



**Metal Casting Center  
Department of Industrial Technology**

March 6, 2002

The Metal Casting Center (MCC) is one of only three nationally recognized metal casting research centers in the country and services foundries ranging from three man shops in Iowa to major automotive manufacturers who purchase castings produced in the state. The Metal Casting Center's industrial partners are the 52 metal casters in the state of Iowa. Although many of them are small shops, they employ about 4,800 people in total. The metal casters have two major clusters. One is along the Mississippi River and the other in central Iowa. The rest are spread throughout the state.

Eighty percent of the metal casters in Iowa are small shops of 100 people or less. They can not afford to employ all the resources needed to stay current on environmental affairs or product improvements to stay competitive in the industry. The MCC provides a source for information and research for Iowa Metal Casters, and this service is with no cost to them. This has helped to maintain the low attrition rate (3%) of Iowa Metal Casters compared to the national rate (10%) over the last 10 years.

Since the Metal Casting Center is located at the University of Northern Iowa, students are employed as laboratory assistants providing them not only an opportunity to broaden their technical experiences but develop communication, managerial, and leadership skills. This cooperative educational approach with the Iowa foundry industry has provided highly sought after students with practical hands-on experience. Of the students who have graduated in the past five years, over two-thirds are presently employed in the state of Iowa with one student starting a foundry.

This past year, the MCC teamed with CIRAS and Iowa State University to write the Iowa Industries of the Future (IOF) Vision and Roadmap for Metal Casting. The Federal, Department of Energy funded this project to enhance their National Industries of the Future-Metal Casting document. The MCC organized the Iowa Metal Casters for input, and they have been provided with the final document.

The suppliers for the foundry industry are the main sources for fee-for-services at the MCC. Metal Casters depend on the suppliers for research and new products. In addition to serving Iowa foundries, the MCC also provides testing facilities to a

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number of industrial material suppliers. Through these interactions, the center develops new technology that is transferred to Iowa foundries through research projects, publications, newsletters, and technical presentations. The center's strong interactions with the Iowa MTC, Iowa Energy Center, and local chapters of national technical societies provide a forum for technology transfer, job networking, training, and referrals for one on one consultation.

Primary areas of research are sand additives, which have a major environmental impact, and metallurgical aspects such as metal filtration and inoculation methods, which have a major quality impact.

The MCC budget is primarily for salary and fringe benefit. The total budget for 2001-2002 is \$327,400. The Metal Casting Center received \$193,505 in state funding this year. This provides the nucleus for the Center to survive. This money is leveraged to obtain contracts and grants for the rest of the budget. The remaining money comes from two sources. The fee for services from Foundry suppliers makes up 23% and remaining 18% is made up of money from Federal grants.