. and Canada.

From the President

News about MSA publications

One thing I learned about MSA during my term as vice-president last year was how diverse the membership has become. As well as the traditional home for mineralogists, crystallographers, and petrologists, the Society has an increasing number of members who consider themselves as geochemists or materials scientists. Recently MSA has been reaching out to fields in which mineralogy has not traditionally played a significant role such as the biological and environmental sciences. Furthermore, MSA represents scientists at colleges and universities, from government laboratories, and in private industry as well as interested laypersons. This diversification is healthy and demonstrates that mineralogy, in its broadest sense, is more relevant than ever as a scientific discipline. The diversification, however, has resulted in some problems for the Society. There is a much wider range of activities that members now wish to see MSA become engaged in. This, in turn, has led some of our constituencies to feel that the Society is unresponsive to their needs. These are serious matters, and MSA's Council and officers spend much time discussing how to best represent the interests of our members. Nevertheless there is room for improvement. The first step, I believe, is better communication. I encourage MSA members with ideas for scientific, educational, or outreach initiatives to communicate them to Council members or myself. A number of MSA's most exciting new activities developed in exactly this fashion. I can always be reached either through the MSA business office or by e-mail at jferry@jhu.edu. In addition, I welcome your suggestions about how better to conduct Society business. Communication should be

Outgoing President E. Bruce Watson passing on the gavel of the MSA Presidency to the on to the new MSA President John Ferry

improved in the other direction as well. I will therefore take the opportunity of my letters in *The Lattice* to summarize some of the current discussion and recent decisions made at MSA Council meetings. I hope this will encourage dialog among MSA members in *The Lattice*, at the MSA web site, and elsewhere. My inaugural letter covers MSA publications.

One of the most significant developments is the Society's launching of a new electronic journal. Council voted to approve the name, *Geological Materials Research*, with a subtitle, *An Electronic Journal of Earth and Planetary Science*, to best represent the wide range of subjects in papers we hope to attract. The electronic journal was the idea of John Brady and Frank Spear, and I thank them for their hard work and persuasive arguments that were needed to make it happen. The electronic medium will be an important component of publishing in the future and it's essential that the Society not be left behind. I invite you to submit manuscripts to *GMR* in any of the areas sponsored by MSA; we are especially looking for material that will best take advantage of the electronic medium such as extensive color and animation. Submissions will get the same rigorous review as those to *American Mineralogist*, handled by an editorial board that includes Don Dingwell, Martin Dove, and Allan Treiman as well as Frank and John. The journal is freely accessed on line at www.minsocam.org/gmr. There will be no "page" charges. Publications will be archived on CD-ROMs that will be sent to libraries as part of their subscription to *American Mineralogist* and be sold to members at a nominal price. Look for instructions to authors for details on what and how to submit at the MSA web site.

The *Reviews in Mineralogy* (*RiM*) series continues to be one of MSA's most successful enterprises. A new volume, *Planetary Materials*, edited by Jim Papike, has just appeared and will be joined later in

1998 by *Ultrahigh-Pressure Mineralogy*, edited by Russ Hemley and Dave Mao. A volume on uranium mineralogy and geochemistry is scheduled for 1999, and a proposal for one on natural zeolites was approved by Council in October. The biggest change to *RiM* will result from a joint venture with the Geochemical Society, also approved by Council in October. The GS had planned to initiate its own reviews series modeled after *RiM*. Rather than compete with GS for topics and authors, MSA has forged an agreement with GS to replace *Reviews in Mineralogy* with a new series, *Reviews in Mineralogy and Geochemistry* (*RiMG*), that will be published with the cooperation of both societies. Each society will be responsible for choosing topics and authors and for the mechanics of publication of individual volumes. Every volume, however, will share the same series title, and the logos of both societies will appear on the cover. MSA will sell all volumes in the *RiMG* series while GS will sell only those that it produces. Revenue from the sale of each volume will go to the society that produced it. The arrangement has the advantages of capturing a greater range of topics for the series, developing a somewhat larger distribution, and strengthening ties between two societies that many of us hold dual membership in. The first contribution to the *RiMG* series from the Geochemical Society is scheduled to appear in 2000.

The Society continues to publish volumes in its successful *Monograph* series. A biography of one of MSA's most illustrious members, *N. L. Bowen and Crystallization-Differentiation*, by Professor Davis Young of Calvin College, just appeared. Don Bloss has revised and condensed his classic textbooks on optical crystallography and the spindle stage and combined them as a single book that will appear in 1999 as *Methods of Optical Crystallography*. MSA is very hopeful to publish an additional *Monograph* on environmental geochemistry. I thank Paul Ribbe for his superb stewardship of both the *Reviews in Mineralogy* and *Monograph* series.

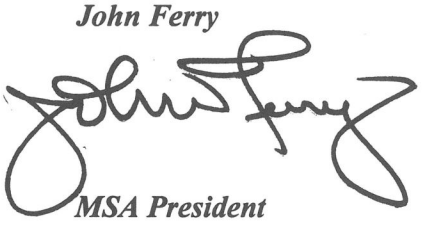
The issue that dominated discussion at MSA Council in 1998 was publication of *American Mineralogist*. I am delighted with the many improvements that the scientific editors, Anne Hofmeister and Bob Dymek, have made to our journal. They increased its size, added special issues, and captured manuscripts from non-traditional fields such as geomicrobiology – all while maintaining our traditional high scientific standards and decreasing the time between submission and publication by approximately one month. Anne and Bob tell me they anticipate continued progress on all these fronts with the goal of making *American Mineralogist* a larger and more diverse journal. The number of issues per volume will increase in 1998 to 7 with the distribution of a special issue on geomicrobiology with the regular November-December issue. The number will increase further to at least 8 in 1999 with the certain addition of 2 special issues, one in honor of Charlie Prewitt on mineral physics and the other in memory of Eugene Foord on pegmatite mineralogy. The increase in size of the journal comes with no increase in member subscription rates through 1999. Additional special issues are planned for late 1999 or 2000; these include one on the textures of igneous and metamorphic rocks, a second on mineral physics in honor of Orson Anderson, and a third on mineralogy and petrology in honor of Tony Morse and Peter Robinson. To recognize exceptional contributions to *American Mineralogist*, Anne and Bob have instituted three new annual awards: an award for the best paper in the journal, a citation to one Associate Editor for excellence in editing, and a citation one or two reviewers for excellence in manuscript review.

The aspect of *American Mineralogist* that Council wrestled with is cost rather than scientific content. Those of you who attended the MSA Business Meeting in Toronto know that MSA will have a budget deficit of more than $100,000 in 1998. Part is explained by the expense of reprinting of 7 different volumes in the *RiM* series, money that the Society eventually will recoup. A substantial fraction of the deficit, however, is structural. The structural deficit has been developing gradually over the last 10 years, in large part due to a steady decline in foreign library subscriptions (by 39% since 1990; domestic library subscriptions have declined by only 4% during the same period) and to a steady decline in student membership (by 34% since 1990; the decline in student members translates over time into a decline in professional members). In recent years the deficit has been covered by substantial gains in the value of the Society's investments. With recent developments in southeast Asia and on Wall Street, however, relying to this extent on our investments is imprudent, to say the least. Because publication of *American Mineralogist* is the single largest expense of the Society, Council looked seriously at other options for its production. We decided that simply raising subscription rates while retaining current publishing methods would lead to an unsatisfactory equilibrium between higher prices and further subscription cancellations that would make our goal of permanently expanded, more widely distributed journal financially unrealizable. True cost-saving measures

were needed. We considered two alternatives. The first was conversion to desktop publishing with page layout done in the Managing Editor's office and submission of the journal to the printer in electronic form. The second was establishing a co-publishing agreement with a commercial publisher (this is not the first time Council has considered forging a partnership with a commercial firm to publish *American Mineralogist*!) We looked at proposals from Allen Press, Blackwell Scientific, and Elsevier. The proposals from the commercial publishers had a number of attractive features: (a) Their marketing departments potentially could halt and even reverse the trend in declining foreign library subscriptions; (b) They would provide *American Mineralogist* with enhanced presence on the worldwide web, and MSA could take advantage of developments in the electronic media that all publishers are currently working very hard on; (c) They would put MSA's production of *American Mineralogist* on a more secure financial footing. The disadvantage of any arrangement with a commercial firm is potential loss of control on quality and certain loss of complete control over library subscription rates. The desktop publishing option can also solve the problem of the deficit, even with an expansion to 8 issues per year, and at the same time allows MSA to retain control over production and subscription rates. Because of the importance of control over subscription rates, Council voted to adopt the plan for desktop publishing. Declining foreign library subscriptions and web presence are issues for continued consideration. Changes to *American Mineralogist* should be invisible to readers of the journal. The first articles produced by the new procedures will be the *Letters* section in the November-December 1998 issue, and I suspect few readers will detect any differences in the appearance of the printed page. We anticipate that the changeover for the rest of the journal will be complete by the end of 1999. By mid-year 1999, we should have sufficient information on savings to determine whether desktop publishing, in fact, solves the problem of the structural deficit. I thank the scientific editors, Anne and Bob, as well as the Managing Editor, Rachel Russell, and her staff for implementing these changes that are vital to the Society's attaining its long-term scientific and financial goals.

In my next letter I will review discussions and new developments concerning MSA's participation in scientific meetings.

John Ferry



MSA President

Does your library have MSA books?

If you want your library to have available the MSA Monographs by Spear, Bloss, Young, or O'Keeffe and Hyde, the Teaching Mineralogy volume, Fifth International Kimberlite Conference Proceedings, or the Mineralogical Society Series, give them the MSA Publication Order form that appears in this issue of *The Lattice* and request that they order these books.

In Memoriam

We regret to announce the passing of the following MSA Members. The Society extends its condolences to the family and friends of these scientists.

Michael Fleischer, Life Fellow, 1937
Ernesto Galloni, Life Member, 1942
Robert Kuehn, Member, 1967
Shu-Chun Su, Member, 1982

The Lattice is published quarterly (February, May, August, November) by the Mineralogical Society of America. It is distributed to MSA members as a service. Articles and letters from readers 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 series; *The Lattice*; Membership Directory; special subscription rates for *Mineralogical Abstracts, Physics and Chemistry of Minerals, Journal of Petrology*, and *Journal of Metamorphic Geology*; 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 1999 are $80 for professional members who elect to receive *American Mineralogist* and $50 for those who elect not to receive the journal, but who do receive all other membership benefits; membership is $30 for students. Membership is on a calendar year basis. Individuals who join after January 1, 1999 will be sent all back issues of the journal for volume 84, 1999.

For additional membership information and an application, and/or to receive a price list of the Society's publications, contact the Business Office.

Institutions may subscribe to the 1999 volume of *American Mineralogist* for the annual rate of $350 in the US, and $360 in all other countries. The subscription price includes any new volumes of the *Reviews in Mineralogy* series published during the calendar year of the subscription. Payment must be received in full before a subscription will be started.

Announcements from the Council

1. Council voted to normally limit the number of MSA members elected to fellowship to 0.5% of the membership annually. Currently this corresponds to 10 new fellows per year. The change puts MSA's procedures more in line with those of other major scientific societies such as the American Geophysical Union and the American Association for the Advancement of Science.

2. MSA will now present a *Reviews in Mineralogy* volume rather than a 1-year subscription to *American Mineralogist* with its Undergraduate Award. There are two motivations for the change. First, *RiM* volumes are probably more accessible to most undergraduates than issues of *American Mineralogist.* Second, the subscriptions historically have caused the MSA business office a headache because the students' addresses typically change during the year after the award is made. MSA requests that each student confer with his or her faculty sponsor and choose a *RiM* volume they would like to receive prior to applying for the award. The name of th *RiM* volume must be included by the faculty sponsor wi.. the application.

3. In past years a few applications for grants from the E. H. Kraus Crystallographic Research Fund and to the Mineralogy/Petrology Research Fund have been exchanged between the two applicants pools based on which group the committee members believed the subject matter was most appropriate for. This has led to some confusion. In the future, therefore, proposals submitted for an award from the E. H. Kraus Crystallographic Research Fund will only be considered by the Crystallography Research Grant Committee; proposals submitted for an award from the Mineralogy/Petrology Research Fund will only be considered by the Mineralogy/Petrology Research Grant Committee. Applicants should carefully consider which fund is more appropriate to their proposed research.

Notes from Washington

• I made a mistake in this column for the August, 1998 *Lattice*. The MSA Council has voted to increase dues for 1999. Member dues will be $50 for 1999. However, subscriptions to *American Mineralogist* will remain at $30, and the student dues will also remain at $30.

MSA membership renewals will be mailed shortly. You can save your Society money by renewing before the end of the year. If you reside overseas and are interested in faster delivery of the *American Mineralogist*, consider ordering International Surface Airlift service (ISAL) for the journal when you renew your member subscription. It costs $40 additional and will reduce shipping time from several months to 2-3 weeks, depending on your location.

• Several MSA members have responded to the call for donations of earlier MSA publications so that we have reference copies of early MSA publications We appreciate donations received from Bill Carlson, David A. Hewitt, William T. Holser, Edward J. Olsen, Charles T. Prewitt, Priestley Toulmin, and Margaret S. Woyski. We now have a much more complete set of *Reviews in Mineralogy* in different printings and editions, MSA Special Papers, *American Mineralogist Indexes*, and both a bound and unbound set of *American Mineralogist* since volume 38. The office still needs unbound and bound *American Mineralogist* volume 1-32, and unbound issues for volumes 33 through 37. It appears that complete sets are rather rare for these early volumes, so we appreciate receiving even single numbers of scattered issues before volume 37. MSA may have to complete these volumes issue by issue.

• MSA has three new publications available. These are described elsewhere in this issue, and can be ordered either with the order form included here or on your membership renewal. There will be a fourth new publication, volume 37 of *Reviews in Mineralogy* to accompany the Ultrahigh Pressure Mineralogy short course to be held at the Univer sity of California - Davis, December 4-6, 1998. Becau this is not printed yet, we have not included it on the order forms, but be on the look-out for it in December 1998.

• Members who have ordered *Mineralogical Society Series* volumes from MSA during the last year know that we have had difficulty in fulfilling orders for some numbers. Chapman & Hall, the publishers of these books for the Mineralogical Society, was purchased by Elsevier. Unfortunately the North American distributor for Chapman & Hall did not continue in this capacity and did not wish to order any more stock in the fear that it would get stuck with it. MSA had to wait 8 months for the sale to take place, and another several months for Kluwer, the North American distributor for Elsevier, to come up to speed. It has been only in the last month the books were reordered for MSA and we are waiting for the shipments of back-ordered books from Europe.

• A book review on *Reviews in Mineralogy* volume 33, Boron by D. A. C. Manning was published in *Mineralogical Magazine*, 1998, page 134-135. If you do not yet own a copy, consider buying one using the publication order form in this issue.

J. Alex Speer, MSA Administrator
j_a_speer@minsocam.org

NEW PUBLICATIONS

An MSA *Monograph* on the scientific work of N. L. Bowen and an MSA *Reviews in Mineralogy* volume on planetary materials are two new MSA publications. MSA has also finally received copies of the latest *Mineralogical Society Series* volume on fluid-enhanced fluid transport. All of these can be ordered using the order form that appears elsewhere in this issue.

The new monograph is titled ***N. L. Bowen and Crystallization Differentiation: the Evolution of a Theory***. Because Bowen is widely regarded as the premier igneous petrologist of his era and because his views about the origin of the diversity of igneous rock types still influence petrogenetic theorizing, this book should be of considerable interest to all students of igneous petrology.

The book focuses on the heart of Bowen's distinguished scientific career, namely, the theory of fractional crystallization, or, as he called it, crystallization-differentiation, and shows how Bowen developed his views and modified them in response to critics throughout his distinguished career. The monograph discusses Bowen's geological education, traces the gradual emergence of the theory from his early experiments at the Geophysical Laboratory, reviews the preliminary statement of the theory in Bowen's classic 1915 paper on The Later Stages of the Evolution of the Igneous Rocks, and examines the reaction of early critics of the theory (such as Reginald Daly and Frank Grout) and Bowen's response to his critics. Subsequent chapters explore the impact of Bowen's departure for Queen's University and his return to the Geophysical Laboratory upon the direction of his scientific work as well as his theoretical work on the reaction principle, assimilation, and ultrabasic rocks that culminated in the publication of his landmark book, The Evolution of the Igneous Rocks in 1928. The text then introduces the controversy about the sole sufficiency and the ultimate goal of fractional crystallization that was brewing during the 1920s with Bowen's Geophysical Laboratory colleague, Clarence Fenner, and follows it through the 1930s when Bowen and Schairer were conducting experiments on iron-bearing silicate systems and on petrogeny's residua system. This section also discusses the impact of the discovery of the Skaergaard Intrusion on ideas about the course and goal of fractionation. The final sections review Bowen's efforts to introduce experimental igneous petrology into the academic world at the University of Chicago between 1937 and 1946 as well as Bowen's role in the granite controversy in the 1940s and his collaboration with Tuttle on hydrothermal experiments on magnesian silicates and the granite system. The book concludes with a consideration of Bowen's stature as a scientist and of the current status of his theory.

The text gives the reader glimpses into Bowen's personality, offers insight into the effects that his various career moves exerted on his scientific career and on the course of igneous petrology, and presents perspectives on Bowen's scientific philosophy that combined insights from theoretical physical chemistry, rigorously controlled experiment, and field evidence in order to achieve a coherent theory of diversity. The author is Davis A. Young, Professor of Geology at Calvin College, Grand Rapids, Michigan. It is a softbound book with 276 pages, including a subject and name index. The cost is US$12 for members and US$16 for nonmembers. ISBN 0-939950-47-2

The new *Reviews in Mineralogy* Volume 36 is titled ***Planetary Materials*** and is edited by J. J. Papike. This book represents a comprehensive coverage of the mineralogy and petrology of samples of the Moon, Mars, 4 Vesta, Asteroid Belt, and Interstellar Dust Particles. After an introductory chapter on the available planetary sample suite and their origin environments, each type of planetary material is covered in its own chapter. The volume concludes with a chapter on comparative mineralogy among the planetary suite. Unlike other Reviews, this volume has a comprehensive subject and sample index. This is the largest Reviews volume yet at 1059 pages and over 159 halftones. However, it is not as physically large as the Boron volume because a thinner, opaque paper was used. The cost is US$30 for members and US$40 for nonmembers. ISBN 0-939950-46-4

The newest *Mineralogical Society Series* is volume 8 titled **Deformation-enhanced Fluid Transport in the Earth's Crust and Mantle** and is edited by M. B. Holness. It contains 11 review and research articles united by the theme of deformation-enhanced fluid transport. Topics include permeability of non-deforming rock; movement of basaltic melts in the mantle; segregation, ascent, and emplacement of granitic melts in the crust; extraction and flow through the crust of volatile fluids produced during metamorphic events; and the movement of aqueous fluids through fractured rocks in the near surface. It is a hardbound book with 333 pages. The cost is US$91.50 for members and US$122 for nonmembers ISBN 0-412-75290-5

Report of the Secretary for 1998

The seventy-ninth annual business meeting of the Society was held on October 25, 1998 at the Sheraton Centre, Toronto, Ontario, Canada in conjunction with the annual meeting of the Geological Society of America. This meeting is conducted directly following the Presidential Address each year (same place as the address, so it is easy to find); neither of these events is to be missed, so add it on your calendars for next year!

This report represents a substantial distillation of ca. 36 hours of council meetings and numerous e-mail communications concerning the Society's business (and other notable items) that has occurred over the past year. Council meets, in person, three times per year to discuss various operations and actions of the Society. The first council meeting of 1998 was held the evening of 19 October 1997 in Salt Lake City, UT; the second was 31 May 1998 in Boston, MA; and the third 25 October 1998 in Toronto, Ontario, CA. Meetings are held in conjunction with GSA and Spring AGU and are open to members.

Results of the 1999 Election

Voting for the 1999 Society officers and council members occurred during the summer of 1998 by mail. Members elected to office for the 1999 term are:

President: John Ferry
Vice President: William Carlson
Treasurer: Brooks Hanson (1999-2001)
Secretary: Barb Dutrow (1998-2000)
Councilor: Michael Carpenter (1999-2001)
Councilor: Sorena Sorensen (1999-2001)

As is customary, it was a very close race. Approximately 31% of the membership voted (591). A special thanks you to those who ran for office! Votes were certified by Tellers Kenneth Livi and Richard Hervig.

Membership Statistics:

As of Sept. 30, the total membership for the Society is 1938, eighty-six less than in the previous year. There are: 1120 regular members; 71 life members; 305 fellows; 141 life fellows; 3 honorary fellows; 23 senior members; 52 senior fellows and 223 students.

These statistics indicate that both our student membership and regular membership has continued the decline of the previous few years. MSA needs your help in recruiting new members and spreading the word to your students and colleagues about MSA, it is a great deal!

1999 Medallists and Research Grant Recipients

MSA is pleased to announce and congratulate our 1999 Medallists and Grant Recipients.

Professor Ikuo Kushiro, University of Okayam Japan, is the 1999 Roebling Medallist; Dr. Yingwei Fe Geophysical Laboratory, Carnegie Institute of Washington, Washington, D.C. is the 1999 MSA Award recipient; and Professor Robert A. Howie, Matlock, United Kingdom, is our 1998 Distinguished Public Service Award recipient

The 1999 Crystallographic Research Grant is awarded to Christopher L. Cahill, Department of Chemistry, SUNY-/Stony Brook, for his work on "Time resolved, in situ x-ray studies of precipitation, transformation and oxidation reactions in the hydrothermal Fe-S system."

The 1999 Mineralogy/Petrology Research Grant is awarded to Wim van Westrenen, Department of Earth Sciences, University of Bristol, for his work on "Garnet-melt partitioning of highly siderophile elements measured by laser ablation microprobe".

We encourage you all to nominate future Medallists.

Also, the MSA offers the American Mineralogist Undergraduate Awards to outstanding students. Faculty, don't forget to nominate your students. They r ceive a prestigious certificate and a RiM volume.

Members elected to Fellowship

New fellows of the MSA are: Masaki Akaogi, Gilberto F. Artioli, Philippe A.V. Gillet, Carlo Maria Gramaccoili, Joel D. Grice, and Bjorn Winkler.

Nomination procedure for fellowship has been simplified and can be found on the MSA website. Members, remember you can nominate fellows.

Meetings

Much discussion this year has centered on meeting formats and times for the MSA annual meeting. This is a difficult issue in light of the increasing diversity of the membership and the decreasing time and funds for travel. MSA is considering alternative formats in which to hold its annual meeting. If you have opinions on this, please voice them to one of the council members or to a member of the meetings committee.

MSA at GSA

MSA plays a significant role in the annual GSA meeting, the current home of the annual meeting. Since 1982, MSA has averaged 239.6 abstracts per meeti since 1982 (this is the number reviewed by MSA JTPC reps, calculated by L. Anovitz). This year 255 abstracts were reviewed, representing 10.7% of the to-

tal abstracts presented, a slight decrease from 292 last year but nearing the average for the past 15 years.

This year MSA sponsored a symposium and 14 technical sessions including poster sessions; igneous petrology-3, metamorphic petrology-3, experimental petrology-2, mineralogy/crystallography-2, volcanology-2. The symposium, in honor of two MSA fellows, was "Experimental Petrology and Applications: A tribute to 35 years of research in the Goldsmith-Newton Laboratory at the Univ. of Chicago" organized by A. Koziol, D. Perkins and D. Pattison.

President E. Bruce Watson's Presidential Address to the Society, entitled ""Lithologic partitioning" of Fluids and Melts", was presented Tuesday, 27 October 1998. Immediately following the address, President Watson called the annual business meeting to order. Verbal, and most importantly, short reports were presented to the membership by the MSA Secretary and Treasurer. After discussion by the members, the meeting was adjourned to the joint MSA/GC social event. This popular reception continued the tradition of bringing the MSA Tuesday at GSA to a great conclusion. Terrific food, libations and a wealth of colleagues, provide a stimulating atmosphere in which to discuss common interests, science and the future of the Society.

Short courses

This year MSA offered two short courses: an updated "Health Effects of Mineral Dust" which was to be held prior to the International Mineralogical Association (IMA) meeting in Toronto, Ontario, Canada, in August. Unfortunately, due to low enrollment this course was cancelled.

A second short course, Ultrahigh Pressure Mineralogy, is scheduled to precede the Fall meeting of the American Geophysical Union in San Francisco, CA. It will be held December 4-6, 1998 at the University of California - Davis. Convenors are Ho-kwang Mao and Russell J. Hemley of the Geophysical Laboratory.

Future short courses include: a Uranium Mineralogy short course to be held prior to the 1999 Denver GSA meeting organized by Peter Burns and Robert Finch, and the Sulfate Mineralogy short course at Lake Tahoe, CA, prior to the 2000 Reno GSA meeting organized by Charles Alpers. Additional short courses being considered will be held in conjunction with other national as well as international meetings and are soon to be present in Europe. Any of you wishing to propose a short course can contact our short course committee chair, Raymond Jeanloz.

Publications:

Three new publications have appeared on the MSA shelves that you will **NOT** want to be without.

A new monograph entitled "N. L. Bowen and Crystallization Differentiation: the Evolution of a Theory" was written by Davis A. Young. The book focuses on the heart of Bowen's distinguished scientific career, and shows how Bowen developed and modified his views throughout his distinguished career.

Two new RiM volumes are available: Volume 36-Planetary Materials, edited by Jim Papike and Volume 37 - Ultrahigh Pressure Mineralogy, edited by Russell Hemley and David Mao.

The MSA Directory will now be sold, *to members only*, for $15. It contains both a name and geographical index. For those who prefer a paperless copy, you can always visit the MSA website. And, members you can easily update your information.

RiM will take on a new appearance as of the millennium: the RiM&G. The Geochemical Society has proposed a joint RiM venture where MSA will join forces to produce the Reviews in Mineralogy and Geochemistry volumes. They will maintain the high quality and low cost hallmark of the series.

As detailed in the President's report, you will also be receiving more in your American Mineralogists than before! Special issues have returned! Several are now well underway: a Geomicrobiology issue, a Prewitt volume concentrating on mineral physics, a Foord issue on pegmatites and a Mineral Textures issue.

MSA now has a totally electronic journal, Geological Materials Research, spearheaded by two of our energetic members, John Brady and Frank Spear. Members are encouraged to submit articles that take full advantage of a web-based format such as visualization, simulations, etc.

Lecture Series

One of the primary outreach activities of the MSA continues to be the ever-popular MSA lecture series. Many more requests are received than can be accommodated by our two yearly stellar speakers.

The 1998-99 MSA Lecturers are Dr. Donna Whitney, University of Minnesota, Minneapolis, MN and Dr. George Guthrie, Los Alamos National Lab, Los Alamos, NM.

Donna Whitney will be lecturing on:

1. *Petrology and global warming: How igneous and metamorphic processes change world climate,*
2. *Garnet tectonics: What small mineral grains reveal about large mountain belts.*

George Guthrie will offer lectures entitled:

1. *Mineralogy in the lung: Geochemical mechanisms of mineral-induced disease*
2. *London bridges falling down? Mineralogy may hold the key.*

3.Discovering the mysteries of fine-grained materials: TEM and XRD of opal and clay.

We wholeheartedly thank them for their time and effort to spread the intriguing, as well as useful, aspects of mineralogy around North America, and Guy Hovis for coordinating the lectures.

Web site

MSA has fully entered cyberspace. Continue to check MSA's new web site for up to date information on what's happening, directory listings, membership and application forms, committee members to hassle, the Lattice many weeks before it reaches you via snail mail, or to sign up for the listserve. Send any recommendations to the Outreach Committee Chair, John Brady, or the webmeister, Mark Bloom.

Necrology

It is with regret and sadness that the Society announces the deaths of the following fellows and members reported to us during the past year:

Daniel E. Appleman, Fellow, 1955
Virgil E. Barnes, Life Fellow 1945
Julian G. Blakely, Member, 1972
Laszlo Dudas, Life Member, 1952
Joze Duhovnik, Life Member, 1946
Eugene E. Foord, Life Fellow, 1972
Eugene B. Gross Life Member, 1943
George R. Heyl, Life Fellow, 1933
Donald R. Lewis, Fellow, 1956
G. Robert Massey, Member, 1981
Robert R. Ogilby, Member 1967
Koji Ono, Member, 1965
Ward Conwell Smith, Life Fellow, 1942
James M. S. Sun, Life Fellow, 1949

Our condolences are extended to family and friends. Anyone who wishes to prepare a memorial for publication in the American Mineralogist, please contact the Business Office, currently acting in the capacity of the memorialist.

Committees

Each year many of you serve on committees for the MSA. A special thank you to each one of you. Without your help, MSA could not undertake the many items to educate, grant money, and continue to serve. I would also like to thank Alex Speer, who keeps all of us in line and the operations of the Society running smoothly. I've no idea how we managed without.

Respectfully submitted,
Barb Dutrow
MSA Secretary

Special Session at Spring AGU Meeting in onor of S. A. Morse

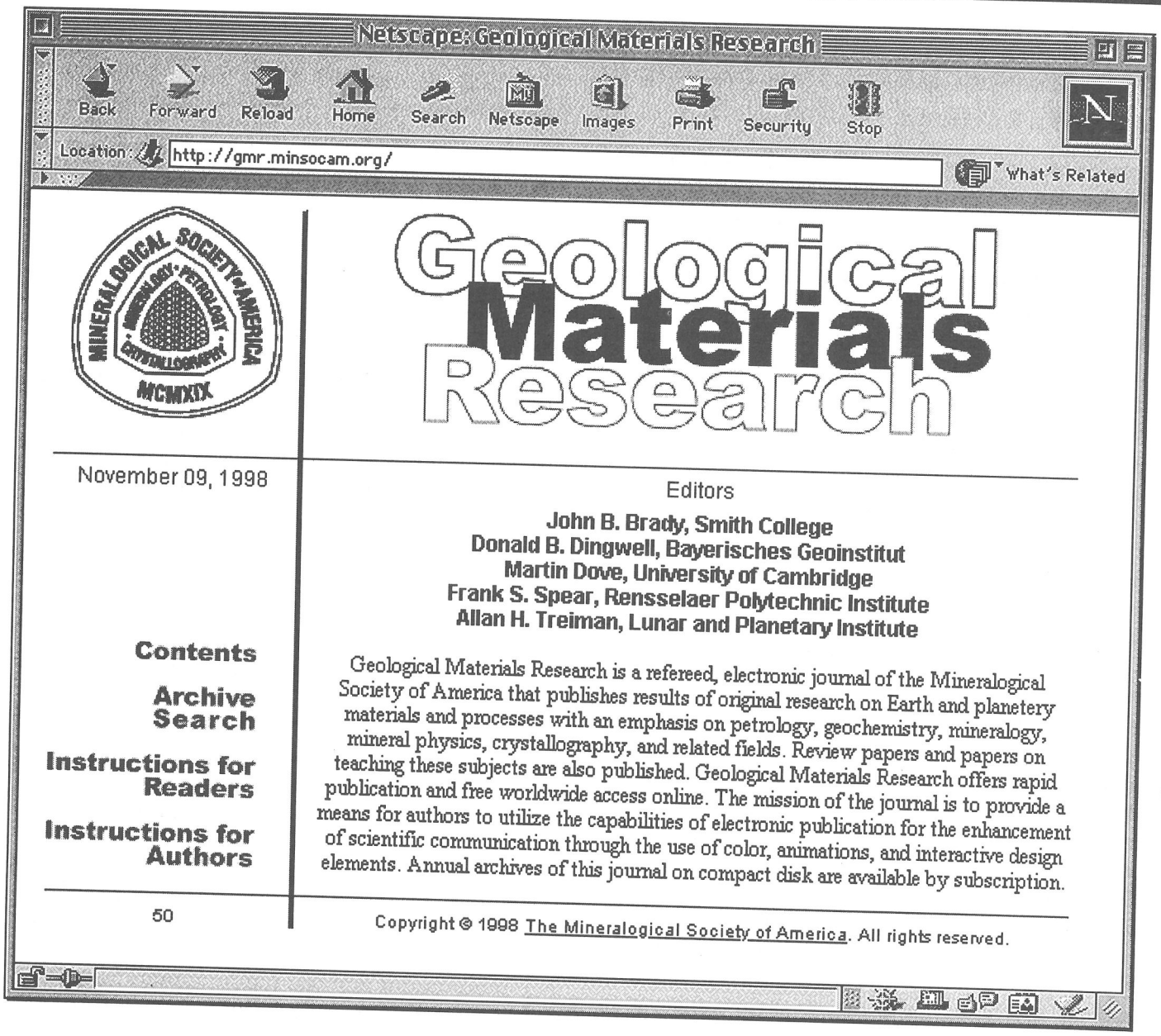
Explorations of Labrador, Layered Intrusions, Liquid-Lines of Descent, and Large (Massif) Anorthosites: A Special Session in Celebration of the Career of Stearns A. Morse"

Professor Stearns A. "Tony" Morse of the Department of Geosciences, University of Massachusetts, Amherst, has had a remarkable 40-year career in igneous and metamorphic petrology as field geologist, petrographer, experimentalist, theoretician, writer, and teacher (as well as brewer of fine beer and producer of excellent maple syrup!). From his early days charting the coast of Labrador to more recent theoretical investigations of the intricacies of magma dynamics, Tony Morse has influenced several generations of students and colleagues through his keen eye and thought-provoking writing style. Tony has made significant contributions in such diverse areas as phase equilibria of alkali feldspars, petrology of sapphirine-bearing rocks, optical mineralogy, and planetary-scale considerations of cumulus processes. His work on massif anorthosites in Labrador, which culminated in the decade-long 'Nain Anorthosite Project,' has profoundly influenced the thinking of all later "anorthositologists." His thoughtful monograph ***Basalts and Phase Diagrams*** stands as the clearest exposition of the inner workings of phase diagrams ...r written. Finally, Tony's life-long investigations of the Ki...apait layered intrusion in Labrador resulted in a series of classic papers that elegantly document one of the world's best examples of in-situ fractional crystallization of basaltic magma. This special session honors Tony Morse's career, and we invite contributions from all who have been influenced by his research and teaching. We expect the contributions to reflect the diversity of Tony's interests, and invite papers on such subjects as alkali feldspars and syenites, mineral optics, phase equilibria, massif anorthosites, layered intrusions, geology of the Nain Province, and the dynamics of cumulus magmatic systems.

Conveners:

Robert F. Dymek
Department of Earth and Planetary Sciences
Washington University, Campus Box 1169
St. Louis, MO 63130-4899
312-935-5344
bob_d@levee.wustl.edu

Brent E. Owens
Department of Geology
P.O. Box 8795
College of William and Mary
Williamsburg, VA 23187-8795
757-221-1813
beowen@facstaff.wm.edu



Geological Materials Research

MSA's new electronic journal, *Geological Materials Research* (GMR), is now online at http://gmr.misocam.org. Visit the site to see the first papers and to get a sense of some of the possibilities for this new publishing venue, including color photos, graphs, and animated images. GMR can be freely viewed by anyone with Internet access. Abstracts in html can be read by current web browsers. Papers are prepared in Portable Document Format, so to view them you will need Acrobat Reader 3.0, which is available free from Adobe Systems.

The editors invite manuscript submissions and are especially interested in papers that make good use of the electronic medium. Because all parts of the review and editing process will be conducted by e-mail, publication in GMR is likely to be more rapid than in other journals. Papers will be posted as soon as review and revision are completed. MSA members can sign up to receive e-mail announcements of paper titles as they are posted. Send your next paper to GMR and reap the communication benefits of the Internet age.

A Curiosity in Jewelry

The 128-page 8" X 11" program booklet for the 1998 season of Santa Fe Opera has a full-page colored advertisement by a local jeweler to offer (p. 32) "Necklace and Earrings in 18 karat gold, opal, tanzanite and psilomelane [sic!]" -- I wonder how many members of MSA would consider psilomelane in the same categ as opal and tanzanite.

--Kurt Servos/Menlo Park, CA
kurtservos@AOL.com

FROM THE COORDINATOR OF INTERNET RESOURCES
GEOLOGICAL MATERIALS RESEARCH

As a follow-up to John Brady's announcement on our new e-journal, Geological Materials Research, I'd like to add a few admonishments. The GMR web site is designed for (alas, requires) Netscape Navigator 4.0 or Microsoft Internet Explorer 4.0 or greater. Earlier versions of these browsers, as well as other browsers, will direct you to a page with links to download sites. Whichever browser you use, JavaScript and cookies must be enabled. There's no need for alarm with these cookies. They are temporary, contain only a random string to uniquely identify your requests, and do not record any personal information.

MEMBERSHIP DIRECTORY

A new and improved version of the Membership Directory has been installed on the MSA web site. The search and update options are expanded, and you should find the directory more intuitive and easier to use. Lessons in cross-browser and cross-platform compatibility learned from GMR are applied in the new directory, and will flow on to other areas of our web site as time permits.

A NEW HOME PAGE

At last, a new MSA home page is under development. I'm working to merge the existing abbreviated and expanded pages into a more informative, navigable, and bandwidth-friendly home page. You can expect to see the fruits of this effort around year's end. Meanwhile I'll be removing links to the existing expanded home page after this issue of The Lattice has reached the membership.

Mark Bloom
Coordinator of Internet Resources
msbloom@minsocam.org
Rocket geoScience, Inc.
(303) 772-0735

American Mineralogist's Inaugural Best Paper Award

Teng H. H. and Dove P. M. (1997) Surface site-specific interactions of aspartate with calcite during dissolution: Implications for biomineralization. American Mineralogist 82, 878-887.

It seems very fitting that the American Mineralogist's first Best Paper Award recognizes work of a highly interdisciplinary nature, bringing together aspects of crystal structure-the very foundation of mineralogy-with modern geochemistry to address molecular scale processes that bear on our understanding of the interplay between minerals and life. Teng and Dove's elegant AFM study illustrates the important roles that crystal structure and, in turn, surface structure play in governing mineral reactivity in nature. By examining the influence that organic molecules exert on step orientation and behavior during calcite dissolution, they provide some tantalizing insight to possible ways in which organisms control the formation of crystals. What stands out in their paper is the clarity with which y have documented a rapid morphological change at a mineral surface and the implications of the process for biomineralization.

DEADLINE FOR THE FEBRUARY ISSUE OF THE LATTICE IS FEBRUARY 1

Contributions may be sent to Darrell Henry via surface mail at Department of Geology and Geophysics, Louisiana State University, Baton Rouge, LA 70803 or via E-mail at glhenr@unix1.sncc.lsu.edu.

Advertisements in *The Lattice*

The Lattice accepts paid advertisements. Rates:

Ad frequency:	1 time	4 times
Ad type		*(per insertion)*
Full page:	**$500**	**$400**
Half page:	**$250**	**$200**
Quarter page:	**$125**	**$100**
Eighth page:	**$75**	**$50**

Details may be obtained from the MSA Business Office: J. Alex Speer, Mineralogical Society of America, 1015 Eighteenth Street, N. W., Suite 601, Washington D. C. 20036, Telephone: 202-775-4344, Fax: 202-775-0018, E-mail: business@minsocam.org. Only camera-ready copy of advertisements can be accepted, and should be sent directly to the MSA Business Office.

Mineralogical Society of America Short Course Announcement

URANIUM: MINERALS, CHEMISTRY AND THE ENVIRONMENT

Location: Short Course sessions are October 22 and 23, 1999 in Golden, Colorado preceding the annual GSA/MSA meeting in Denver. The sessions will be held at Holiday Inn, Denver West Village, 14707 West Colfax Avenue, Golden CO 80401. Ph: (303) 279-7611.

Convenors: Peter C. Burns, Department of Civil Engineering and Geological Sciences, University of Notre Dame, Notre Dame, IN 46556, USA, e-mail: peter.burns.50@nd.edu; Robert J. Finch, Chemical Technology Division, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439 USA, e-mail: finch@cmt.anl.gov

Registration: Forms will be provided in the next issue of *The Lattice*.

Fees:

Professional Registration:	Member	$265
	Nonmember	$345*
Student Registration:	Member	$165#
	Nonmember	$245*

* Includes MSA membership for 2000.

A limited number of scholarships will be made available to students on a competitive basis. Please e-mail peter.burns.50@nd.edu for further information.

Topics and Speakers/Authors

I. Overview

1. *Introduction* (no lecture), Robert Finch (Argonne) & Peter C. Burns (University of Notre Dame)
2. *History of Radioactivity* (no lecture), Rodney C. Ewing (University of Michigan)

II. Crystal Chemistry and Mineralogy

3. *Crystal Chemistry of Uranium*, Peter C. Burns (University of Notre Dame)
4. *Systematics & Paragenesis of Uranium Minerals*, Robert Finch (Argonne) & Takashi Murakami (University of Tokyo)

III. Isotope Systematics and Age Determination

5. *U-Pb Systematics and Age Determination*, Mostafa Fayek (UCLA) & T. Kurtis Kyser (Queen's University)
6. *Isotope Systematics of Uraninite: Stable and Radiogenic*, Mostafa Fayek (UCLA) & T. Kurtis Kyser (Queen's University)

IV. Actinide Geochemistry & the Formation of Ore Deposits

7. *Aqueous (Geo)Chemistry of Actinides*, William M. Murphy (Southwest Research Institute) & Everett L. Shock (Washington University)
8. *Geology and Genesis of U Deposits*, Jane Plant (British Geological Survey)
9. *The Oklo Natural Reactor*, Janusz Janeczek (Silesian University)

V. Environmental Aspects

10. *The impact of microorganisms on the form and distribution of uranium and other actinides*, Jillian Banfield (University of Wisconsin) & Yohey Suzuki (University of Tokyo)
11. *Environmental Remediation*, Abdessalam Abdelouas (University of New Mexico), Werner Lutze (University of New Mexico) & Eric Nuttall (University of New Mexico)
12. *Uranium Mineralogy and the Geologic Disposal of Spent Fuel*, David Wronkiewicz (University of Missouri-Rolla) & Edgar Buck (Argonne)

VI. Instrumental Techniques

13. *Spectroscopic Techniques Applied to Uranium* (no lecture), John Hanchar (University of Notre Dame)
14. *Infrared Spectroscopy and Thermal Analysis of U minerals* (no lecture), Jirí Cejka (Natural History Museum, Czech Republic)
15. *Analytical Techniques for Measuring U in Minerals and Groundwaters* (no lecture), Clive R. Neal (University of Notre Dame)
16. *X-ray Diffraction Identification of U Minerals* (no lecture), Francis Hill (University of Notre Dame)

Mineralogical Society of America Membership Application

To join the MSA, please send a completed copy of the application below, along with the required payments in U.S. funds, to the Mineralogical Society of America, 1015 Eighteenth St., NW, Suite 601, Washington, DC 20036-5274

Preferred Mailing address:

Name: _____ Telephone: _____
First Middle Last

☐ Dr. _____ Fax: _____
☐ Prof. First Line of Address
☐ Mr. _____ E-mail: _____
☐ Ms. Second Line of Address
☐ Other: Specify _____ Birth Date: _____
Third Line of Address

Membership Category: ☐ Member ☐ Life Member ☐ Student Member

Areas of Interest: (Circle main, check secondary)

[ ] 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), [ ] Topologic (Descriptive) Mineralogy (TP), [ ] Mineral Surfaces (MS), [ ] Biological-Mineral Interactions (BM), [ ] Others (Please indicate)

Personal Information:

Highest Degree earned: ☐ Doctorate ☐ Masters ☐ Bachelors ☐ No College Degree

Institution at which Highest Degree was earned _____ Year _____

Employer _____ Job Title _____

Job Function(s): _____

What other professional societies do you belong to? _____

Student Certification: (Applicants for student membership must supply the following certification of status.)

The applicant is known to me and is a bona fide student at (Name of School): _____

Address of School (Please Print): _____

_____

Faculty Member (Please print): Signature (you need not be a member of the Society):

Payment:

$ _____ enclosed (money order, check in US dollars drawn on a US bank and payable to the Mineralogical Society of America)

Please charge my: ☐ Mastercard ☐ Visa
$ _____ ☐ Diners Club ☐ American Express

Signature: _____

Card # _____

Exp. Date: _____

Cardholder: _____

1999 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.

	Member Dues	$50.00
	American Mineralogist (price to members)	$30.00
	International surface airlift service for above	$40.00
	Life Membership Dues (with journal)	$2000
	Student Member Dues (includes *American Mineralogist*)	$30.00
	Mineralogical Abstracts, published quarterly by the Mineralogical Society of Great Britain & Ireland	$44.00
	Physics and Chemistry of Minerals, published eight times a year by Springer-Verlag (*rate not yet determined)	$465
	Journal of Petrology, published twelve times a year by Oxford University Press	$340
	TOTAL	

Mineralogical Society of America

Publications Price List and Order Form

Reviews in Mineralogy (25% member discount)

___v. 08: Kinetics of Geochemical Processes **$20**
___v. 9A: Amphiboles and Other Hydrous Pyriboles - Mineralogy **$20**
___v. 9B: Amphiboles: Petrology and Experimental - Phase Relations **$20**
___v. 10: Characterization of Metamorphism through Mineral Equilibria **$20**
___v. 11: Carbonates: Mineralogy & Chemistry **$24**
___v. 12: Fluid Inclusions **$32**
___v. 13: Micas **$28**
___v. 14: Microscopic to Macroscopic: Atomic Environments to Mineral Thermodynamics **$20**
___v. 15: Mathematical Crystallography (rev.) **$24**
___v. 16: Stable Isotopes in High Temperature Geological Processes **$24**
___v. 17: Thermodynamic Modeling of Geological Materials: Minerals, Fluids, Melts **$28**
___v. 18: Spectroscopic Methods in Mineralogy and Geology **$28**
___v. 19: Hydrous Phyllosilicates (Exclusive of Micas) **$28**
___v. 20: Modern Powder Diffraction **$28**
___v. 21: Geochemistry and Mineralogy of Rare Earth Elements **$28**
___v. 22: The Al_2SiO_5 Polymorphs **$24**
___v. 23: Mineral-Water Interface Geochemistry **$32**
___v. 24: Modern Methods of Igneous Petrology: Understanding Magmatic Processes **$24**
___v. 25: Oxide Minerals: Petrologic and Magnetic Significance **$28**
___v. 26: Contact Metamorphism **$32**
___v. 27: Minerals and Reactions at the Atomic Scale: Transmission Electron Microscopy **$28**
___v. 28: Health Effects of Mineral Dusts **$32**
___v. 29: Silica: Physical Behavior, Geochemistry and Materials Applications **$32**
___v. 30: Volatiles in Magmas **$30**
___v. 31: Chemical Weathering Silicate Minerals **$32**
___v. 32: Structure, Dynamics, and Properties of Silicate Melts **$30**
___v. 33: Boron: Mineralogy, Petrology and Geochemistry .. **$32**
___v. 34: Reactive Transport in Porous Media **$32**
___v. 35: Geomicrobiology: Interactions Between Microbes and Minerals **$32**
___v. 36: Planetary Materials **$40**
___v. 37: Ultra-High Pressure Mineralogy **$32**

Monographs (25% member discount, except on shipping)

___Metamorphic Phase Equilibria and Pressure-Temperature-Time-Paths, Spear ..... **$48 + $5** shipping
___Crystallography and Crystal Chemistry, by F. D. Bloss (1971, reprinted 1994) **$32**
___Crystal Structures, Volume I, Patterns and Symmetry, by M. O'Keeffe & B.G. Hyde **$36**
___Teaching Mineralogy **$28**
___Bowen, Crystallization-Differentiation, by D.A. Young ... **$16**

Mineralogical Society Series (25% member discount)

___v. 2: High-Temp. Metamorphism... ..... **$125**
___v. 3: Stability of Minerals **$200**
___v. 4: Clay-Pore Fluid Interactions **$159**
___v. 5: Mineral Surfaces **$49**
___v. 6: Microprobe Techniques in the Earth Sciences **$56**
___v. 7: Rare Earth Minerals **$58**
___v. 8: Deformation-Enhanced Fluid Flow **$122**

Other Publications (no member discount)

___Fifth International Kimberlite Conference Proceedings (two volume set) ..... **$45** + postage: U.S.-**$3.75**/set, Canada -**$12**/set, Other-**$6.75**/set.
___Centennial History of the Geological Society of Washington, 1893-1993 ..... **$10**
___MSA Membership Directory (available to members only) **$15**

American Mineralogist - back issues

Vol.	Member	Nonmember
1-64	Contact Periodicals Service Company, 11 Main St., Germantown, NY 12526 (518)537-4700	
66-76	$3/issue, $18 vol.	$ 5/issue, $ 30 vol.
77-81	$5/issue, $30 vol.	$45/issue, $250 vol.
82	$5/issue, $30 vol.	$55/issue, $320 vol.

FOR ORDERS SHIPPED TO CANADA, Please add the following amount for postage: 1-2 books: No additional postage (via book rate), 3-5 books: $6.00 (parcel post), 6-8 books: $8.00 (parcel post), for more than 8 books, Please contact the MSA Business Office.

To Order: Indicate quantity, shipping, and cost information. Only MSA Members may take the 25% discount where noted. Prepay orders under $300. Publications may not be returned for refund or credit. Send entire form to: Mineralogical Society of America, 1015 18th Street, NW, Suite 601, Washington, DC 20036-5274. Phone: (202) 775-4344; Fax: (202) 775-0018 E-mail: business@minsocam.org

Name: _____
Address: _____
_____
_____
City: _____ State: ____ Zip: _____
Country: _____ Postal Code: _____

Payment: check in U.S. funds drawn on a U.S. bank, money order, or credit card:
☐ Visa ☐ MasterCard ☐ Diners Club ☐ American Express
Card #: _____ Exp Date: _____
Signature: _____
Print name as it appears on card: _____

A. Total for member discount books	
B. less 25% member discount (A x 0.25)	
C. Total non-discounted items	
D. Shipping (no charge for surface mail/library rate except as noted) For airmail, UPS, or invoiced orders, contact MSA	
Total (A-B+C+D)	

Meeting Calendar 1999-2000

1999

January

7-8 **Mineralogy and the Environment.** Aberdeen, UK. *Details*: J. Cotter-Howells, Dept. of Plant and Soil Sci., University of Aberdeen, Aberdeen AB24 3UU UK, Tel.44-(0)1224-272702; Fax: 44-(0)1224-272703; E-mail: j.cotter-howells@abdn.ac.uk. WWW: http://www.minersoc.org.

24-27 **Conference on Tailings and Mine Waste.** Fort Collins, Colorado *Details*: Linda Hinshaw, Dept. of Civil Engineering, Colorado State University, Fort Collins, CO 80523-1372, Tel.970-491-6081; Fax: 970-491-3584; E-mail: lhinshaw@engr. colostate.edu

February

10-12 **Dynamics of Fluids in Fractured Rocks: Concepts and Recent Advances International Symposium.** Berkeley, California. *Details*: Boris Faybishenko, Lawrence Berkeley National Laboratory, Earth Sciences Division, One Cyclotron Road, Mail Stop 90-1116, Berkeley, CA 94720. E-mail: bfayb@lbl.gov, WWW: http://www.esd.lbl.gov/witherspoon

March

15-18 **30th Lunar and Planetary Science Conference.** Houston, TX. *Details*: L. Simmons, Conference Administrator, LPI Publications and Program Services Department, 3600 Bay Area Boulevard, Houston, TX, 77058-1113. Tel.: (281)-486-2158, Fax: (281)-486-2160, E-mail: simmons@lpi.jsc.nasa.gov

April

7-8 **Hydrocarbon-bearing Inclusions in Crustal Rocks - Study Methods, Applications and Case Histories.** Galway, Ireland. *Details*: Martin Feely, Dept. of Geology, National Univ. of Ireland, Galway, Ireland. Tel. 353 091 524411 ext. 2129, E-mail: martin.feely@ucg.ie

May

6-7 **GEOVISION 99 (1st Symposium on Imaging in Geology).** Liege, Belgium. *Details*: Prof. Eric Pirard, University of Liege, Mica Geomaterials Characterization, Avenues des Tilleuls, 54, 4000 Liege, Belgium. Tel.: 32-4-3669528; Fax: 32-4-3669520; E-mail: eric.pirard@ulg.ac.be; WWW: http://www.lgih.ulg.ac.be/geovision.

21 **9th Meeting of the Russian Mineralogical Society.** St. Petersburg, Russia. *Details*: Dr, Mikhail Morozov, 9th Mineralogical Society Meeting, Russian Mineralogical Society, 21st line 2, 199026, St. Petersburg, Russia. Tel.: 7 (812) 218-86-40, Fax: 7 (812) 327-73-59, E-mail: vmo@mineral.ras.spb.ru or meeting@mvm.usr.spmi.spb.ru, WWW: http://www.ripn.net/relarn/members/vmo/conf/m99e.html.

26-28 **Geological Association of Canada - Mineralogical Association of Canada Joint Annual Meeting.** Sudbury, Ontario. *Details*: GAC-MAC Sudbury 1999, Dept. of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada P3E 2C6, Tel.: 705-673-6572; Fax: 705-673-6508; E-mail: gacmac99@nickel.laurentian.ca; WWW: http://www.laurentian.ca/www/geology/gacmac99.htm.

May-June

31-4 **AGU Spring Meeting.** Boston, MA. *Details*: AGU Meeting Department, 2000 Florida Ave., NW Washington, DC 20009. Tel.: 202-462-6900: Fax: 202-328-0566, E-mail: meetings@kosmos.agu.org, WWW: http://www.agu.org/meetings.

June

21-24 **XV ECROFI (European current research on fluid inclusions).** Potsdam, Germany. *Details*: Mrs., Claudia Rohl, GeoForschungsZentrum Potsdam, Telegrafenberg, D--14473 Potsdam, Germany. Tel.: 49(0) 331 288 1436; E-mail: ecrofi@gfz-potsdam.de.

21-24 **International Gemological Symposium.** San Diego, CA. *Details*: Dona Dirlam, Gemological Institute of America, 5345 Armada Dr., Carlsbad, CA 92008, Tel.: (760) 603-4154, Fax: (760) 603-4256, E-mail: ddirlam@gia.edu.

21-27 **GSA Penrose Conference: Terrane Accretion along the Western Cordilleran Margin: Constraints on Timing and Displacement.** Seattle and Winthrop, Washington. *Details*: J. B. Mahoney, Department of Geology, University of Wisconsin - Eau Claire, WI 54702-4004, E-mail: mahonej@uwec.edu

June-July

26-1 **36th Clay Minerals Society Annual Meeting.** West Lafayette, Indiana. *Details*: Patricia Eberl, Manager, The Clay Minerals Society, P. O. Box 44-5, Boulder, CO 80306. Tel.: 303-444-6405; Fax: 303-444-2260; E-mail: peberl@clays.org.

July

7-18 **Inside Silicic Calderas - CEV Field Workshop.** Birmingham, UK. *Details*: Michael Brantly, Geology Dept.,

Leicester University, University Road, Leicester LE1 7RH, UK. Tel.: +44 116 252 3647 Fax: +44 116 252 3647, E-mail: mjb26@ie.ac.uk.

11-16 **62nd Annual Meteoritical Society Meeting.** Johannesburg, South Africa. *Details*: W. U. Reimold, Dept. of Geology, University of Witwatersrand, Private Bag 3, P.O. Wits 2050, Johannesburg, South Africa, Tel.: 27 11 716 2946, Fax: 27 11 339 1697, E-mail: 065wur@cosmos.wits.ac.za

12-16 **Orogenesis in the Outback - A Look at Cyclicity in Orogenic Belts** (Specialist Group in Mineralogy, Geochemistry and Petrology; Geological Society of Australia), Alice Springs, Australia. Details: Jodie Miller (jmiller@orion.earth.monash.edu.au); Ian Buick (I.Buick@latrobe.edu.au). WWW: http://www.earth.monash.edu.au/sggmp/SGGMP.html

19-30 **22nd General Assembly of the International Union of Geodesy and Geophysics.** Birmingham, UK. *Details*: IUGG99, School of Earth Sciences, The University of Birmingham, Edgbaston, Birmingham BIS 2TT, UK. Fax: 44121414 4942, E-mail: IUGG99@bham.ac.uk. WWW: http://www.bham. ac.uk/IUGG99/.

22-25 **SGA-IAGOD 1999.** London, UK. *Details*: C. J. Stanley, Dept. of Mineralogy, Natural History Museum, Cromwell Road, London SW7 5BD. E-Mail: cjs@nhm.ac.uk

August-September

28-1 **Gemeinschaftstagung - annual meeting of the German and Austrian Mineralogical Societies together with the Hungarian Geological Society, Vienna, Austria**. *Details*: Minwien 1999, Institute of Petrology, University of Vienna, Geozentrum, Althanstaße 14, A-1090, Vienna, Austria, E-mail: mineralogie@univie.ac.at or WWW: www.univie.ac.at/Mineralogie/Oemg.htm.

31-2 **Exhumation of Metamorphic Terranes (Metamorphic Studies Group).** Rennes, France. *Details*: Michel Ballevre (michel.ballevre@univ-rennes1.fr), Simon Cuthbert (cuth-ce0@wpmail.paisley.ac.uk), Giles Droop (Giles.droop@man.ac.uk)

August

4-13 **XVIII International Union of Crystallography Congress and General Assembly.** Glasgow, Scotland. *Details*: G. Houston, Northern Networking Congress Central Office, Bellway House, 813 South Street, Glasgow, G14 0BX, Scotland, UK, E-mail: crystal@glasconf.demon.co.uk, WWW: http://www.chem.gla.ac.uk/iucr99/.

September

4-10 **Euroclay 1999.** Banska Stiavnica, Slovakia. *Details*: WWW: http://www.ing-pan.krakow.pl.

11-16 **European Research Conference - The Deep Earth: Theory, Experiment and Observation.** Acquafredda di Maratea, Italy. *Details*: John Brodhoft, University College London, London, UK or George Helffrich, University of Bristol, Bristol, UK.WWW:http://slamdunk.geol.ucl.ac.uk/~brodholt/euroconference.html.

12-15 **Third International Workshop on Orogenic Lherzolites and Mantle Processes.** Pavia, Italy. WWW: http://www_crystal.unipv.it.

13-16 **Modern Approaches to Ore and Environmental Mineralogy**, Pretoria, South Africa. *Contact*. Dr. M. Cloete, Council for Geoscience, Private Bag X112, Pretoria 0001, South Africa, mcloete@geoscience.org.za, www.geoscience.org.za

October

25-28 **Geological Society of America.** Denver, Colorado. *Details*: Becky Martin, GSA Meetings Dept. Boulder, CO 80301-9140. Tel.: (303)-447-2020, Fax: (303)-447-1133. WWW: http://www.geosociety.org/meetings/index/htm.

December

13-17 **AGU Fall Meeting.** San Francisco, CA. *Details*: AGU Meeting Department, 2000 Florida Ave., NW Washington, DC 20009. Tel.: 202-462-6900: Fax: 202-328-0566, E-mail: meetings@kosmos.agu.org, WWW: http://www.agu.org/meetings.

2000

May-June

30-3 **AGU Spring Meeting.** San Francisco, CA. *Details*: AGU Meeting Department, 2000 Florida Ave., NW Washington, DC 20009. Tel.: 202-462-6900: Fax: 202-328-0566, E-mail: meetings@kosmos.agu.org, WWW: http://www.agu.org/meetings.

July

16-22 **6th International Council for Applied Mineralogy (ICAM 2000).** Gottingen and Hannover, Germany. *Details*: ICAM 2000 Office, P. O. Box 510153, D-3063' Hannover, Germany. WWW: http://www.bgr.de/ICAM2000

18-22 **International Association of Volcanology and Chemistry of the Earth (IAVCEI) General Assembly 2000.** Bandung, Indonesia. *Details*: Secretariat, Volcanological Survey of Indonesia, Jalan Diponegro 57, Bandung 40122, Indonesia. Tel.: 62-22-772606, Fax: 62-22-702761, E-mail: iavcei@vsi.dpe.go.id WWW: http://www.vsi.dpe.go.id/iavcei.html.

August

6-17 **31st International Geological Congress.** Rio de Janeiro, Brazil. *Details*: Secretariat Bureau, 31st International Geological Congress, Av. Pasteur, 404, Anexo 31 IGC, Urca, Rio de Janeiro, RJ, CEP 22.290-240, Brazil. Tel.: 55-21-295-5847, Fax: 55-21-295-8094, E-mail: 31igc@31igc.org.br.

September

3-8 **Goldschmidt 2000.** Oxford, UK. *Details*: P. Beattie, Cambridge Publications, Publications House, PO Box 27, Cambridge, UK CB1 4GL. Tel.: 44-1223-333438, Fax: 44-1223-333438, E-mail: gold2000@campublic.co.uk , WWW: http://www.campublic.co.uk/science/conference/Gold2000/

November

13-16 **GSA Annual Meeting.** Reno, NV. *Details*: GSA Meetings Dept. Boulder, CO 80301-9140. Tel.: (303)-447-2020, Fax: (303)-447-1133. WWW: http://www.geosociety.org/meetings/index/htm

December

15-19 **AGU Fall Meeting.** San Francisco, CA. *Details*: AGU Meeting Department, 2000 Florida Ave., NW Washington, DC 20009. Tel.: 202-462-6900: Fax: 202-328-0566, E-mail: meetings@kosmos.agu.org, WWW: http://www.agu.org/meetings.

Welcome New Members!

We welcome the following as members of the Society. If you know of someone who would like to join MSA, or should join MSA, use the membership application appearing elsewhere in this issue of *The Lattice* or obtain one from either MSA's home page (http://www.minsocam.org) or the MSA Business Office, 1015 Eighteenth Street, N.W., Suite 601, Washington, DC 20036-5274, USA. The areas of interest on the application form have been increased in an attempt to cover the increasingly broader interests of our membership. They 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), Topologic Mineralogy (TP), Biological Mineral interactions (BM) and Others as indicated

Aggen, Ms. Kerry L., Colorado School of Mines, Geology Dept., 1500 Illinois St, Golden CO 80403. Ph: (303) 278-0450. Fax: (303) 273-3244. E-mail: kaggen@mines.edu. (ST-98). MI,GE,OTHER

Eriksson, Dr. Susan C., Virginia Polytech Inst, Dept Geological Sciences, Blacksburg VA 24061-0420. Ph: (540) 231-6029. Fax: (540) 231-5446. E-mail: serikssn@vt.edu. (M-98). MI,TC

Hofmeister, Dr. Wolfgang, Johannes-Guttenberg-Univ, FB-Geowissenschaften, Mainz D-55099, GERMANY. Ph: +49 (6131) 394365. Fax: +49 (6131) 393070. (M-98). MI,CC,GM

Kessel, Ms. Ronit, California Inst of Tech, Div Geol Planet Sci MC 170-25, 1201 E Californa Blvd, Pasadena CA 91125-0002. Ph: (626) 395-6863. Fax: (626) 568-0935. E-mail: ronit@gps.caltech.edu. (ST-98). GE,IP

Kuehner, Dr. Scott M., University of Washington, Dept Geological Sciences, Box 351310, Seattle WA 98195-1310. Ph: (206) 543-8393. Fax: (206) 616-6873. E-mail: kuehner@u.washington.edu. (M-98). EP

Kuribayashi, Mr. Takahiro, Tohoku University, Inst Mineral Petrol & Econ Geology, Faculty of Science, Sendai 980-8578, JAPAN. Ph: +81 (22) 217-6652. Fax: +81 (22) 217-6675. E-mail: t-kuri@mail.cc.tohoku.ac.jp. (M-98). MI,CC

Lackey, Mr. Jade Star, Univ of Wisconsin Madison, Dept Geology & Gephysics, 1215 W Dayton St, Madison WI 53706-1692. Ph: (608) 238-2269. E-mail: jadestar@geology.wisc.edu. (ST-98). IP,MP,GE,PE,TC

Lavery, Ms. Patricia Eilish, Unit 7, 70 Grange Blvd, Bundoora VIC 3083, AUSTRALIA. Ph: +61 (3) 9479-2488. Fax: +61 (3) 9479-1272. E-mail: p.lavery@latrobe.edu.au. (ST-98). MI,MP,GE,EG

Lordo, Ms. Kathleen Marie, 1743 Heathrow Dr, Cookeville TN 38506-5557. Ph: (931) 528-5735. E-mail: kml4741@tntech.edu. (ST-98). MI,MP

Margerum, Mr. Walter Grant, 14892 Sutro Ave, Gardena CA 90249-3657. Ph: (310) 324-1976. E-mail: margerum@aol.com. (M-98). MI,CC,EG

Nealson, Dr. Kenneth H., Jet Propulsion Laboratory, Mailstop 183-301, 4800 Oak Grove Dr, Pasadena CA 91109-8001. Ph: (818) 354-9219. Fax: (818) 393-4446. E-mail: nealson@scn1.jpl.nasa.gov. (M-98). GE,CM

Owens, Dr. Brent E., College of William & Mary, Dept of Geology, Williamsburg VA 23187-8795. Ph: (757) 221-1813. E-mail: beowen@facstaff.wm.edu. (M-98). IP,MP

Schmidt, Dr. David, CRMC2-CNRS, Campus de Luminy, Case 913, Marseille Cedex 9 F-13288, FRANCE. Ph: +33 (491) 172841. E-mail: schmidt@crmc2.univ-cnrs.fr. (M-98). CC,MI

Shin, Dr. Jung Ok, 428 Hawthrone St Apt 212, Glendale CA 91204-3110. Ph: (818) 550-9965. (M-98). MI

Strongin, Prof. Daniel R., Temple University, Dept of Chemistry, 1901 N 13th St Rm 201, Philadelphia PA 19122-6081. Ph: (215) 204-7119. Fax: (215) 204-1532. E-mail: dstrongi@numbus.ocis.temple.edu. (M-98). GE

Sweeney, Dr. Russell James, PO Box 82232, Southdale 2135, SOUTH AFRICA. Ph: +27 (11) 3747845. Fax: +27 (11) 8351315. (M-98). IP,GE,PE,PP

Weiszburg, Prof. Tama's G., Eotvos University, Dept of Mineralogy, Muzeum Krt 4/A, Budapest H-1088, HUNGARY. Ph: +361 266 3864. Fax: +361 266 7952. E-mail: weiszburg@ludens.elte.hu. (M-98). MI,CC,CM,EM,GM,PM,TC,TP,OTHER

Zieg, Mr. Michael J., Johns Hopkins University, Dept Earth Planet Sciences, 3400 N Charles St, Baltimore MD 21218-2687. Ph: (410) 516-7034. E-mail: mzieg@jhu.edu. (ST-98). IP,MP

1015 Eighteenth Street, N. W.
Suite 601
Washington, D. C. 20036

RETURN SERVICE REQUESTED

NON-PROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 4450
DAMASCUS, MD