Laudise Addresses Congressional Advanced Materials Caucus

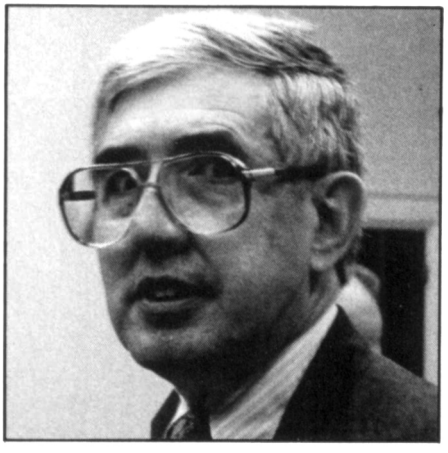
The Congressional Advanced Materials Caucus is a group of senators and representatives who have particular interest in materials science and engineering and its relationship to the health of the nation. This group (see box) along with congressional staff and interested third parties meets periodically for expert briefings on various aspects of the materials fields and how government can help promote materials for the benefit of the United States.

During a briefing in February 1990, Praveen Chaudhari of IBM provided insights into the relevance of materials as gleaned through the National Academies' Materials Science and Engineering Study. At the same event, Mark Newkirk, president of USACA (United States Advanced Ceramics Association), explained why the ceramics industry requires assistance in moving advanced ceramic science and technology into the marketplace. (See "USACA Outlines Advanced Ceramics Commercialization Plan" beginning on p. 29 in the November 1990 *MRS BULLETIN*.)

During the most recent briefing on September 26, Robert A. Laudise of AT&T Bell Laboratories spoke to the Caucus on the importance of materials processing. His emphasis on materials synthesis and processing paralleled the findings of the Academies' MS&E Study. The Study found this area undersupported in the United States. Laudise's presentation, entitled "Developing a Vision for Materials Processing in the 1990's: The Role of National Policy," also echoed the theme of the Federation of Materials Societies' Eleventh Biennial Conference, held June 1990 in Williamsburg, Virginia. (See p. 82 in the October 1990 *MRS BULLETIN* for a report on the conference.) Laudise chaired that conference and based his presentation to the Caucus on a summary of the conference's results.

After describing what processing is and why it is vital to manufacturing and national competitiveness, Laudise explained why the United States is behind in this area and what could be done, by both practitioners and government, to remedy the situation. Several of the recommendations he cited came from the FMS Biennial Meeting.

Comparing the United States with its Japanese and European counterparts, Laudise highlighted the areas needing attention—such as changes in industry's financial environment so that capital can be more "patient," and incentives to take the longer term view. He encouraged the adoption of policies that would induce U.S. industry to give greater emphasis to product quality, which is highly processing dependent. Laudise enjoined universities to provide more relevant curricula in processing. He also encouraged both government and the entire materials community to invest greater effort in science and math education in the lower grades to improve the field's human resource pool. Central to Laudise's recommendations was his admonition for a greater degree of cooperative research and development between the producers of R&D and the consumers of R&D in order to move scientific enterprise into the marketplace.



Robert A. Laudise briefs the Congressional Advanced Materials Caucus on the importance of materials processing.

Laudise painted a dire picture of the path the U.S. is presently taking, and he challenged those present to pursue corrective actions soon.

The Caucus briefing was organized and hosted by the Federation of Materials Societies. Copies of the report from the FMS Biennial Meeting, upon which the briefing was based, can be requested from: Federation of Materials Societies, 1707 L Street NW, Suite 333, Washington, DC 20036; telephone (202) 296-9282).

MRS Office of Public Affairs
Washington, DC

Congressional Caucus on Advanced Materials

Membership, July 12, 1990

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Tim Valentine (D-NC)	**John McCain (R-AZ)**
Helen Delich Bentley (R-MD)	Harry Reid (D-NV)
Jack Buechner (R-MO)	William V. Roth, Jr. (R-DE)
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MS&E Regional Meetings Pursue Study Implementation

The National Academies' Materials Science and Engineering Study, begun in 1985 and completed toward the end of 1989, is the basis for ongoing meetings to consider implementing its recommendations. Late last year after the appearance of the Study, the Assistant to the President for Science and Technology, D. Allan Bromley, wrote to National Academy of Sciences President Frank Press requesting that the National Academies sponsor regional meetings to bring forward prioritized recommendations for implementing the MS&E Study. (A description of the Study's recommendations can be found in the article beginning on p. 27 in the October 1989 *MRS BULLETIN*.) As the Study's final report was being prepared, the need to select a manageable set of actionable priorities from the large number of opportunities and needs identified by the Study became obvious.

The regional meeting mechanism can involve a large fraction of the materials science and engineering community in determining priorities on the national level. At the same time, the meetings are expected to strengthen local ties between government, university, and industrial R&D activities.

Four regions were defined: the Northeast, Southeast, Midwest, and Far West. Each region was charged to prioritize recommended actions. The recommendations would then be compiled and presented to the Office of Science and Technology Policy.

At this writing all four regions have held meetings. The Northeast region was the first, holding its meeting on March 22, 1990 in Princeton, New Jersey. The Far West region met September 6-7 in Irvine, California; the Southeast region, September 10-11 in Gainesville, Florida; and the Midwest region, September 16-17 in Argonne, Illinois. The steering committees were chaired by Peter Eisenberger of Princeton University (Northeast); Gerd Rosenblatt of Lawrence Berkeley Laboratory, Al Narath of Sandia National Laboratory, James Langer of the University of California at Santa Barbara, and Ken Jackson of the University of Arizona (Far West); Bill R. Appleton of Oak Ridge National Laboratory and Reza Abbaschian of University of Florida (Southeast); and I. Melvin Bernstein, Illinois Institute of Technology (Midwest).

Similar in format, each regional meeting briefed attendees on the MS&E Study's background and the OSTP's charge to the regional meetings. Issues were identified and addressed by subgroups, who consolidated and reported their deliberations to the full group. The preparation for and evaluation of the results of each meeting were closely coordinated with input from the other regional meetings. Each regional meeting has reflected, however, in its attendance and selection of topics, the interests and needs of the local region as well as overarching national considerations. The result has been a healthy mix of regional and national issues.

James Langer, Gerd Rosenblatt, Kenneth A. Jackson, and Al Narath (clockwise from upper left), steering committee chairs for the Far West regional meeting.

Official published results from the regional meetings are not yet available. The first opportunity to combine results from the four meetings is scheduled for November 29, 1990. On January 15, 1991, a combined report will be presented to the OSTP. Public unveiling of the results of the regional meetings, and most probably a prioritized list of recommendations for community examination and support, is scheduled for the meeting of the Solid State Sciences Committee, February 27, 1991 at the National Academy of Sciences in Washington, DC. (A two-day Materials Forum, held in conjunction with the SSSC Forum and sponsored by MRS and other technical societies, will, in part, further discuss the regional meetings' results.)

The consensus at all the regional meetings was that the time is ripe to heighten awareness of the importance of materials

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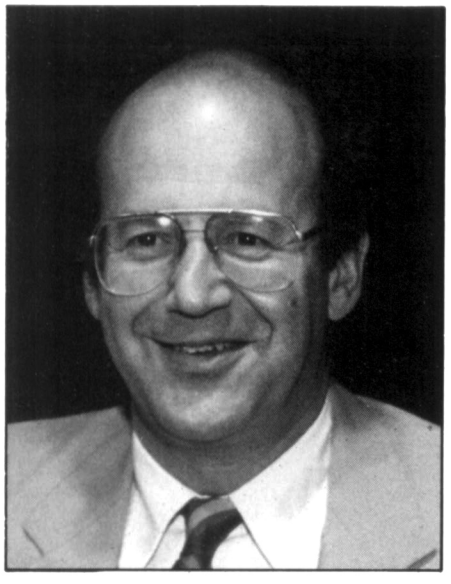
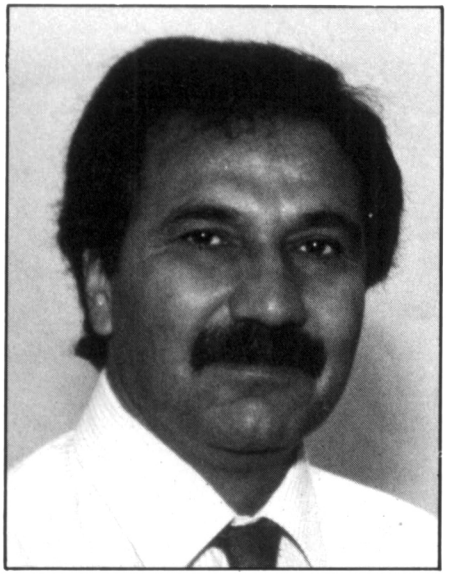
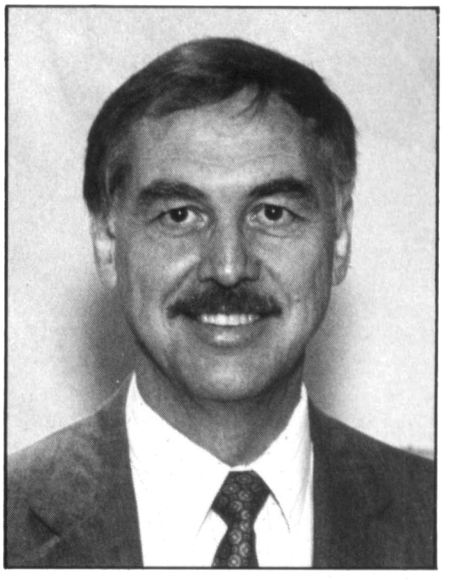


Peter Eisenberger, steering committee chair for the Northeast regional meeting.





Reza Abbaschian (left) and Bill R. Appleton, steering committee chairs for the Southeast regional meeting.

science and engineering and to pursue more focused support for the field. OSTP, Congress, and the federal agencies are currently showing intense interest in fostering several types of materials-related initiatives. This is a rather unusual confluence of potential support for implementing the MS&E Study's recommendations and all attendees at the regional meetings demonstrated great interest in pursuing the opportunity while government seems receptive.

The chairs of the regional meeting steering committees intend to coordinate their final report and make it consistent with other reports dealing with materials, such as the Advanced Materials Program Plan of the National Critical Materials Council, the National Action Plan for Advanced Superconductivity R&D, and the various lists of critical technologies issued by the Departments of Commerce, Defense, and Energy, etc.

Even without seeing the final recommendations from the regional meetings, we can anticipate that they will consider programs that merit greater emphasis and identify enabling technologies that need to be watched closely. The facilities available to support materials science and engineering at universities, industries, and government institutions will be addressed, along with their collaborative use. The barriers to pursuing collaborative materials science and engineering programs among university, federal, and industrial laboratories will be identified and the means to overcome those barriers will be suggested. Ways to further access and enhance private and state government-funded initiatives will be examined. Undersupported areas that are bottlenecks to progress will be identified. And, although last in this list, clearly seen as very important by the regional meeting participants are strong new initiatives to enhance science and math pre-college education programs to feed talent into materials science and engineering and into science and technology in general.

I. Melvin Bernstein (left), steering committee chair for the Midwest regional meeting, confers with Kathleen C. Taylor, chair of the MRS External Affairs Committee.

It then becomes the OSTP's turn to take the collective wisdom of the regional meetings to the next stage of implementation. This might be through endorsing funding emphases by the agencies and supporting legislation to further the regional recommendations.

To set priorities from among a far greater number of choices than can be fully supported by government and other sources is a formidable task. The materials science and engineering community's apparent inability to do this in the early 1980s was the initial rationale for pursuing the MS&E Study. The ultimate test of this community's resolve to "get its act together," as suggested by the congressional and executive branch supporters of materials of a decade ago, has apparently come. All signs are that the regional meeting process is working.

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