National Manufacturing Initiatives

This issue of the Current Awareness Bulletin is the first of a two-part survey of some of the current manufacturing initiatives throughout industry and government. While this is not a comprehensive listing, it is indicative of the wide variety of manufacturing programs under way.

Technology Reinvestment Program

The Technology Reinvestment Project (TRP) is a six-agency, dual-use technology investment effort that includes the Departments of Defense, Commerce, Energy, and Transportation; the National Science Foundation; and the National Aeronautics and Space Administration. It was formed to execute eight statutory programs enacted by Congress in the Defense Technology Conversion, Reinvestment, and Transition Act of 1992.

These eight programs have common requirements including participation by "partnerships," cost sharing between those partnerships and the federal government, and a focus on assisting small businesses and defense-dependent businesses. It is the continuing mission of the TRP to stimulate the transition to a growing, integrated, national industrial capability that provides the most advanced, affordable, military systems and the most competitive commercial products. TRP programs are structured to expand employment opportunities in dual-use U.S. industries and demonstrably enhance U.S. competitiveness. The TRP fulfills its mission through the application of defense and commercial resources to develop dual-use technologies, to deploy manufacturing and technology assistance to small firms, and to establish education and training programs that enhance U.S. manufacturing skills and target displaced defense industry workers.

Continued on page 2
The TRP is conducting two competitions in fiscal 1994. In the first competition Part 1, “Focused Solicitation,” seeks technology development proposals in the following areas:

- High Density Data Storage Systems
- Object Technology for Rapid Software Development and Delivery
- Interoperability Testbeds for the National Information Infrastructure
- High Definition Systems Manufacturing
- Low-Cost Electronic Packaging
- Uncooled Infrared Sensors
- Environmental Sensors

Part 2 includes technology deployment via Manufacturing Extension Centers. A Manufacturing Extension Center is an organization that works directly with small- and medium-sized manufacturers (fewer than 500 employees) to assist them in using technology to improve their competitiveness or reduce their dependence on defense customers. A Manufacturing Extension Center helps companies assess their needs, improve business practices, strengthen and provide training for their work force, and adopt appropriate advanced technology; it helps manufacturers retain or increase jobs and move to more high-skill, high-wage jobs.

A second TRP 1994 solicitation will address a broader set of Technology Focus Areas (including “Other”) for Technology Development and including Technology Deployment, Manufacturing Education and Training, and Small Business Innovation Research (SBIR). The announcement for this solicitation will be issued later this year.

Information on current TRP solicitations is available from: 1-800-DUAL-USE (1-800-382-5873)

Manufacturing Extension Partnership

The National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP) is a nationwide network of organizations to support U.S.-based manufacturers in increasing their competitiveness nationally and internationally through ongoing technological advancement. NIST is building and coordinating the partnership to help smaller manufacturers tap into regional and national sources of information, knowledge, and insight into the use of modern manufacturing and production technologies.

When fully developed, the partnership will establish over 100 manufacturing extension centers nationwide by 1997 to assist manufacturers to modernize their production capability.

The partnership includes four major elements:

- regionally based Manufacturing Technology Centers (MTCs), providing hands-on technical assistance to small and mid-sized manufacturers
- smaller, satellite operations called Manufacturing Outreach centers, some affiliated with an MTC
- the State Technology Extension Program (STEP), providing grants to help states build the infrastructure needed for technology transfer efforts
- the Links Program to pull together—both electronically and otherwise—not only the NIST-affiliated offices but also all other federal, state, local, and university technology transfer entities into one national network.

The philosophy of the MEP is to take maximum advantage of programs already in place. It avoids duplication of efforts among existing technology assistance organizations and concentrates on matching company needs to available help regardless of the source.

Established in 1992, the MEP builds on the MTC and STEP programs, which were created under the Technology Competitiveness Act of 1988.

For more information on the MEP contact: Manufacturing Extension Partnership, phone: 301-975-5020, fax: 301-963-6556, e-mail: mepinfo@micf.nist.gov
Malcolm Baldrige National Quality Award

First presented in 1988, the Malcolm Baldrige National Quality Award has quickly become both the U.S. standard of quality achievement in industry and a comprehensive guide to quality improvement.

Congress established the award to raise awareness about quality management and to recognize U.S. companies that have successful quality management systems. The award was named in honor of Malcolm Baldrige, who served as Secretary of Commerce from 1981 to 1987. Baldrige was a strong proponent of quality management and helped draft an early version of the legislation that was eventually named after him.

The award program, developed and managed by the National Institute of Standards and Technology (NIST) with the cooperation and financial support of the private sector, recognizes quality achievements in three categories:

- Manufacturing
- Service
- Small Business

Up to two awards can be made in each category, each year. Applications for the award undergo a rigorous evaluation by an independent review board composed of quality experts from the private and public sectors. Examiners conduct on-site reviews at firms that receive high scores after an initial screening. All applicants receive a written summary that identifies their strengths and points out areas for improvements.

Although the major focus of the award is on results and customer satisfaction, it is not given for specific products or services. To win the award, a company must have a world-class system for managing its processes and its people. This system should ensure continuous improvement in the product or service and provide a way of satisfying and responding to the customers.

The award's guidelines include seven key areas of quality management and performance: Leadership; Information and Analysis; Strategic Quality Planning; Human Resource Development and Management; Management of Process Quality; Quality and Operational Results; Customer Focus and Satisfaction.

For more information contact:: NIST Office of Quality Programs, phone: 301-975-2036, fax: 301-948-3716, e-mail: oqp@micfnist.gov.

National Machine Tool Partnership

The National Machine Tool Partnership (NMTP) represents a coordinated effort to strengthen the technological capabilities of America's machine tool builders. In so doing, it aims to enhance the global competitiveness of the U.S. machine tool industry.

Since early 1993, NMTP experts have helped machine tool companies solve their problems by sharing the Department of Energy's (DOE) world-class technology. This assistance is given in a timely fashion with a minimum of legal and administrative paperwork. Companies large and small access the NMTP through a toll-free phone number (1-800-358-6652). They are immediately connected with a knowledgeable individual who can arrange assistance for technical consultation, problem analysis and simulation, technology demonstrations, and equipment benchmarking from one of the partnership's five Machine Technology Access Centers: Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Sandia National Laboratories, Oak Ridge National Laboratory and Y-12 Plant, and Kansas City Plant.

For four decades, specialists at DOE centers have produced parts and systems for America's nuclear weapons program, fusion research and other DOE projects, as well as for the Department of Defense and the National Aeronautics and Space Administration.

In doing work for critical national programs, the DOE national laboratories have developed strong capabilities in metrology, precision engineering and manufacturing, controls, modeling, machine tool design and development, and reduction and elimination of hazardous wastes in the machining process.

The NMTP task force constructed a vision for America's machine tool industry in the year 2000. This vision encompasses infrastructure, industry image, profit margin, work force size, world market status, and technology.

For more information on the National Machine Tool Partnership contact: Partnership Office, DP 4.3, Mail Stop A358, 19901 Germantown Rd., Germantown, MD 20585.
Coalition for Intelligent Manufacturing Systems

The Coalition for Intelligent Manufacturing Systems (CIMS) is composed of individual U.S. companies, research consortia, and trade associations with an interest in the development of intelligent manufacturing systems. The coalition includes both users and producers of intelligent manufacturing systems, and is open to any industry party concerned about the future of U.S. and international advanced manufacturing technologies and systems.

Established in August 1991, CIMS was formed in response to a proposal made by the government of Japan in 1990 to launch a ten-year, billion-dollar multinational collaborative research program for intelligent manufacturing systems. Since early 1990 the U.S. government has been engaged in discussions with the governments of Japan, the European Community and European Free Trade Association, Canada, and Australia to determine the feasibility, purpose, technical scope, and administrative procedures of such an international program. The purpose of the coalition is to provide the U.S. government with a broad industry view on issues relating to U.S. involvement in an international IMS program. The IMS proposal confronts U.S. industry with a myriad of important choices. CIMS members believe a broad-based, national perspective is imperative in answering the questions IMS presents.

Currently, CIMS, in addition to administrative operations, has three technical working groups:

- Modalities/Funding – To consider and develop recommendations regarding the organizational aspects of test case projects and funding issues.
- Technologies – To identify technical themes appropriate for international collaboration in manufacturing research and development.
- Intellectual Property – To consider and make recommendations on the specific provisions and the protection and use of intellectual property in IMS test cases.

For more information contact:
R. Wayne Sayer, Executive Director, CIMS
1742 N Street, N.W.
Washington, DC 20036
Phone: 202-887-1070
Fax: 202-296-1074.

National Coalition for Advanced Manufacturing

The National Coalition for Advanced Manufacturing (NACFAM) is a nonprofit, nonpartisan, industry-led coalition consisting of some 300 manufacturing companies; national industrial trade and technical education associations; and centers of manufacturing technology extension, education, and research. NACFAM seeks a public policy environment more supportive of advanced manufacturing and industrial modernization as keys to enhancing the quality, productivity, and competitiveness of U.S. manufacturing.

NACFAM advocates far greater national leadership focus on the importance of industrial base modernization, the creation of a national industrial extension network, redirection of federal R&D spending towards industry-led initiatives, federal support for industrial work force training, and sharply increased investment in plant and equipment. Areas targeted by NACFAM are: Leadership; Technology Development; Technology Deployment; Technical Education; and Modernization Incentives.

NACFAM provides a range of services to its members:

- Budget assessments of federal budget developments affecting agencies and programs that offer possibilities for public partnerships
- Customized counseling and brokering for individual members seeking partnerships with government agencies.
- NACFAM alerts on fast-breaking legislative developments and federal requests for proposals
- On-line legislative tracking of relevant bills moving through Congress
- NACFAM Annual Conference on public policies and programs affecting industrial modernization and advanced manufacturing
- Data base of 1500 advanced manufacturing technology centers
- NACFAM position papers on key public policy issues

Continued on page 5
AMTEX Partnership

The mission of the AMTEX Partnership is to enhance the competitiveness of the American Textile Industry, from fiber through fabricated products, by implementing technology developed in collaborative R&D programs that link the scientific and engineering resources of government, universities, and industry.

The interface between the government labs and industry is through five R&D institutions: Institute of Textile Technology, Textile/Clothing Technology Corporation (TC²), Textile Research Institute/Princeton, Cotton Incorporated, and National Textile Center. The participating DOE laboratories are Argonne, Brookhaven, Idaho National Engineering Laboratory, Lawrence Berkeley, Livermore, Los Alamos, National Renewable Energy Laboratory, Oak Ridge, Pacific Northwest, Sandia, and Savannah River Technology Center.

The AMTEX Partnership is made up of the Industry Operating Board, Laboratory Operating Board, and Government Operating Board. The AMTEX Industry Operating Board has developed a long-term R&D roadmap. It defines a series of technology-based manufacturing capabilities that must be developed and implemented to bring about revolutionary increases in competitiveness. The roadmap is built around the following initiative areas:

- Demand-activated manufacturing
- Environmentally sustainable and flexible fiber manufacturing
- Flexible textile production processes
- Agile apparel manufacturing
- Higher value cotton

The unifying theme of these initiatives is the integration and optimization of quality, cost, and responsiveness in a way that will enable U.S. manufacturers to regain domestic market share by providing higher value products and more responsive service than foreign competitors.

The central strategy of AMTEX is to couple the unique technical capabilities of the DOE laboratories with those of industry and universities to meet these technical challenges. The DOE laboratories bring exceptional expertise to AMTEX in areas such as low-waste chemical processes, sensors, automation, advanced materials, energy efficiency, biotechnology, large-scale data analysis, enterprise simulation, and information technologies.

For additional information on AMTEX contact: Richard K. Quisenberry, Director, Industry Operating Board and Program Office, phone: 302-999-6733.
Cooperative Programs for Reinvestment

The Cooperative Programs for Reinvestment (CPR) system is a computerized, public-access information system providing industry with information on government assistance programs and technology consortia.

Currently, the system has three assistance categories and contains information on over 300 consortia and federal programs:

- Federal programs: Includes summaries and points of contact for programs that provide consultation, information, or financial assistance useful to industry.
- Consortia: Describes the cooperative efforts of consortia, including federal government, industry and educational institutions.
- Other information systems for defense conversion: Provides direct connections to access other information systems via the Internet, which may assist defense industry reinvestment and conversion efforts. This interconnectivity function provides CPR users a single information entry point to view programs in CPR and related federal and public systems.

Interested firms can use CPR to identify government programs that assist in developing new technologies, improving manufacturing processes, increasing exports, enhancing employee skills, and strengthening competitive positions. Users can access general reference sources such as the Commerce Business Daily and the Federal Register. Other more specific information available includes announcements for the Technology Reinvestment Project, the Small Business Innovative Research programs, research grants, and conferences schedules. CPR can also help locate technology transfer programs of the federal laboratories, manufacturing research centers, and other federal, state, and nonprofit organizations.

The CPR system is accessible via the Internet by user-friendly Gopher software. Anyone using Gopher on the Internet can access CPR at gopher.dtic.dla.mil – the Internet address. The University of Minnesota developed the Gopher software and makes it available free on the Internet. Users can find the most recent releases of the Gopher software via anonymous ftp from boombox.micro.umn.edu in the/pub/gopher directory.

While a growing number of businesses access the Internet, those needing general information about connection to the Internet can call InterNIC Information Services at 1-800-444-4345.

Chicago Manufacturing Center

The Chicago Manufacturing Center (CMC) is one of 16 regional centers coordinated and partially funded by the National Institute of Standards and Technology (NISC). CMC was established in 1994 to increase the global competitive advantage of manufacturing and technology-based industries in the Chicago region. CMC serves the six-county Chicago metropolitan area, home to some 9,000 manufacturing companies.

CMC has a multidisciplinary staff that includes experts in engineering, business, finance, marketing, and work force development. Some of the services available to local firms include:

- On-site assessments to observe and analyze all phases of company operations
- Interface to technical and business resources
- Joint improvement projects

For more information on the Chicago Manufacturing Center call 312-467-0625. For additional information on the NIST Manufacturing Technology Centers, see the accompanying article (page 2) on the NIST Manufacturing Extension Partnership.

Manufacturing Technology Conference

The Defense General Supply Center at Rock Island Arsenal and the Numerical Control BCL Standards Association are sponsoring the Manufacturing Technology Conference, Demonstrations, and Exhibits on July 13-14, 1994, in Davenport, IA. The theme of the conference is: Work Off-Loading and Work Loading Machine Shops via Electronic Data Interchange. The conference will be held at the River Center in Davenport and will include EDI demonstrations and hardware/software exhibits. For registration information contact Steve Harris, fax 309-782-7527.
Books on Manufacturing


Meetings

August

- New Directions in Simulation for Manufacturing and Communications
  Waseda University, August 1-2, Tokyo, Japan
  Contact: 81-3-320-34141 (ext. 73-3452) or Fax: 81-3-3200-2567

- Diminishing Manufacturing Sources and Material Shortages (DMSMS)
  U.S. Army Missile Command et al., August 8-11, Jupiter Beach, FL
  Contact: 205-895-6343 (ext. 2767), Susan T. Caldwell

- First International Conference on Concurrent Engineering: Research and Applications (CE '94)
  CTC, CERA Journal, ISPE, August 29-31, Pittsburgh, PA
  Contact: 814-269-2501 or Fax: 814-269-4458

September

- Manufacturing '94/IMTS Conference
  SME, September 7-14, Chicago, IL
  Contact: 313-271-1500

- Appliance Manufacturing Conference
  SME, September 19-21, Indianapolis, IN
  Contact: 313-271-1500

- Eighth Annual BMP Workshop
  Navy, NIST, University of Maryland, September 26-28, LaJolla, CA
  Contact: 1-800-789-4BMP

- Fifth World Conference on Robotics Research
  RI/SME, September 27-29, Cambridge, MA
  Contact: 313-271-1500 or Fax: 313-271-2861

- International Cold Forging Conference
  Engineering Research Center for Net Shape Manufacturing at OSU, September 27-29, Columbus, OH
  Contact: 614-292-9267 or Fax: 614-292-7219

October

- International Sheet Metal Forming Conference
  The Engineering Research Center at OSU, October 3-5, Columbus, OH
  Contact: 313-271-1500

Have a safe and happy 4th
ManTech Project Schedule

- One of the important steps in a DoD Manufacturing Technology project is the end-of-contract demonstration when the contractor or agency that has developed and/or applied the technology demonstrates the equipment and processes involved.
- The following calendar has been compiled by the staff at MTIAC. It is also available online to MTIAC users through the MTIAC Online Services, which is updated monthly.

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Title</th>
<th>Project Number</th>
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<tbody>
<tr>
<td></td>
<td>Air Force Project Completion Forecast</td>
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<tr>
<td>July</td>
<td>Knowledge Integrated Design System</td>
<td>F33615-89-C-5619</td>
<td>William O'Hara</td>
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<td></td>
<td>High Resolution 3D Computed Tomography</td>
<td>F33615-93-C-5327</td>
<td>Charles Buynak</td>
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<td>August</td>
<td>Laser Assisted Particle Removal (LAPR)</td>
<td>F33615-92-C-5803</td>
<td>Mary Kinsolla</td>
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<td>September</td>
<td>Application of Six-Sigma Design Concepts to</td>
<td>F33615-93-C-4328</td>
<td>Ted Finnessey</td>
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<td>September</td>
<td>Integrated Product/Process Design</td>
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<td>September</td>
<td>A Laser-Based Metal Deposition and Material Removal System for High Definition Flats</td>
<td>F33615-92-C-5807</td>
<td>Robert Cross</td>
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<td>Displays (AMLCD Repair Equipment)</td>
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<tr>
<td>September</td>
<td>Active-Matrix Pixel and Line Defect Detection Technology</td>
<td>F33615-92-C-5809</td>
<td>Robert Cross</td>
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All data and information herein reported are believed to be reliable; however, no warrant, expressed or implied, is to be construed as to the accuracy or the completeness of the information presented.

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Manufacturing Technology

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