

The Lattice

Vol. 6, No. 2, May 1990

GSA/MSA 1990 Annual Meeting

The deadline for receipt of abstracts for the 1990 GSA/MSA Annual Meeting, Dallas, Texas (October 29 – November 1) is July 11, 1990. Abstract forms and description of theme sessions may be obtained from: Geological Society of America, P.O. Box 9140, Boulder, CO 80301 or by calling (303) 447-8850.

The pre-registration deadline for the meeting is September 28. Detailed information regarding registration, transportation, and housing will be published in the August issue of *The Lattice*. Information may also be obtained from the Geological Society of America by calling (303)

447-2020 or 1-800-472-1988. The Hyatt Regency Dallas will serve as headquarters during the meeting. Other hotels offering special convention rates include Adolphus, Aristocrat, Dallas Park Plaza, Days, Holiday Inn - Downtown, and Sheraton Dallas. Cain Travel Group will serve as GSA's official travel agent. Reservations may be made by calling Cain Travel at 1-800-346-4747, in Colorado call (303)443-2246. Information about the Dallas area may be obtained from: Dallas Convention & Visitors Bureau, 1201 Elm Street, Suite 2000, Dallas, TX 75270. (214) 746-6677.

ICDD Clinic on X-ray Powder Diffraction

The Pennsylvania State University will host the 1990 International Center for Diffraction Data Clinic on X-ray Powder Diffraction. The Clinic will consist of two one-week courses: Session I, June 18–22, will cover fundamentals of X-ray powder diffraction; Session II, June 25–29, will cover advanced methods in powder diffraction. The fee for each of the sessions is \$975. The Clinic will be held at the Materials Research Laboratory on Penn State's University Park Campus in State College, PA. A

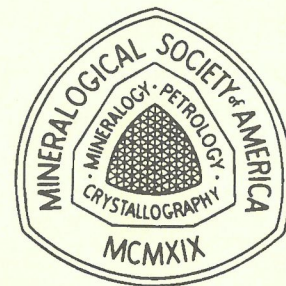
block of rooms has been reserved at the Hampton Inn State College, 1101 East College Ave., University Park, PA 16801; (814)231-1590. The cost is \$50 per night. Attendees should make their room reservations by June 1 and identify themselves as Clinic participants. Registration information may be obtained from: Mario Fornoff, ICDD X-Ray Clinic, JCPDS-ICDD, 1601 Park Lane, Swarthmore, PA 19081.

AGI Receives USGS Grant for Cooperative Program

The U.S. Geological Survey has awarded a grant of \$52,234 to the American Geological Institute for a 9-month cooperative education program. This grant covers topics included in AGI's Earth Science Teacher Enhancement sphere of activities. Objectives include identifying areas in which the USGS could provide materials to earth

science teachers, identifying published material available from the USGS that can be used or revised for use in the public schools, advising and participating in planning and conducting educational outreach programs, and serving as educational advisor to the USGS Earth Science Education Committee.

FROM THE PRESIDENT



Spring has come to Norway after a winter that was mild by New England standards, and, near sea level, field work is already underway. The season is advancing so fast that at this date (May 1) that it is light enough to read well past 9 P.M. and again at 4 A.M. During the last month I lectured at Bergen and Oslo, and next week I travel north by coastal express steamer to lecture at Tromsø, well beyond the Arctic Circle. Spring brings warm weather but snow is still possible. This we found out last weekend as we wandered with a group from Bergen in a horizontally blowing storm across the naked rock landscape of mantle tectonites and ultramafic cumulates of the Island of Leka.

During my recent travels in the center of Europe and in Scandinavia it has been my pleasure to meet Society members engaged in mineralogical research and teaching at many levels. It is good to learn first hand of the broad appreciation of the work of our Society, and we look forward to even broader participation outside North America in the future. The following members were among the many people I met: At Kiel University, Germany—Michael Czank, Hermann Gies, Friedrich Liebau, and John and Renate Schumacher, as well as Theodore Razakamanana, the Society's only member from Madagascar. At Fribourg, Switzerland—Ernst Niggli, Ronald Chessex, and Zachary Sharp. At Lund, Sweden—Embaie Ferrow, and at Uppsala—Hans Annersten. At Oslo, Norway—Jan Kihle.

Since the last issue of *The Lattice*, the most important item to report is the Executive Committee decision to move the Society Business Office from its present location to a nearby one in downtown Washington. During January, Office Manager, Susan Myers

visited 12 sites, eventually got written proposals on three sites, and made detailed comparative analyses of two sites for the Executive Committee and the Management Committee, chaired by Gordon Nord. The new location is easily accessible by subway, at the same stop as the present location. The available space is about 200 square feet larger than our present office, which will allow back issues of the *Reviews in Mineralogy* to be moved into the office from the present less accessible storage space across the river in Virginia. Back issues of *American Mineralogist* will be consolidated in a smaller storage unit, thus saving storage rental as well as much staff travel. Office Manager Myers is currently awaiting the lease agreement and after the Society's legal counsel has reviewed it, we will commit to a 5-year lease. The office plans to move this summer, probably in June.

During the last two months I received the following letters: A letter of thanks from Ross Angel, recipient of the Crystallography Research Award. A letter from R. A. Howie concerning good progress in the search to find a permanent successor to him at such time as he retires from the Editorship of *Mineralogical Abstracts*. A letter from Prof. Otto C. Kopp, pointing out the upcoming centennial in 1995 of the discovery of X-rays by Roentgen, and wondering if anyone in the M.S.A. has considered a suitable way to commemorate this event.

A task set for me last November was to work on a design for the Public Service Medal to be first awarded at Dallas in October. The first recipient will be Malcolm Ross. A preliminary design idea is now before the Council and the Committee on the Public Service Award, chaired by Don

Lindsley. The objective is a design that clearly shows the role of mineralogy (in the broadest sense) in public service. Lindsley should be contacted directly if you have ideas of other persons whose activities have been outstanding in the public service.

The Officers and Council are now preparing for a busy meeting to be held in Baltimore on May 29 in connection with our spring Joint Meeting with AGU. As before, if there are matters of interest or concern to you, please contact me through Society Headquarters.

Peter Robinson

Peter Robinson
President

EDITOR'S NOTE

I am pleased to have been asked to assume the position of Editor of *The Lattice*. Susan Myers has done an excellent job in providing an informative newsletter to our Society's members and I look forward to working with her.

Deadlines for receipt of material for the August, November, and February issues are August 1, November 1, and February 1 respectively. Please keep these dates in mind when submitting information regarding activities where registration or other deadlines are important. Short articles of general interest or on topical subjects are welcome.

Contributions may be sent to me at: Marta Flohr, U.S. Geological Survey, National Center MS 959, Reston, VA 22092. I may be reached at (703) 648-6761 or FTS 959-6761.

FOREIGN CORNER

Dateline: April, Johannesburg

How research funds are distributed is a topic of concern to many members of MSA. The writing of a 20 page proposal, often with appendices, to NSF and other grant awarding agencies is a major effort for both proposer and reviewers. In contrast, the Canadians seem to manage with 3 to 5 page proposals and yet still do excellent mineralogical research. However, South Africa has gone a step further. Instead of funding proposals they have devised a scheme to rank research scientists and provide them with specific guaranteed funds for a finite time, often five years, which they can use for any research they choose.

The scientists provide a self-assessment and are reviewed by at least three peers chosen within their field from South Africa or abroad. A panel of scientists appointed by the Foundation for Research and Development (FRD) also reviews the various scientists and considers the remarks made by the outside reviewers. In cases of conflict a small group of senior members of the FRD, an almost autonomous branch of Government's Council for Scientific and Industrial Research (CSIR) resolves the dispute. The scientists are ranked A, B, C, D, E, P, X, Y, and Z. A is the highest ranking and is consistent with the scientist having an international and active reputation in his/her field. Y is the category for young investigators who have just completed their Ph.D.s, P is almost equivalent to NSF's Presidential Young Researcher, whereas X and Z are as implied by the letter! Quality of publication, past research, scientific stature, both national and international, and teaching are all considered important in the ranking rather than numbers of publications and amount of previous funds received for research.

After having been ranked the scientist writes a short proposal to the FRD. In this proposal the scientist will justify and request a certain amount of funding. A small committee in the FRD will review the application in the light of total available FRD funds and the scientist's ranking will fix the actual amount he or she will be funded for 5 years. After three years the scientist is re-evaluated. If upgrading occurs (e.g. from B to A) the scientist may receive more funds. However, if downgrading occurs the funds are not necessarily decreased. This downgrading is seen as a warning and if no improvement is obvious at the end of the 5 year cycle the scientist will receive less funding for the next cycle.

The system has been in use in South Africa since about 1985 and appears to be working well, although as with any ranking system there are proponents and opponents. The country has the advantage that the number of scientists involved is much smaller than that of the US. Just less than 1500 scientists in all disciplines were evaluated by September 1989; of these 126 were Earth Scientists. One advantage of the system is that the process ranks the scientist and provides support for five years allowing the person freedom to undertake research projects at this or her discretion. Young investigators are provided with modest funds for three years to enable them to start projects and produce results and publications. Major items of equipment, if required, form the basis of separate requests, as do consortium style projects. With the knowledge of a three year review the onus is on the scientist to be productive, if one wishes to retain or increase the level of funding received.

Henry O. A. Meyer

Introduction of Marta Flohr as Editor of the MSA Lattice

In November, 1989 the MSA Council voted to establish a new position within the Society, that of Editor of *The Lattice*. Marta J.K. Flohr has been selected to be the first to serve in this position. Marta has been employed since 1980 as a research geologist with the U.S. Geological Survey. Her fields of speciality are igneous and metamorphic petrology with interests presently concentrated on studies of alkaline igneous rocks and metamorphic manganese deposits. Marta will solicit, co-ordinate, and edit contributions to the four yearly issues of our newsletter. This will be of much help to Susan Myers, our Office Manager, who in the past has had to do most of the work of composing the newsletter. We are sure Marta will make *The Lattice* even more successful and we thank her for accepting this important task.

IN MEMORIAM

We regret to announce the passing of the following MSA member. The Society extends its condolences to the family and friends of this scientist.

Pabst, Adolf, Member, 1930

MEMBERS IN THE NEWS

Gerald M. Friedman, a Fellow of the Society, will receive Honorary Membership at the June 1990 convention of the American Association of Petroleum Geologists (AAPG) to be held in San Francisco. He will be the only geologist to hold Honorary Membership in all three national and international soft-rock geological societies: AAPG, Society of Sedimentary Geology (SEPM) (formerly Society of Economic Paleontologists and Mineralogists), and International Association of Sedimentologists.

Linus Pauling, twice a winner of the Nobel Prize, received the National Science Board's Vannevar Bush Award in acknowledgment of his outstanding contributions

to science and society. Pauling, a seminal figure in the history of chemistry, has made major contributions in several areas of scientific study, including crystallography, molecular structure, molecular biology, genetic disease, antibodies, macromolecular evolution, and the nature of memory.

Roger G. Burns, Professor of Mineralogy and Geochemistry at the Massachusetts Institute of Technology, received a Guggenheim Fellowship Award for 1990-91 from the John Simon Guggenheim Memorial Fund. Roger plans to carry out research on oxidation products of iron sulfide and silicate minerals to elucidate poorly crystalline materials formed by

chemical weathering on terrestrial planets such as Mars and Venus. He also plans to update and revise his 1970 book *Mineralogical Applications of Crystal Field Theory*. The research will be conducted at the University of Manchester, England in collaboration with Professor David J. Vaughan.

Annemarie Meike, currently at Lawrence Livermore National Laboratory, has been awarded a Senior Fulbright grant to conduct mineral physics research in micromechanics for one year at the Australian National University in Canberra, Australia.

WELCOME!

The following new members and students have joined MSA effective January 1, 1990. Welcome! Applications for membership may be obtained from the Business Office, 1625 I Street, N.W., Suite 414, Washington, D.C. 20006; (202)775-4344.

Andersson, Ulf B., Department of Mineralogy & Petrology, Uppsala University, Uppsala, Sweden S-75122. (ST-90)IP. Sponsors: Henrik Skogby and Hans Annersten.

Blum, Joel D., Division of Geology & Planetary Sciences, Caltech, 170-25, Pasadena, CA 91125. O:(818)356-6143. H:(818)355-7931.(ST-90)GE. Sponsor: MSA.

Bricker, Garth A., 410 E. Elder, Fallbrook, CA 92028. H:(619)728-1333.(M-90)MI. Sponsor: MSA.

Cochran, M. Ford, 572 Whitney Avenue, New Haven, CT 06511. O:(203)432-3136. H:(203)497-8081.(ST-90)GE. Sponsor: MSA.

Dalia, Andrea, Le Magazin de la Marine, Marina Bale des Anges, Villeneuve Loubet, France 06270. H:(33)93734994.(M-90)MI. Sponsor: MSA.

Fabries, Jacques, Lab Mineralogie Museum, 61 Rue Buffon, Paris, France 75005. O:(1)40793521. H:(1)43452987. (M-90)IP. Sponsors: Danielle Velde and David C. Smith.

Fernandez-Diaz, M. Lourdes, Department of Cristalografia and Mineralogia, University Complutense, Madrid, Spain 28040. O:(341)2433468. H:(341)4581215.(M-90)MI. Sponsors: A. Putnis and Andrew G. Christy.

Gareau, Susie A., Department of Earth Sciences, Carleton University, Ottawa, Canada G1S 5B6. O:(613)788-4421. H:(613)237-7716.(ST-90)MP. Sponsors: George Y. Chao and Elizabeth MacLellan.

Grigsby, Charles O., Mail Stop J576, Los Alamos National Laboratory, Los Alamos, NM 87545. O:(505)665-2466. H:(505)662-2431.(M-90)GE. Sponsors: David L. Bish and Steve J. Chipera.

Hornibrook, Edward R. C., 684 Graham Avenue, Fredericton, NB, Canada E3B 1J9. H:(506)455-8401.(ST-90)GE. Sponsor: Lowell Trembath.

Junta, Jodi, Geology Department, Stanford University, Stanford, CA 94305. O:(415)723-1010. H:(415)326-7409. (ST-90)GE. Sponsors: M.F. Hochella, Jr. and C.M. Eggleston.

Kaspar, Jeffrey, 6600 Dorr Street #184, Toledo, OH 43615. O:(419)241-7127. H:(419)866-5493.(M-90)MI. Sponsor: Michael W. Phillips.

Lee, Sung Rock, P.O. Box 5 (Kier), Daedeok Science Town, Daejeon, Korea 302-343. O:(042)8619700/5123. H:(042)6270023.(M-90)CM. Sponsor: MSA.

Lieftink, Dick J., Park Arenberg III, De Bilt, The Netherlands NL3731ER. O:(030)534958. H:(030)201697.(ST-90)MI. Sponsors: Timo G. Nijland and Maarten A. Th. M. Broekmans.

Liu, Ming, Department of Geological Sciences, Box 1846, Brown University, Providence, RI 02912. O:(401)863-1923. H:(401)861-6328.(ST-90)MI. Sponsors: Richard A. Yund and Jan Tullis.

Londeree, G. Paul, 3914 Hanover Avenue, Richmond, VA 23221. O:(804)649-7035. H:(804)353-6546.(M-90)SP. Sponsor: MSA.

Lynton, Stephen J., 4207 37th Street, NW, Washington, DC 20008. O:(301)454-3548. H:(202)244-6469.(ST-90)GE. Sponsors: Philip A. Candela and Ann G. Wylie.

MacLellan, H. Elizabeth, Department of Earth Sciences, Carleton University, Ottawa, Canada K1S 5B6. O:(613)788-4427. H:(613)238-5412.(ST-90)IP. Sponsors: George Y. Chao and C. Anglin.

Maffei, Laura, Department of Geological Sciences, AJ-20, University of Washington, Seattle, WA 98195. O:(206)789-2613. H:(206)543-1996.(ST-90)MP. Sponsors: Clifford Todd and Donna L. Whitney.

Malezieux, Jean Marie, Universite de Bordeaux 3, Institut de Geodynamique, Talence, France 33405. O:(56)808072. H:(56)34 31 65.(M-90)MI. Sponsors: Georges Calas and Christian Willaine.

Mandernack, Kevin, Scripps Institute of Oceanography, University of California - San Diego, A-008, La Jolla, CA 92093. O:(619)534-0638. H:(619)587-1561. (ST-90)GE. Sponsors: Jeffrey E. Post and Peter J. Heaney.

Mills, James G., Jr., Geology Department, Monmouth College, Monmouth, IL 61462. O:(309)457-2356. H:(309)734-4625. (M-90)MI. Sponsor: MSA.

Murakami, Takashi, Environment Safety Res, Japan Atomic Energy Research Institute, Tokai, Ibaraki, Japan 319-11. O:(0292)82 5872.(M-90)MI. Sponsor: Katherine Smith.

Pautov, Leonid A., Ilmenny National Park, Miass 1, Chelyabinskaya Oblast, USSR 456301.(M-90)MI. Sponsors: Forrest E. Cureton II.

Reed, Marshall, Department of Energy, CE-342, Washington, DC 20585. O:(202)586-8076. H:(703)978-0283. (M-90)GE. Sponsor: MSA.

Roberts, Sheila J., Department of Geosciences, University of Arizona, Tucson, AZ 85721. O:(602)621-6002. H:(602)623-6772.(ST-90)GE. Sponsors: Barbara Dutrow and Eleanor Snow.

Rosen, Erik, Department of Inorganic Chemistry, Umea University, Umea, Sweden S-90187. O:(4690)165167. (M-90)PE. Sponsors: S.K. Saxena and Hans Annersten.

Sen, Cuneyt, Department of Geology, University of New Brunswick, Fredericton, NB, Canada E3B 5A3. O:(506)453-4803. H:(506)450-6196.(ST-90)GE. Sponsors: John Todd Dunn and Lowell T. Trembath.

Sonnenthal, Eric L., Department of Geological Sciences, University of Oregon, Eugene, OR 97403. O:(503)686-4579. H:(503)484-4824.(ST-90)IP. Sponsors: Jack M. Rice and A. Dana Johnston.

Tinsley, Rhonda J., Southern Company Service, 44 Inverness Parkway, Birmingham, AL 35243. O:(205)877-7935. (M-90)EG. Sponsor: MSA.

Ullmann, Sabine, Am Weissenberg 16-18, Aachen, West Germany 5100.(ST-90)PE. Sponsors: Dr. Jurgen Glinnemann and Th. Hahn.

Vogels, Roland, Van Brakelstraat 21 Bis, Utrecht, The Netherlands NL3572XP. H:(030)711581.(ST-90)MP. Sponsors: Maarten A. Th. M. Broekmans and Timo G. Nijland.

Wells, Steven P., 127 Franklin Road, Suite 310, Brentwood, TN 37027. O:(615)371-8097.(M-90)MI. Sponsor: MSA.

MEETING CALENDAR 1990

May/June

- 29- 1 AGU/MSA Spring Meeting in Baltimore, Maryland
Details: MSA Business Office, 1625 I Street,
NW, Suite 414, Washington, D.C. 20006.
Telephone: (202)775-4344. FAX: (202)775-0018.

June/July

- 28- 3 15th General Meeting of the IMA in Beijing, China.

July

- 11 Deadline for receipt of abstracts for the 1990
GSA/MSA Annual Meeting.
Details: GSA, P.O. Box 2020, Boulder, CO 80301.

September

- 17-19 International Conference on Electronic Materials
in Newark, New Jersey. Details: MRS Headquarters,
9800 McKnight Road, Pittsburgh, PA 15237.
ATTN: ICEM-90.
Telephone: (412)367-3003. FAX: (412)367-4373.

October

- 6-11 Clay Minerals Society 27th Annual Meeting in
Columbia, Missouri. Details: Professor W.D. Johns,
Department of Geology, University of Missouri,
Columbia, MO 65211. Telephone: (314)882-3785.
- 26-28 MSA 1990 Short Course on Mineral-Water Interface
Geochemistry in Pottsboro, Texas.
See article and registration form in this newsletter.

October/November

- 29- 1 MSA/GSA Annual Meeting in Dallas, Texas.
Details: MSA Business Office, 1625 I Street,
NW, Suite 414, Washington, D.C. 20006.
Telephone: (202)775-4344. FAX: (202)775-0018.

December

- 1- 2 MSA Short Course on Modern Methods of Igneous Petrology in San
Francisco, CA.
Details: MSA Business Office, 1625 I Street,
NW, Suite 414, Washington, D.C. 20006.
Telephone: (202)775-4344. FAX: (202)775-0018.
Details and a registration form will appear in the next issue of *The Lattice*.
- 3- 7 AGU Fall Meeting in San Francisco, CA.
Details: AGU, 2000 Florida Avenue,
NW, Washington, D.C. 20009.
Telephone: (202)462-6900 or (800)424-2488.

The Lattice is published quarterly (February, May, August, November) by the Mineralogical Society of America. This newsletter 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: the *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 1990 are \$40 for professional members; \$20 for students. Membership is on a calendar year basis. Individuals who join after January 1, 1990 will be sent all back issues of the journal for volume 75, 1990.

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 1990 volume of the *American Mineralogist* for the annual rate of \$150. 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.

1990 President: Peter Robinson,
University of Massachusetts

Past-President: C.W. Burnham,
Harvard University

Secretary: Maryellen Cameron,
Miami University of Ohio

Treasurer: James A. Whitney,
University of Georgia

Office Manager/Accountant:
Susan L. Myers

Editor of *The Lattice*: Marta Flohr
U.S. Geological Survey
MS959, National Center
Reston, VA 22092

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1625 I Street N.W., Suite 414
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FAX: (202)775-0018

Register now for Mineral-Water Interface Geochemistry short course.

If you are interested in registering for the Fall Short Course: "Mineral-Water Interface Geochemistry", you are encouraged to do so now. The course is limited to the first 115 individuals on a first-come, first-serve basis. The course will take place Thursday, October 25th through Sunday, October 28th. This is just prior to the MSA/GSA Annual Meeting. The short course will be held at the Tanglewood Resort and Conference Center in Pottsboro, Texas, 60 miles north of Dallas. The course will begin with a welcoming reception on Thursday evening and continue until noon on Sunday. Transportation will be provided from the Dallas/Fort Worth airport at approximately 1:30 p.m. and 4:30 p.m. on Thursday. Buses will leave at approximately 2:00 p.m. Sunday afternoon and return participants to the main GSA hotels in Dallas. In addition, registration fees include Volume 22 of the *Reviews in Mineralogy* series, lodging Thursday, Friday and Saturday nights and all meals beginning with the reception and light buffet dinner on Thursday through lunch on Sunday.

Among the recreational facilities that the Tanglewood has to offer are: two lighted tennis courts, three cascading swimming pools, an 18-hole championship golf course, riding stables, boating and fishing on Lake Texoma, volleyball, softball and horseshoe pitching. The resort also has a health facility with weight machines and aerobic classes. So participants can take advantage of these facilities and to promote an informal atmosphere for the exchange of ideas and information, the convenors of the course have devised a schedule of three talks during the morning on Friday, Saturday and Sunday and two talks during the evening on Friday and Saturday. This allows participants to have their afternoons free to enjoy the resort and visit with friends and colleagues.

Scientists have realized for some time that the chemical reactions that take place at surfaces and interfaces play critical roles in many important processes such as sorption, precipitation and growth, corrosion, adhesion, catalysis, lubrication, and so on. Therefore, it is of little surprise that surface science has made major contributions to practically all scientific and engineering disciplines, and the earth sciences are no exception. The 1990 Fall short course on mineral-water interface geochemistry will address geochemical aspects of surface science. Speakers from the US, Canada, Australia, and Switzerland will discuss fundamental aspects of chemical processes that occur at mineral-water interfaces including adsorption,

dissolution, ion exchange, precipitation, catalysis, electron transfer (oxidation-reduction, including photo-redox), and organic interaction. Applications of these topics to more applied subjects, such as the geochemical cycling of certain elements, the mobility of solutes in groundwater systems, ore deposit formation, weathering processes, mineral growth and froth flotation will be explored. The three day meeting is being convened by Michael F. Hochella, Jr. (Stanford University) and Art F. White (USGS, Menlo Park).

Specific topics and speakers include: G.M. Bancroft (Western Ontario), adsorption/reduction reactions of metal complexes on sulfide minerals with implications for ore petrogenesis; G.E. Brown, Jr. (Stanford), spectroscopic studies of chemisorption reaction mechanisms at oxide-water interfaces; W.H. Casey (Sandia), leaching of mineral and glass surfaces during dissolution and chemical weathering; J.A. Davis (USGS), adsorption-desorption reactions at mineral-water interfaces with emphasis on transport of solutes in groundwater; M.F. Hochella, Jr. (Stanford), atomic structure, morphology, composition, and reactivity of mineral surfaces; A.C. Lasaga (Yale), kinetics and modeling of chemical reactions at mineral surfaces; G. Nancollas (SUNY-Buffalo), mechanisms of growth and dissolution of minerals emphasizing carbonates, sulfates, and phosphates; G.A. Parks (Stanford), thermochemical aspects and applications, with emphasis on surface and interfacial free energies; P. Schindler (Univ. of Bern), organic interactions on mineral surfaces; G. Sposito (UC-Berkeley), molecular models of ion adsorption, including statistical mechanical approaches with

applications; W. Stumm (Swiss Federal Institute for Water Resources), oxidative-reductive dissolution, including the role of biota in producing reductive ligands, and geochemical implications; T.D. Waite (Australian Nuclear Science and Technology Organization), photo-redox processes at the mineral-water interface, with implications to the natural environment; A.F. White (USGS), electrochemical reactions on ferrous oxide and silicate mineral surfaces with implications for water chemistry.

One of the primary motivations for convening this short course is to bring new ideas into this rapidly growing and dynamic field, and to explore new applications with all those in attendance. Another important motivation is to bring together aqueous geochemists and mineral surface specialists in order to help hybridize these important and related fields. Consequently, it is anticipated that those attending the course will represent a wide cross-section of geochemical disciplines.

The course lecturers, who will also be writing the companion text, will review all important research in their fields up to the present time. They will develop their subject in a pedagogic fashion starting with easily understood fundamentals, and proceed through advanced applications. Therefore, the course is appropriate for those getting started in the field, as well as researchers who are already well established in it. It is hoped that discussions generated by all in attendance, both during and between lectures, will advance the state of surface and interfacial geochemical research.

PRICES INCLUDE ALL LODGING AND MEALS

	Member	Non-Member
Student		
in double room	\$300.00	\$320.00*
Professional		
in double room	\$465.00	\$505.00*
in single room	\$575.00	\$615.00*

* Includes MSA membership for 1991.

Registrations will be accepted in the order they are received. Individuals interested in the short course are encouraged to complete the registration form on the following page and return it as early as possible to the MSA Business Office, 1625 I Street, NW, Suite 414, Washington, DC 20006. FAX: (202)775-0018. Payment must accompany the registration form.

Registration Form

Mineral-Water Interface Geochemistry
October 25-28, 1990

Return this registration form, completed, to the MSA Business Office, 1625 I Street N.W., Suite 414, Washington, D.C. 20006. FAX: (202)775-0018. Payment must accompany this form. Registration is limited to 115 individuals on a first-come, first-served basis.

Please type or print.

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

Address _____

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

Telephone numbers _____ (office) _____ (home)

Please check appropriate registration category

PRICES INCLUDE ALL LODGING AND MEALS

	Member	Non-Member
Professional: in double room	\$465	\$505*
in single room	\$575	\$615*
Student: in double room	\$300	\$320*

*includes MSA dues for 1991.

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. Should a refund be required, a credit will be applied to your charge card.)

_____ (card number) _____ (name on card-please print)
 _____ (exp. date) _____ (signature)

Please check items as appropriate:

I wish to share accommodations with (your name must appear on the registration form of the individual listed below):

_____ (please print full name and affiliation or city/state)

Please assign me to a room. I am a smoker non-smoker.

Please list any special requirements regarding lodging or meals. _____

Please indicate your preference for the shuttle bus on Thursday, October 25.
 1:30 p.m. 4:30 p.m. I do not plan to use the shuttle bus.

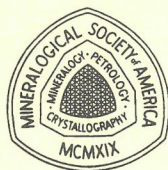
CALL FOR PAPERS

The twelfth Mineralogical Symposium sponsored jointly by Friends of Mineralogy, the Tucson Gem and Mineral Society, and the Mineralogical Society of America will be held in Tucson, Arizona on Saturday, February 16, 1991. The topic of the symposium will be "Azurite and Other Copper Carbonates", which includes descriptive mineralogy, associations or paragenesis, classic localities, etc. An audience of knowledgeable amateurs as well as professional geologists and mineralogists is expected.

If you feel you would like to present a paper, please write or call immediately to Dr. Karen Wenrich, Chairman (USGS, Mail Stop 905, Federal Center, Denver, CO 80225; Telephone: (303)236-1563), with your topic, a few sentences describing the paper, your address and phone number at which you may be contacted. Presentations will be 15 or 20 minutes in length followed by a period for questions. Upon acceptance of topics all authors will be required to submit a 200-300 word abstract by September 30, 1991 which will be published in the January-February issue of *The Mineralogical Record*.

DID YOU KNOW . . .

The Colorado Geological Survey 1990 Publications catalog is now available. Copies of the booklet may be obtained, free of charge, from: Colorado Geological Survey, 1313 Sherman Street, State Centennial Building, Room 715, Denver, CO 80203 or by calling (303)866-2611.



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