

The Lattice

MEMBERS NOMINATE OUTSTANDING STUDENTS IN MINERALOGY FOR SOCIETY'S UNDERGRADUATE AWARD

Fifteen 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 individual professors 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 complimentary student membership, including *American Mineralogist*, for 1994.

The next deadline for nominating students is June 1, 1994. Please mark your calendars now so you can be watching for that exceptional student. To nominate a student, send a letter on departmental letterhead giving the student's full name (for the certificate), departmental address, year in school, interest area, MSA sponsor name, and the date and brief description of the award ceremony at which the certificate will be presented. The letter must be signed by the department chair. Send the letter to the MSA Business Office, 1130 Seventeenth Street, NW, Suite 330, Washington DC 20036.

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

Shawn Tavel Alves
The University of the South
Sponsored by Jennifer A. Thomson

Rebecca Anema
Calvin College
Sponsored by Davis A. Young

David A. Boardman
Carleton College
Sponsored by Shelby J. Boardman

Brice A. Caldes
Miami University
Sponsored by John M. Hughes

David M. Cox
University of Wyoming
Sponsored by Carol D. Frost

Samuel Clark Cropper
Middle Tennessee State University
Sponsored by J. Warner Cribb

Julie Colleen Donoho
University of Arkansas
Sponsored by Spencer J. Cotkin

Travis A. Helms
University of Missouri-Rolla
Sponsored by Richard D. Hagni

Kelly James McDonald
The University of Calgary
Sponsored by I. Hutcheon

Theresa Rodgers
California State University,
Sacramento
Sponsored by John Neil

Mark Rosin
University of Wisconsin-Madison
Sponsored by Jill Banfield

Donald E. Saathoff
The University of Texas at San
Antonio
Sponsored by Robert K. Smith

Heather Marie Stoll
Williams College
Sponsored by R.A. Wobus

Yukiko Takeuchi
Vanderbilt University
Sponsored by Calvin Miller

Sarah Swan Vegotsky
Georgia State University
Sponsored by David A. Vanko



From the President

The Society is 75 years old this year! To help celebrate our Diamond Anniversary, two half-day "Anniversary Symposia" are planned, one at the spring meeting of AGU and one at the fall annual meeting of GSA. Invited speakers active in some of the frontier areas of mineral science will give state-of-the-art reviews and speculate on future research directions. Students interested in where our science is headed should make special note of these events. 75th Anniversary receptions will also be held at both meetings and I look forward to seeing you there. Our anniversary logo, designed by MSA's Arts Council and seen here for the first time (on p. 1), will appear throughout the year in various communications.

An anniversary is a time for celebration and reflection, an occasion to look back on past accomplishments and an enjoyable way to socialize with friends and acquaintances; but more important it is an occasion to indulge in some honest self-scrutiny and ask ourselves some tough questions. Have past opportunities been missed? Do we have a vision for the future? Are we headed in the right direction in this decade of rapid change? Is the membership being adequately served? Are we attracting into MSA all the people we should be attracting?

Just these thoughts were uppermost in Past-President Alex Navrotsky's mind last year when she appointed the "Future Directions" Committee, chaired by Jonathan Stebbins. The Committee report was printed in full in the last (November 1993) issue of *The Lattice*. In the same issue of *The Lattice* I announced the appointment of an ad-hoc Committee to look into policies governing MSA's most important ongoing undertaking, publication of the *American Mineralogist*. Things are already moving, and the Committee will have an initial report for the Spring Council meeting. Now is the time to feed this Committee your thoughts and suggestions. The Committee consists of Jim Papike (chair), Steve Bohlen, Mark Ghiorso, Ted Labotka, Alex Navrotsky, Rich Reeder, Jonathan Stebbins, and John Valley. Right now I am asking

members of Council in the next four months to translate appropriate parts of the Stebbins Committee report into specific recommendations for action that can be discussed and implemented at the May Council meeting. In this context members are reminded that meetings of Council are open; the dates this year are May 22 (Baltimore) and October 23 and 25 (Seattle) - contact Susan Myers or Steve Guggenheim for further information.

Preparations are currently underway for two MSA-sponsored Short Courses and three new editions of *Reviews in Mineralogy* this year. Peter Heaney, Charlie Prewitt, and Gerald Gibbs are organizers of a Short Course on "Silica: Physical Behavior, Geochemistry, and Materials Application" to be given on October 20-23, prior to the GSA meeting in Seattle. "Volatiles in Magmas" will be the topic of a Short Course being organized by John Holloway and Mike Carroll before the December meeting of AGU in San Francisco. See details of both of them elsewhere in this issue of *The Lattice*. The third *Reviews* volume of the year will reflect a theme session in Seattle on "Boron: Mineralogy, Petrology, and Geochemistry in the Earth's Crust," sponsored by Ed Grew and Larry Anovitz.

At the Spring AGU meeting in Baltimore this year, in addition to our Anniversary Symposium, MSA is sponsoring several Special Sessions: Environmental Mineralogy, A Decade of Metamorphic P-T-t Paths - What Do We Now Know?, Mineralogy of the Upper Mantle and Transition Zone - Observations and Experiments, Audacious Science - The Ringwood Legacy, and Segregation of Melts from Crustal Protoliths - Mechanisms and Consequences. As most of you probably know, it is also AGU's 75th anniversary - so, come and enjoy the celebrations!

The new Editors of *American Mineralogist*, Ted Labotka and Rich Reeder, are hard at work at their duties and continuing the efforts of their predecessors to ensure that the journal remains the most distinguished one in its field. The editorial office has added procedures to further encourage the speedy movement of manuscripts between editors, associate editors, reviewers, and authors, and as a result

publication times continue to decrease. The backlog of manuscripts has gone, and we welcome quality papers in all areas of the mineralogical sciences.

Among the issues facing Council at the May meeting will be how to respond to the obvious need to facilitate the transmittal of copies of *American Mineralogist* to libraries in the former Soviet Union and other former east-bloc countries under economic stress. In my opinion, it is best done through the contributions of members who have special reasons for wanting to help, and I repeat my invitation in the last issue of *The Lattice* for members to send to MSA headquarters donations in units of \$30. However, we will have to revisit this issue in the event that contributions fail to match the requests we have received.

The International Mineralogical Association meets every four years, and this year it will be in Pisa, Italy, from September 4 to 9. This meeting offers North American investigators an opportunity to interact with an audience of mineralogists with different backgrounds, traditions, and agendas, and I believe it is important that individually we try to solve the problem of cost and make a good effort to present the best of current research in N. America. The deadlines for reduced-fee registration and abstracts are coming up (see p. 8).

I hope that it is not too late to wish you all a happy and productive New Year!



Bernard W. Evans

President

Suggestion Box

To the Editor:

I was happy to read in the recent issue of *The Lattice*, President Bernard Evans' suggestion of using the Society newsletter as a forum for discussion of the important issues facing our Society as we move into the 1990s. It was clear at the annual MSA business meeting last fall in Boston that there is a need for such a forum. In his letter, President Evans invites comments on the Report of the ad-hoc Committee on MSA Future Directions. Here are a few comments.

I was rather surprised to find that less than 5% of our membership responded to the survey! Is it that comfortable out there? From my point of view, mineralogy and petrology are in danger and we all should be concerned about it. Perhaps the format of the survey, or the questions it contained, were unsuitable for its intended purpose. Any comments on this? At the present time we are experiencing a continuing decline in membership; and has anyone noticed how many mineralogy faculty positions have appeared in *Eos* in the last three years? I believe there have been less than five. Why should MSA seek to recruit new student members and encourage young earth scientists to study mineralogy and petrology when there are no jobs?

This situation is particularly frustrating because we all know that mineralogy is of fundamental importance in a large number of pressing environmental concerns, as pointed out by Bernard Evans. So how can we make ourselves more visible in the public and political eye? This seems a difficult question since most of us are more interested in our teaching and research efforts than in promoting ourselves in the media, and in Washington. I feel the MSA has taken a step in the right direction by initiating the *MSA Lecture Series*, but more needs to be done. I believe that ordinary people need to see the connection between mineralogy and their day-to-day lives, and the best place to start this is with the education of young children. I think that the MSA should definitely become more active, perhaps jointly with NAGT, in elementary and secondary school earth science education. If children get excited about mineralogy, so will their parents.

Another idea might be a PBS television special about mineralogy and its role in our daily lives. We see great specials about dinosaurs and evolution, why not mineralogy? Both of these suggestions appeared in the Committee Report. Perhaps we should act on them.

I also wanted to comment on the *MSA Short Courses*. I have always felt that the short courses are an invaluable contribution to our science, and these days they provide an excellent means of attracting scientists from other fields who want to learn how mineralogy relates to their research. A major problem, as I see it, is the high cost of attending an *MSA Short Course*. The recent course on the *Health Effects of Mineral Dusts* cost \$475 for members and \$530 for non-members (the people we want to attract). In my particular case, trying to raise a family on a postdoc salary in the Princeton area made it financially impossible to even consider attending the course, and this was one I really wanted to attend, given my past involvement in the asbestos business. Part of the high expense may be due to the resort-style settings that are chosen for convening these courses. I would argue, however, that the social climate and comfort level for those attending the courses are equally as important as the information disseminated at the course itself. I think it is important that the short courses be pleasant experiences for all attendees, so that they will tell their colleagues and return for future courses. I learned at the business meeting in Boston that our Society endowment has surpassed one million dollars this year, and continues to grow. What is this money for? Why not use some of the interest generated by this endowment to subsidize the short courses? It seems ludicrous to me to keep the endowment behind tightly locked doors.

The same goes for *The Lattice*, which is under very tight page limits due to budgetary constraints. I think that it is ridiculous that our Society newsletter even has a page limit. Shouldn't the size and scope of the newsletter be determined by the needs of the Society, and not by cost? Especially when a small portion of the endowment income could ease the pressure on the editor to

(Suggestion Box continued on p. 8)



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; 30% 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 1994 are \$60 for professional members; \$30 for students. Membership is on a calendar year basis. Individuals who join after January 1, 1994 will be sent all back issues of the journal for volume 79, 1994.

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 1994 volume of *American Mineralogist* for the annual rate of \$250 in the US, \$255 in Canada and Mexico and \$260 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.

1994 President: Bernard W. Evans
University of Washington

Past-President: Alexandra Navrotsky
Princeton University

Vice President: James J. Papike
University of New Mexico

Secretary: Stephen J. Guggenheim
University of Illinois at Chicago

Treasurer: Rosalind Helz
U.S. Geological Survey

Editor of The Lattice: Marta Flohr
USGS, 959 National Center
Reston, VA 22092

Office Manager/Accountant: Susan L. Myers

Mineralogical Society of America
1130 Seventeenth Street N.W., Suite 330
Washington, D.C. 20036
Telephone: (202) 775-4344
FAX: (202) 775-0018

Registration Form

MSA Short Course Silica: Physical Behavior, Geochemistry, and Materials Applications October 20-23, 1994

Return this registration form, completed, to the MSA Business Office, 1130 17th Street, N.W., Suite 330, Washington, D.C. 20036. FAX: (202) 775-0018. Payment must accompany this form. Registration is limited to 100 individuals on a first-come, first-served basis. Please type or print. All cancellations must be made in writing and received by October 1. No refunds will be made on cancellation notices after this date.

Name _____
(first) (middle initial) (last)

Address _____

(city) (state) (zip/postal code) (province) (country)

Telephone numbers _____ (office) _____ (fax)

Please circle the appropriate registration category.

	Member	Non-Member
Professional:	\$375	\$435*
Student:	\$200	\$230*

*includes MSA dues for 1995.

Please check method of payment:

____ Enclosed is a check or money order in the amount of \$ _____.
____ Please charge my ____ Visa ____ Mastercard
____ Diner's Club ____ American Express card in the amount of \$ _____.

(Your credit card will be charged when the registration form is received.)

(card number) (name on card--please print)

(signature) (exp. date)

Please list any special requirements regarding meals.

____ Yes, I am interested in the field trip. Please send me information.

SILICA

Physical Behavior, Geochemistry, and
Materials Applications

Date: October 20-23, 1994
Location: Pack Forest Conference Center, Eatonville, WA
Conveners: Peter J. Heaney, Charles T. Prewitt, and Gerald V. Gibbs

The many phases and related derivatives of silica include some of the most important minerals on Earth and are essential components of many industrial materials. Quartz alone comprises an estimated 12% of the Earth's crust by volume, and it is equally common in sedimentary, igneous and metamorphic environments. Because of its predominance, quartz is one of the most thoroughly investigated petrologic resources; it has served as an indicator of processes ranging from gold mineralization to meteorite impacts.

This short course will review the physics, chemistry, and applications of the silica phases, with particular attention to advances made over the past three decades. Selected topics include:

- *Silica transformations at high pressure*
- *Structural characteristics and petrogenesis of fine-grained silica*
- *Quartz as a tectonophysical indicator*
- *Solubility behavior of the silica polymorphs*
- *Applications of high-silica zeolites*
- *Advances in sol-gel processing*
- *Health hazards of silica dusts*
and more.....

Location: The short course will be held at the Pack Forest Conference Center located near the town of Eatonville, WA about 60 miles southeast of SeaTac Airport. Mt. Rainier is only 22 miles away and there will be time in the schedule for those who want to visit Mt. Rainier National Park. Bus transportation will be provided from SeaTac Airport to Pack Forest on Thursday, October 20, and from Pack Forest to the airport and downtown Seattle hotels on Sunday afternoon, October 23.

Field Trip: Washington State offers some of the finest quartz collecting localities in North America. If a sufficient number of people express interest, there will be a field trip on Wednesday, October 19 to one of several possible quartz deposits (quartz clusters, scepter quartz, Japan-twinned quartz) that will be exposed by blasting shortly before the trip. Costs will run about \$85 per person, and these fees will cover transportation, lunch, and tools. If you would like more information, please mark the registration sheet or contact the conveners.

Registration: See the short course registration form on p. for registration fees. These fees include housing and meals during the short course. Student scholarships will also be available. For more information, contact the MSA Business Office.

VOLATILES IN MAGMAS

Date: December 2-4, 1994
Location: Napa Valley Sheraton, Napa Valley, CA
Conveners: Mike Carroll and John Holloway

TOPICS AND INSTRUCTORS

1. MAGMATIC VOLATILES IN HIGH-TEMPERATURE VOLCANIC GASES - R.B. Symonds and T.M. Gerlach
2. ANALYTICAL METHODS FOR VOLATILES IN GLASSES - P. Ihinger, R. Hervig, P. McMillan
3. EXPERIMENTAL DETERMINATIONS OF H₂O AND CO₂ SOLUBILITIES AND SPECIATION IN SILICATE MELTS - J. Blank, C.W. Burnham, J.R. Holloway, P. McMillan, E.M. Stolper
4. SOLUBILITIES OF THE LESS ABUNDANT VOLATILE SPECIES: SULFUR, NOBLE GASES, NITROGEN, CHLORINE, FLUORINE - M.R. Carroll and J.D. Webster
5. THERMODYNAMIC MODELS OF VOLATILE SOLUBILITIES - J.R. Holloway, C.W. Burnham, E.M. Stolper
6. DIFFUSION OF DISSOLVED VOLATILES IN MAGMAS - E.B. Watson
7. EFFECTS OF VOLATILES ON PHYSICAL PROPERTIES OF MELTS - R. Lange
8. PRE-ERUPTIVE VOLATILE CONTENTS OF MAGMAS - A.T. Anderson, M. Johnson, M.J. Rutherford
9. PHYSICS AND CHEMISTRY OF MAGMA DEGASSING PROCESSES - K.V. Cashman, M.T. Mangan, R.S.J. Sparks
10. VOLCANIC GAS EMISSIONS, EARTH DEGASSING AND LARGE-SCALE GEOCHEMICAL CYCLING OF VOLATILE ELEMENTS - A. Jambon, W. Rose

Reminder

The 1994-1997 Membership Directory is scheduled to be published in May 1994. All members were sent a blue directory information form with their 1994 renewal notice. Please be sure to return the completed form no later than March 30. Your cooperation is appreciated. If you did not receive a form, or have lost the original, please contact the business office.

IMA Personal Membership

The International Mineralogical Association (IMA) now accepts individual memberships. The membership dues, to be paid in advance, will be \$40 (US) for five years. If you apply for membership now you may benefit from the reduced registration fee of the 16th General Meeting of the IMA in Pisa, Italy, September 4-9, 1994. The following application, with payment, should be returned to: Stefan S. Hafner, University of Marburg, Institute of Mineralogy, Hans-Meerwein-Strasse, 35032 Marburg, Germany.

INTERNATIONAL MINERALOGICAL ASSOCIATION

Application for Personal Membership

Name:

Address:

Degrees (with dates):

Present position or occupation:

Fields of major interest:

I am enclosing a check or money order (you may also send cash, at your own risk).

Please check: for membership of five years (US\$40) _____

Donation _____

Total _____

(Date)

(Signature)

Suggestion Box continued from p. 3

cram everything into x number of pages, or else simply reject submitted material.

Finally, I would like to comment on the suggestion by Steve Bohlen that the average manuscript length in *American Mineralogist* be reduced to six printed pages. I think that this is a bad idea. Many thorough mineralogic and petrologic studies require more than six pages, especially if there are figures, plates, and tables of data. We already have a letters section in the journal for the publication of short, significant scientific communications. If this is insufficient, what about starting up a second journal, say "*Earth Materials Letters*," especially designed to handle the rapid publication of short papers from anyone who works on earth materials? The increase in the number of Letters in recent issues of *American Mineralogist* suggest that the need for a new, rapid-publication journal is real.

I hope that the membership of the MSA responds to Bernard Evans' call to become involved with the important issues facing the Society. If we don't take action to keep pace with the changing face of mineralogy, the Society will fade from existence.

Eugene A. Smelik, Ph.D
Research Associate
Dept. of Geological Sciences
Princeton University

16th General Meeting of the International Mineralogical Association 4-9 September 1994 Pisa, Italy

Reminder

The abstract deadline for the IMA meeting is April 1, 1994. In order to qualify for reduced registration fees, participants must register no later than April 15, 1994.

If you have not yet received the Second Circular, it is available from:

Organizing Committee IMA94
Dipartimento de Scienze della Terra
Università di Pisa
Via S. Maria 53
I-56126 Pisa
ITALY

The text of the Second Circular is also available via e-mail. To receive this circular by e-mail, send an e-mail message to:

listserv@dst.unipi.it

The only message should be:

GET IMA CIRCULAR.2

For an index of other items on the list server, send the message:

IMA INDEX

IMA'98 Toronto, Canada

The 17th General Meeting of the International Mineralogical Association, IMA'98, will be held from 9-15 August 1998 at the University of Toronto, Toronto, Canada. The meeting will be preceded and succeeded by field trips across Canada, including important mineral locations, ore deposits, sites of impact craters, and classic petrologic localities. For more information please contact Professor A.J. Naldrett, Department of Geology, University of Toronto, Toronto, M5S 3B1 Canada. Tel.: (416) 978-3030; Fax: (416) 978-3938; e-mail address: ima98@quartz.geology.utoronto.ca.

MEETING CALENDAR 1994-1995

1994

April

- 4-8 Spring Meeting of the Materials Research Society, San Francisco, CA. *Details:* MRS, 9800 McKnight Road, Pittsburg, PA 15237. Telephone: (412) 367-3003; Fax: (412) 367-4373.
- 13-15 EMPG-V - "Fifth International Symposium of Experimental Mineralogy, Petrology, and Geochemistry." *Details:* Dr. R.J. Angel, Dept. Geological Sciences, University College London, Gower St., London, WC1E 6BT, UK. Telephone: +44-71-387-7050; Fax: +44-71-388-7614.

May

- 15-18 Geological Association of Canada and Mineralogical Association of Canada Annual Meeting, Waterloo, Ontario. *Details:* Alan V. Morgan, Dept. of Earth Sciences, University of Waterloo, Ontario N2L 3G1, Canada. Telephone: (519) 885-1211, ext. 3231; Fax: (519) 746-7484.
- 19-21 PACROFI V - Pan American Current Research on Fluid Inclusions, Morelos, Mexico. *Details:* Georgina Izquierdo M., Dept. de Geoterminia, Instituto de Investigaciones Eléctricas, Apdo. postal 475, Cuernavaca 62000, Morelos, Mexico. Telephone: (73) 183811, ext. 7321; Fax: (73) 182526.

- 23-27 AGU/MSA/GS Spring Meeting, Baltimore, MD. *Abstract deadline: March 3, 1994.*

July

- 7-9 Third Annual Meeting of the History of the Earth Sciences Society, The Northeastern Science Foundation, Inc., Rensselaer Center of Applied Geology, 15 Third Street, P.O. Box 746, Troy, NY 12180. Excursions: The Taconic and Catskill Mountains as they relate to 19th Century Geological Controversies. Contributions are invited on all aspects of the history of the earth sciences, particularly on the history of stratigraphy, sedimentology, and paleontology. *Details:* Dr. Gerald M. Friedman.

August

- 14-19 Clay Minerals Society 31st Annual Meeting, Saskatoon, Saskatchewan, Canada. *Details:* Ahmet R. Mermut, Dept. of Soil Science, Saskatchewan Institute of Pedology, University of Saskatchewan, Saskatoon S7N 0W0, Canada. Telephone: (306) 966-6839; Fax: (306) 966-6881; E-mail: mermut@saks.usask.ca.

August-September

- 29-2 VM Goldschmidt Conference - An International Conference for the Advancement of Geochemistry, Edinburgh, UK. *Details:* Dr. Peter Symms (VM Goldschmidt Conf. 1994), Dept. of Geology and Geophysics, The University of Edinburgh, The Grant Institute, West Mains Road, Edinburgh EH9 3JW, Scotland UK.

September

- 4-9 International Mineralogical Association (16th General Meeting of the IMA), Pisa, Italy. *Details:* Prof. Stefano Merlino, Organizing Committee IMA '94, Dipartimento di Scienze della Terra, Università di Pisa, Via S. Maria, 53, I-56126 Pisa, Italy. Fax: +39 (0)50 40976; E-mail: IMA94@VM.CNUCE.CNR.IT.

December

- 5-10 AGU Fall Meeting, San Francisco, CA. *Abstract deadline: September 7, 1994.*

1995

January

- 4?-5 Winter Meeting of the Mineralogical Society of Great Britain, University of Sheffield. *Magmatic Processes - Do Answers Lie in the Rocks?* *Details:* Fergus Gibb, Dept. of Earth Sciences, University of Sheffield, Brookhill, Sheffield S3 7HF, UK. Telephone: (0742) 768555, ext. 4477, Fax: (0742) 739826.

Members in the News

Mark T. Brandon, Yale University, has been selected to serve as a Research Host for Dr. Uwe Ring, a post-doctoral researcher under the German Feodor-Lynen program of the Alexander von Humboldt Foundation.

Gerald M. Friedman received the highest honor of the Association of Earth Sciences Editors, the Award for Outstanding Editing or Publishing Contributions. He was recognized for the editorship of more than two dozen earth science journals and books over a long career devoted to scientific editing and publishing.

Dr. Friedman also received the John T. Galey Memorial Award, the highest award of the Eastern Section of American Association of Petroleum Geologists. This award is intended to recognize distinguished geoscientists whose outstanding accomplishments and contributions have been directed toward the betterment of society.

ICDD - Crystallography Scholarship Awards

The International Centre for Diffraction Data is pleased to announce the awarding of three Crystallography Scholarships for 1994.

Peter C. Burns (MSA member), The University of Manitoba, Canada, Annapoorna Akella, Oregon State University, USA, and Michael Lloyd, University of Kentucky, USA have been selected as the recipients by the ICDD Scholarship Award Selection Committee. Peter Burns is conducting graduate studies on the stereochemistry of Cu^{2+} oxysalt minerals. Annapoorna Akella is identifying important correlations between atomic structure and luminescent and nonlinear optical properties. Michael Lloyd is researching the probability of the formation of solid state compounds.

WELCOME!

The following new members and students have joined MSA. Welcome! Applications for membership may be obtained from the MSA Business Office, 1130 Seventeenth Street, N.W., Suite 330, Washington, DC 20036.

Altherr, Rainer, Mineralogisch-Petrographisches Institut, Universität Heidelberg, Im Neuenheimer Feld 236, Heidelberg D-69120, GERMANY. O:(49) 6221 564800. F:(49) 6221 564805. (ME-94)MI. Sponsor: MSA.

Andronicos, Christopher, 430 Vancouver Road, Rio Rancho, NM 87124. (ST-94)MP. Sponsor: MSA.

Aranovich, Leonid, Institute of Experimental Mineralogy, Chernogolovka 142432, RUSSIA. O:(613) 947-0054. F:(613) 995-7997. (ME-94)MP. Sponsor: MSA.

Aust, Ann E., Department of Chemistry & Biochemistry, Utah State University, Logan, UT 84322-0300. O:(801) 750-1629. F:(801) 750-3390. (ME-94). Sponsor: MSA.

Bosbyshell, Howell, RD#3, Box 343B, Coatesville, PA 19320. O:(215) 526-7451. (ST-94). Sponsor: MSA.

Brooks, Donald A., The McCrone Group, 850 Pasquinelli Drive, Westmont, IL 60559. O:(708) 887-7100. F:(708) 887-7417. (ME-94)MI. Sponsor: MSA.

Buick, Ian S., Department of Geology, La Trobe University, Bundoora, Melbourne, Victoria 3083, AUSTRALIA. O:3 4791274. F:3 4791272. (ME-94)MP. Sponsor: MSA.

Buurman, P., Dorpsstraat 163, Renkum 6871AJ, THE NETHERLANDS. O:(31) 0370 83538. F:(31) 8370 82419. (ME-94)SP. Sponsor: Leendert van der Plas.

Carpenter, S.J., Dept of Geosciences, Penn State University, University Park, PA 16802. O:(814) 863-1667. (ST-94)GE. Sponsor: MSA.

Cazzaniga, Alessandra, Box 1846, Dept of Geology, Brown University, Providence, RI 02912. O:(401) 863-1925. (ST-94)IP. Sponsor: MSA.

Champness, Pamela E., Dept of Geology, The University, Manchester M13 9PL, ENGLAND. O:(061) 275 3808. F:(061) 275 3947. (ME-94)MI. Sponsors: S.A.T. Redfern and C.M.B. Henderson.

Christensen, Dennis R., Luzenac America, Inc., 8985 East Nichols Avenue, Suite 300, Englewood, CO 80112. O:(303) 643-0484. F:(303) 643-0485. (ME-94). Sponsor: MSA.

Christiansen, Eric H., Department of Geology, Brigham Young University, Provo, UT 84602. O:(801) 378-2113. F:(801) 378-8143. (ME-94)IP. Sponsors: W.R. Phillips and Dana T. Griffen.

Cooper, Kari M., Dept of Geological Sciences, AJ-20, University of Washington, Seattle, WA 98195. O:(206) 543-1996. (ST-94)MP. Sponsors: Bernard W. Evans and Mark S. Ghiorso.

Dalrymple, Richard, 732 N 1300 W, Rose Park, UT 84116. O:(801) 596-1464. (ST-94)MI. Sponsor: MSA.

Dell'Angelo, Lisa N., Geologisches Institut, ETH-Zentrum, CH-8092 Zurich, SWITZERLAND. O:(41)1 632 3694. F:(41)1 252-0819. (ME-94)PH. Sponsor: MSA.

Dunnigan, Jacques, Pavillon Marie-Victorin, Université de Sherbrooke, Sherbrooke, Quebec J1K 2R1, CANADA. O:(819) 821-7633. F:(819) 821-7824. (ME-94). Sponsor: MSA.

Ehlers, Karin, School of Earth Sciences, University of Melbourne, Parkville, Victoria, 3052, AUSTRALIA. O:(03) 344 7221. F:(03) 344 7761. (ME-94)MP. Sponsor: MSA.

Elder, Randy A., Dept of Geology, University of New Orleans, New Orleans, LA 70148. (ST-94)MI. Sponsors: W.B. Simmons and Karen L. Webber.

Erickson, Cheryl L., Earth Sciences Dept, UCSC, Santa Cruz, CA 95064. O:(408) 459-4084. (ST-94)SP. Sponsor: MSA.

Fethke, Walter P., 60 Pine Tree Road, Monroe, NY 10950. O:(914) 789-2049. F:(914) 789-2204. (ME-94). Sponsor: MSA.

Fletcher, John M., Dept Geology & Geophysics, University of Utah, Salt Lake City, UT 84112-1183. O:(801) 581-7089. F:(801) 581-7065. (ST-94)MP. Sponsor: MSA.

Franceschini, Fabrizio, Via Basilicata No 4, Pisa 56124, Toscana, ITALY. O:(39) 50 598334/542872. F:(39) 50 598334/542724. (ME-94)IP. Sponsor: MSA.

Frantisek, Eichler, Jachymouska 282, Liberec 460 10, CZECH REPUBLIC. F:(42) 048 355 41. (ME-94)PE. Sponsor: MSA.

Friedrich, Anne, Dept EAPS, 54-1118, MIT, Cambridge, MA 02139. O:(617) 258-5757. (ST-94)MP. Sponsor: MSA.

Gee, Bernard J., Yale University School of Medicine, 333 Cedar Street, P.O. Box 3333, New Haven, CT 06510. O:(203) 785-4195. F:(203) 785-3826. (ME-94). Sponsor: MSA.

Gillet, Philippe, 46, Allee D'Italie, ENS Lyon (Geologie), Lyon 69364, FRANCE. O:(33) 7272 8406. F:(33) 7272 8080. (ME-94)MI. Sponsors: Christian Willaime and Jean Marie Malezieux.

Glenn, Robert E., National Industrial Sand Association, 900 Spring Street, Silver Spring, MD 20723. O:(301) 587-1400. F:(301) 585-4219. (ME-94). Sponsor: MSA.

Grandinetti, Philip, 120 West 18th Ave., Dept of Chemistry, Ohio State University, Columbus, OH 43210. O:(614) 292-6818. F:(614) 292-1685. (ME-93)MI. Sponsor: MSA.

Grimes, Stephen, Dept of Geological Sci, University of Texas @ Austin, Austin, TX 78705. O:(512) 472-2052. (ST-94)MP. Sponsor: MSA.

Hannigan, Robyn, Dept of Geological Sciences, University of Rochester, Rochester, NY 14627. O:(716) 275-8408. (ST-93). Sponsor: MSA.

Hassler, Debbie, Rm 54-1118, EAPS, MIT, 77 Mass Ave., Cambridge, MA 02139. O:(617) 258-5757. (ST-94)IP. Sponsor: MSA.

Hesterberg, Thomas W., Schuller International, Inc., P.O. Box 625005, Littleton, CO 80162-5005. O:(303) 978-3831. F:(303) 978-2358. (ME-94). Sponsor: MSA

Holland, Laurence Martin, 215 Rio Bravo, Los Alamos, NM 87544. O:(505) 672-9788. (ME-94). Sponsor: MSA.

Jordan, Neal, OMYA, Inc., 61 Main Street, Proctor, VT 05765. O:(802) 459-3311. F:(802) 459-3428. (ME-94). Sponsor: MSA.

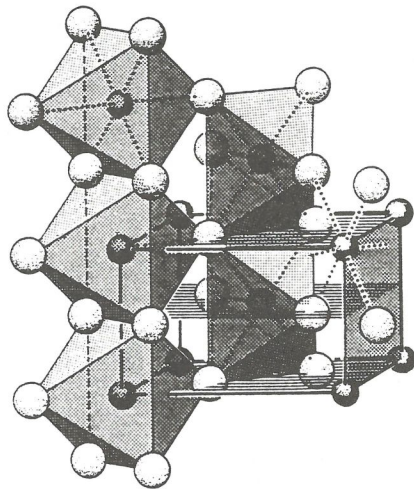
Jurinski, Joseph B., PICOLAB, Inc., 7008-F Little River Turnpike, Annandale, VA 22003. O:(703) 941-0865. F:(703) 941-0785. (ME-94). Sponsor: MSA.

Keane, Steve, Geology Dept, SCI 117, USC, University Park, Los Angeles, CA 90089. O:(213) 740-6740. (ST-94)MP. Sponsors: Jean Morrison and J.L. Anderson.

- Larson, Mike G.**, Minerals Technologies, Inc., 405 Lexington Avenue, New York, NY 10174-1901. O:(212) 878-1835. F:(212) 878-1804. (ME-94). Sponsor: ISA.
- Liu, Jun**, Dept of Geology, Stanford University, Stanford, CA 94305. O:(415) 497-2165. F:(415) 725-2199. (ST-94)MI. Sponsor: MSA.
- Lochhead, Alison**, Earthquake Research Institute, University of Tokyo, 1-1 Yayoi, Bunkyo-ku, Tokyo 113, JAPAN. O:(813) 3812 2111. F:(813) 3816 1159. (ST-94)MP. Sponsor: MSA.
- Lu, Rem**, Dept of Geology, University of California, Davis, CA 95616. O:(916) 752-8564. F:(916) 752-0951. (ST-94)MI. Sponsors: Anne M. Hofmeister and Catherine M. Helm.
- McAloon, Brian P.**, PO Box 73961, Davis, CA 95616. O:(916) 752-8564. (ME-93)MI. Sponsors: Anne M. Hofmeister and Catherine M. Helm.
- Memmi, Isabella**, Dip Scienze Della Terra, Via Delle Cerchia N 3, Siena 53100, ITALY. O:(0577) 238816. F:(0577) 238815. (ME-94)MI. Sponsor: MSA.
- Metz, Edward A.**, P.O. Box 523, HC77 Box 80, Crawford, NE 69339. O:(308) 665-1770. F:(308) 665-1420. (ME-94)MI. Sponsor: MSA.
- Moss, Owen R.**, Chemical Industry Institute of Toxicology, 6 Davis Drive, P.O. Box 12137, Research Triangle Park, NC 27709. O:(919) 541-2070. F:(919) 541-9015. (ME-94). Sponsor: MSA.
- Mutchler, Scott**, 300 Apt Hts Drive, #G3, Blacksburg, VA 24060. O:(703) 231-8829. F:(703) 552-0225. (ST-94)CC. Sponsor: Paul Ribbe.
- Ogasawara, Yoshihide**, 2850 Middlefield Rd, #105A, Palo Alto, CA 94306. O:(415) 723-5028. F:(415) 725-2199. (ME-93). Sponsor: MSA.
- Pollett, Buford B.**, Rt 3, Box 110, Wrightsville, GA 31096. O:(912) 864-3501. F:(912) 864-1443. (ST-94)CM. Sponsor: MSA.
- Pope, Alan R.**, 108 S. King's Highway, Cherry Hill, NJ 08034. O:(609) 429-1800. F:(609) 429-1081. (ME-94). Sponsor: MSA.
- Posfai, Mihaly**, Dept of Geology, Arizona State University, Tempe, AZ 85287-1404. O:(602) 965-7250. F:(602) 965-8120. (ME-94)MI. Sponsor: Peter R. Buseck.
- Probert, Lorree L.**, West Virginia University, P.O. Box 6070, 274 Comer Building, Morgantown, WV 26506-6070. O:(304) 293-3973. F:(304) 293-5708. (ME-94). Sponsor: MSA.
- Raymond, Robert**, EES-1, Mail Stop D 469, Los Alamos National Laboratory, Los Alamos, NM 87545. O:(505) 667-4580. F:(505) 665-3285. (ME-94). Sponsor: MSA.
- Razmarafarzaghi, Morteza**, Dept of Geology, University of Manchester, Manchester, ENGLAND. F:(061) 275 3947. (ST-94)MI. Sponsors: S.A.T. Redfern and C.M.B. Henderson.
- Refregier, Michèle**, Talc de Luzenac, BP 1162-2, place E. Bouillères, Toulouse Cedex 31036, FRANCE. O:(33) 6140 6333. F:(33) 6140 0623. (ME-94). Sponsor: MSA.
- Saffiotti, Umberto**, Laboratory of Experimental Pathology, DCE, NCI, 41/C-105, 9000 Rockville Pike, Bethesda, MD 20892. O:(301) 496-2818. F:(301) 402-1829. (ME-94). Sponsor: MSA.
- Selleck, Bruce W.**, Dean of Faculty, Colgate University, Hamilton, NY 13346. O:(315) 824-7222. F:(315) 824-7831. (ME-94). Sponsor: MSA.
- Sirbescu, Mona Liza C.**, SUNY at Binghamton, Dept of Geology 6000, Binghamton, NY 13902. O:(607) 777-2264. (ST-94)MI. Sponsors: H.R. Naslund and David M. Jenkins.
- Stern, Peter**, Dept of Geology, 1215 West Dayton Street, Madison, WI 53706. O:(608) 262-8960. (ST-94)EG. Sponsor: MSA.
- Suarez, Ofelia**, Dpt Geologia, Oviedo University, c/ Jesus Arias de Velasco s/n, Oviedo, 33005 Asturias, SPAIN. O:(34) 85 103165. F:(34) 85 103103. (ME-94)IP. Sponsor: MSA.
- Sutton, Jr., George**, 4191 Chucky River Road, Morristown, TN 37813. O:(615) 586-0553. (ST-94)SP. Sponsor: MSA.
- Swainson, Ian P.**, AECL Research, Chalk River Labs, Chalk River, Ontario K0J 1J0, CANADA. O:(613)584-3311. F:(613) 584-4040. (ME-94)CC. Sponsor: MSA.
- Tangeman, Jean**, Dept of Geological Sci, University of Michigan, 1006 CC Little Bldg, Ann Arbor, MI 48109-1063. O:(313) 764-1435. (ST-93). Sponsor: MSA.
- Thomson, Sandra A.**, US Army Edgewood Research, Development & Engineering Center, Attn: SCBRD-RTL, Aberdeen Proving Ground, MD 21010-5423. O:(410) 671-4821. F:(410) 671-2081. (ME-94). Sponsor: MSA.
- Tomaino, Gary P.**, 640 N. 13th Street, Easton, PA 18042. O:(215) 250-3001. F:(215) 250-3206. (ME-94). Sponsor: MSA.
- Vorpahl, Kenneth W.**, Box 768, UNIMIN Corporation, Winchester, VA 22604. O:(703) 678-1492. F:(703) 678-1492. (ME-94). Sponsor: MSA.
- Vyhnal, Christopher R.**, Dartmouth College, Earth Science Dept, Hanover, NH 03755. O:(603) 646-2373. (ST-94)MP. Sponsor: MSA.
- Wang, Shixin**, 440 Princeton SE#5, Albuquerque, NM 87106. O:(505) 277-2661. F:(505) 277-8843. (ST-94)MI. Sponsors: Robert J. Finch and Cornelis Klein.
- Watson, Mark B.**, 5110 Bradley Blvd., Chevy Chase, MD 20815. O:(301) 419-7805. F:(301) 210-4908. (ST-94). Sponsor: MSA.
- Webster, John R.**, University of Wisconsin - Parkside, 900 Wood Rd, Box 2000, Kenosha, WI 53141-2000. O:(414) 595-2544. F:(414) 595-2056. (ME-94). Sponsor: MSA.
- Weiner, Bruce L.**, P.O. Box 6295, Norfolk, VA 23508. O:(804) 623-7356. (ST-94)IP. Sponsor: MSA.
- Wolf, Michael**, Geology & Geophysics, 100 E Boyd, University of Oklahoma, Norman, OK 73019. O:(405) 325-4461. F:(405) 325-3140. (ME-93)IP. Sponsors: John P. Hogan and George B. Morgan VI.
- Yushkin, Nikolai P.**, Institute of Geology, 2 Oplesnina Street, Syktyvkar 167610, RUSSIA. O: 82122 20037. (ME-94)CC. Sponsors: W. Edwin Sharp and Richardson B. Allen.
- Zeng, Qiang**, Department of ESS, SUNY at Stony Brook, Stony Brook, NY 11794. O:(516) 632-8044. F:(516) 632-8240. (ST-94)PE. Sponsors: Hanna Nekvasil and Donald H. Lindsley.
- Zhu, Zhu**, 1342 51st Street, Brooklyn, NY 11219. (ST-94). Sponsor: MSA.

CRYSTALLOGRAPHY and CRYSTAL CHEMISTRY

F. Donald Bloss



Mineralogical Society of America

MSA Reprints a Favorite Undergraduate Text!

Crystallography and Crystal Chemistry

by F. Donald Bloss

This 560-page volume provides a basic treatment of the nature of crystalline materials for students of mineralogy, materials science, chemistry, and solid state physics. Its chapter titles are: External Symmetry; Crystal Classes, Axes, Systems; Crystal Nomenclature and Calculations; Crystal Projections; Crystal Forms and Class Determination; Translational Symmetry; Lattices; Internal Symmetry: Space Groups; Crystal Chemistry; Principles of Crystal Structures; Structural Variations, Composition, and Stability; Physical Properties (discussions of tensors and tensor properties are excellent!); Crystals and Light; Introductory X-ray Crystallography.

When reviewing the 1971 edition, M.H. Beeson (*Am. Min.* 57, 1010) noted that, "While the book should make an excellent reference, major efforts have been made to create an effective text. Explanations...are liberally aided by carefully conceived illustrations, charts, and tables...designed for easy visualization. With the exception of determinative mineralogy, this book treats most topics generally covered in an introductory crystallography-mineralogy course."

Paperback: 560 pp. \$21 ppd (\$30 non-members)

Copies may be ordered from the MSA Business Office:
Mineralogical Society of America
1130 Seventeenth Street N.W., Suite 330
Washington, D.C. 20036



1130 Seventeenth Street, N.W.
Suite 330
Washington, D.C. 20036

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