



Mineralogical Society of America

FROM THE PRESIDENT

Diamond as Metaphor

A sparkling new year welcomes this, the second issue of *Elements*. How appropriate to emphasize diamond—a substance that epitomizes the scientific significance, the industrial utility, and the exceptional beauty of minerals. Once the exclusive baubles of royalty, diamonds now adorn hundreds of millions of gem-hungry consumers worldwide, while synthetic abrasive diamond is manufactured by the ton. As this issue attests, the mineralogy–petrology–geochemistry community embraces all of these varied aspects of diamond, and more.

Diamond's unique qualities have inspired many metaphors, some more apt than others. The gem trade hawks diamonds as symbols of intrinsic rarity, unrivaled permanence, and exquisite beauty. Such appealing romantic traits tempt the general populace, but every mineralogist recognizes the inherent flaws in these three metaphors. Diamonds are, in fact, relatively common compared to the vast majority of the 4,000-plus known mineral species. Other precious gemstones, including emeralds, rubies, and sapphires, are far scarcer than diamonds. Diamond's reputed permanence is another questionable metaphor, for diamond burns easily to colorless, odorless carbon dioxide gas in a hot flame, as the great French chemist Antoine-Laurent Lavoisier demonstrated more than two centuries ago. And what of beauty? Without laborious expert cutting and tedious polishing, most diamonds would appear to be dull, nondescript pebbles, something the average person would kick aside without a second thought. Only seductive advertising and hype, coupled with strict market control (and not a little hoarding), maintain the steady demand and hefty prices for these treasured stones.

To me diamond more appropriately represents something quite different—discovery and progress through the unmatched power of science to reveal the workings of our natural world. Two centuries ago, the origin of diamond remained a great mystery. Geological discoveries of in situ diamonds in South Africa provided essential clues pointing to the deep, hot genesis and violent surface delivery of diamonds, while crystallographic research revealed the key structural differences between the two carbon polymorphs.

Decades of effort culminated 50 years ago in General Electric's first reproducible synthesis of diamond. Until then, no one knew how to make a diamond. Today, thanks to the cumulative discoveries of scientists and engineers, anyone with a big basement and a few hundred-thousand dollars can do it. The hundred tons of diamond manufactured annually attest to the reality of scientific progress.

Diamond metaphors must thus extend beyond the romantic and utilitarian—diamonds now symbolize knowledge. In recent years diamonds have taken on a new, powerful role as a tool for public education, especially thanks to the extraordinary efforts of

George Harlow. George masterminded the blockbuster diamond exhibit at the American Museum of Natural History. He authored *The Nature of Diamonds*, one of the finest mineral books of our time, and he serves as guest editor of this issue. His vision has brought the art and science of minerals to millions of people.

George Harlow's service to mineralogy extends far beyond his contributions to the diamond story. As Secretary of MSA he has embraced what is probably the Society's most demanding elected office. And, in addition to this unsung labor, George Harlow is, year in and year out, one of the most generous financial contributors to MSA's operating funds. His commitment to our shared goals is inspiring.

Societies, like diamonds, do not achieve their true brilliance and worth without skilled, dedicated individuals and countless unseen hours of labor. As you read this issue of *Elements*, I hope that you, too, are inspired by the joy of our science, and that you feel a renewed sense of commitment to your society.

Robert M. Hazen, President

ELECTIONS 2005

The slate of candidates for the MSA Council elections is as follows:

PRESIDENT: **John W. Valley**

VICE PRESIDENT
(one to be selected):
**Harry Y. (Hap) McSween Jr.,
Barbara L. Dutrow**

SECRETARY: **George E. Harlow**

COUNCILLORS
(two to be selected):
**Jay D. Bass, Roberta L.
Rudnick, Edward Stolper,
and Simon A.T. Redfern**

John M. Hughes continues in office as Treasurer. Continuing councillors are **Mickey E. Gunter, David London, Ross John Angel, and Robert T. Downs.**

Election materials will be available to MSA members in April in time for the voting deadline of August 1, 2005.

Nominations Sought

Nominations must be received by June 15, 2005

The **Roebling Medal** is MSA's highest award and is given for eminence as represented by outstanding published original research in mineralogy.

The **Dana Medal** recognizes continued outstanding scientific contributions through original research in the mineralogical sciences by an individual in the midst of his or her career.

The **Mineralogical Society of America Award** is given for outstanding published contribution(s) prior to 35th birthday or within 7 years of the PhD.

The **Distinguished Public Service Medal** is awarded for distinguished contributions to public policy and awareness about mineralogical topics.

Society **Fellowship** is the recognition of a member's significant scientific contributions. Nomination is undertaken by one member with two members acting as co-sponsors. Form required; contact committee chair or MSA home page.

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Submission requirements and procedures are on MSA's home page: <http://www.minsocam.org>

AMERICAN MINERALOGIST ADDS A THIRD EDITOR



Due to the growth in submissions, especially in Letters-style manuscripts, and with approval of the MSA council, we welcome a third editor to our team: **Dr. Bryan C. Chakoumakos** of Oak Ridge National Laboratory. He will handle all the new Letters submissions and join the editors in other editorial duties.

Dr. Chakoumakos welcomes papers from all areas of Earth science. He is a Senior Staff Scientist in the Center for Neutron Scattering at Oak Ridge National Laboratory. His research at ORNL over the past 17 years has focused on the relationships between the crystal structure and physical properties of a wide range of high technology and Earth materials. He did a postdoctoral fellowship at the University of New Mexico with Rodney C. Ewing studying radiation damage effects in complex oxides and minerals. He

received his PhD from Virginia Tech where he studied mineralogy and crystallography under the guidance of Gerry Gibbs. His undergraduate training is in geology from the University of New Mexico. His professional career as a scientist grew out of a childhood fascination with minerals and crystals.

Letters papers, like all submissions, are submitted via our web-based system at <http://minso-cam.allentrack.net>. Letters are to be no more than 15 double-spaced pages long, and each table or figure counts as a page. This works out to Letters papers being four typeset pages in length, a goal that has been missed in recent times, but one we are all eager to achieve again. Letters are also intended to be timely papers of significance in Earth sciences. A statement should be included when submitting the paper stating the paper's timeliness and significance (either cut-and-paste into the box in the web-based system or include in a cover letter).

INVITATION TO REQUEST A 2005-2006 MSA DISTINGUISHED LECTURER

Since its inception the Distinguished Lecture Program of the Mineralogical Society of America has proven to be a great success. The varied and interesting lectures presented by MSA Distinguished Lecturers have been appreciated by students and faculty at many colleges and universities worldwide. The Council of the Mineralogical Society is again offering the program for the 2005-2006 academic year with the arrangement that the MSA will pay travel expenses of the lecturers, and the host institutions will be responsible for local expenses, including accommodation and meals. The program will include three lecturers, one of whom resides in Europe, and MSA encourages universities to request lecturers. Depending on the response, one or more lecture tours will be arranged outside North America.

Names of the 2005-2006 Distinguished Lecturers and their lecture titles are not yet available, but they will be posted soon on the MSA website. If your institution is interested in requesting the visit of a MSA Distinguished Lecturer, check the website for lecturers and titles and e-mail your request to the Lecture Program Administrator: Dr. Cameron Davidson, Carleton College, Dept of Geology, 1 N College St, Northfield, MN 55057-0001, USA, e-mail: cdavidso@carleton.edu Tel: (507) 646-7144, Fax: (507) 646-4400. The Lecture Program is designed to run from September, 2005, through April, 2006. Lecturer requests received by **May 12, 2005** will be given priority. Late applications will be considered on a space-available basis. In making your request please include (1) airport proximity from, and travel time to, your institution; (2) the name of a contact person at your institution for the months of May and June (when Lecturer schedules will be assembled); (3) contact e-mail addresses and phone numbers; and (4) flexibility on Lecturer preference. (5) Schools outside the U.S. should indicate starting and ending dates of academic terms.

Please note that because of travel and schedule constraints it is normally not possible to satisfy requests for tightly constrained dates such as seminar days.

OUTSTANDING UNDERGRADUATES RECOGNIZED

The Society welcomes the following exceptional students to the program's honor roll and wishes to thank the sponsors for enabling the Mineralogical Society of America to join in recognizing them. MSA's American Mineralogist Undergraduate (AMU) Award is for students who have shown an outstanding interest and ability in mineralogy, petrology, crystallography, and geochemistry. Each student is presented a certificate at an awards ceremony at his or her university or college and receives an MSA student membership, a Reviews in Mineralogy or Monograph volume chosen by the sponsor, student, or both.

The MSA website lists past AMU awardees and instructions on how MSA members can nominate their students for the award.

Bryan Anderson
Louisiana State University
Sponsored by Dr. Barbara L. Dutrow

Aaron S. Bell
University of Oklahoma
Sponsored by Dr. David London

Jennifer E. Campbell
Williams College
Sponsored by Dr. Reinhard A. Wobus

Stanley Dalbec
University of Hawai'i at Manoa
Sponsored by Dr. Julia E. Hammer

Sarah Lynn Durham
University of Calgary
Sponsored by Dr. David R. M. Pattison

Emil D. Freeman
Eastern Michigan University
Sponsored by Dr. Christine M. Clark

Allison Gale
University of Maryland
Sponsored by Dr. Michael Brown

Brian Anthony Moss
Oklahoma State University
Sponsored by Dr. Elizabeth Catlos

Stephen F. Poterala
Clemson University
Sponsored by Dr. Richard D. Warner

Ashley E. Shuler
Rensselaer Polytechnic Institute
Sponsored by Dr. Jonathan D. Price

Stanley P. Skotnicki
State University of New York
at Buffalo
Sponsored by Dr. Gary S. Solar

Paula Marie Zelanko
University of Maryland
Sponsored by Dr. Michael Brown

The Mineralogical Society of America

2006 Grants for

RESEARCH IN CRYSTALLOGRAPHY, MINERAL PHYSICS OR CHEMISTRY, AND MINERALOGY

*from the Edward H. Kraus Crystallographic Research Fund
with contributions from MSA membership and friends*

STUDENT RESEARCH IN MINERALOGY AND PETROLOGY

from an endowment created by MSA members



Selection is based on the qualifications of the applicant, the quality, innovativeness, and scientific significance of the research of a written proposal and the likelihood of success of the project. There are three US\$5000 grants with no restrictions on how the funds may be spent, as long as they are used in support of research. Application instructions and forms are available from the MSA home page, <http://www.minsocam.org>, or the MSA offices. Completed applications must be received by June 1, 2005.