A. MISSION AND AREAS OF FOCUS

The mission of the MRC is to provide a vital link between University activities and the South Florida and Latin American manufacturing communities by establishing a strong commitment to serving the manufacturing industry, training manufacturing engineers and researchers, and developing leading edge manufacturing technology and systems focused on raising and maintaining the level of competitiveness of the manufacturing industry.

The Center works in cooperation with the Engineering Information Center, the Dean of Engineering Outreach Programs and academic departments to promote educational programs. The Center uses college faculty as well as industry experts to teach industry-specific seminars. This level of detailed technical expertise is not always available at the University Department level. By bringing in industry experts, the University narrows the gap between industry and academia, while students learn about the current trends in the industry.

B. ORGANIZATION, EXTERNAL TRENDS AND STRATEGIC DIRECTIONS

1. Organizational Issues

2. Advisory Board Members

   a) List of members

   Bob Shisler - Director, Engineering Prototype Center – MOTOROLA
   Allan Arch - President - SOUTHERN GEAR AND MACHINE
   Bill Box – Chairman – MARK TWO ENGINEERING
   Ray Zentis – Director – FLA MANUFACTURING TECHNOLOGY CENTER

   b) Enhanced Program
The advisory board guides the center by providing direction in both research and educational areas. They share information about where their organizations want to go in the field of Manufacturing enabling the Center to tailor research and education efforts to match current directions in the field.

3. External Trends

Manufacturing in South Florida continues to require an urgent boost in competitiveness. The level of technical education level of high school graduates is a major industry concern. Industry is requiring better-qualified personnel to man operations. While the center does not participate at the basic technical education level, it does promote higher level technical expertise by implementing training programs for industry, tailored to their needs.

4. Strategic Directions and Areas of Emphasis

The Center is pursuing research opportunities primarily with Industry. The vision of the center is to become an entry portal for companies that are looking for assistance in research and development and are willing to fund the research activities. This includes salaries for students, equipment, materials, etc. In addition to research, the Center focuses on developing advanced training programs for local industry and students to further their competitiveness in industry. The center expects to excel in the quality of its programs as well as the results that it produces in its cooperative efforts with industry. The center aligns itself primarily with the following University Major Goals and Themes: I, II, III, and V, while the others are inherent to the nature of the Center.

C. 2000-2001 ANNUAL ACCOMPLISHMENTS


Measurable Outcome: To increase membership to 12 companies by 2001, adding 15% each year after.

2000-2001 Objective 1A: - To increase the number of partnerships and companies to which the MRC provides services to by 50%. See research long range goal.

2000-2001 Outcome: The Center managed to increase company membership by one for several months with a new member, but due to changes in the economy the company decided to hold the investment until further notice. The Center continued to increase the number of companies that it provided services to.

Use of Results for Program Improvement: The following trends continue to impact the MRC. First, the opportunity presented by the shifting of funded research from basic to applied sciences, and the other, the change in manufacturing demographics within the South Florida region. Large manufacturers in South Florida have been acquired by larger non-Florida-based companies and continue to downsize. These acquisitions have greatly impacted both the engineering and manufacturing capabilities. Small and medium sized companies continue to have relationships with the Center and further its expansion. The MRC has focused on establishing partnerships with relatively good success, given the conditions of the economy.

Long Range Goal 2: Enhance educational programs. Addresses UG II.

Measurable Outcome: New courses developed, faculty trained, increase courses provided.

2000-2001 Objective 2A: Create new seminars/training programs geared to industry.

2000-2001 Outcome: Jointly produced Lean Manufacturing 101 seminar for industry. Continued training program with Cordis Corp. for SAP with 15 students from industry. Faculty attended seminar and started using knowledge acquired in applicable courses.

Use of Results for Program Improvement: Will continue to establish new training seminars.
2000-2001 Objective 2B: - Improve and offer new courses affected by Deneb, SAP and MatrixOne.

2000-2001 Outcome: Continued training program with Cordis Corp. for SAP with 15 students from industry.

Use of Results for Program Improvement: Create additional training seminars in high demand manufacturing topics and software.

**Long Range Goal 3:** to increase the level of funding through services and maintain the current level of grants received. Addresses UG I: International, Information; UG II: International; UG IV: International, Information; UG V: International, Information; UG V1: International, Urban, Information.

Measurable Outcome: Measurable by grants processed by DSRT.

Create additional training seminars in high demand manufacturing topics and software.

2000-2001 Objective 3A: Maintain the level industrial support research to $50,000.

2000-2001 Outcome: Dr. Chen continued to obtain grants from private individuals and companies for $386,000. Development of engineering enterprise systems via the Internet (Magi21.com, Inc.: $309,000) Foot Surface Modeling and Insole Manufacturing (Dr. Baum’s Clinics: $17,500). In conjuction with Dr. Jones: Engineering the Enterprise Business Process at Taco Metals (Taco Metals: $42,600). Dr. Jones obtained grants for $122,800 (TRW Foundation: Support for Mentor-Protégé Program between TRW and COAST/ACM). These projects involved the utilization of MRC resources to accomplish the proposed objectives.

Use of Results for Program Improvement: Most grants are coming from private industry than from federal or state agencies. They should be targeted more aggressively.

**Long Range Goal 4:** Industry Interaction - Establishment of working relationships and long-term partnerships with local industry in which the Center can provide engineering knowledge and services to its partners, making them more competitive. Addresses UG III: International, Information; UG VI: International, Information.

Measurable Outcome: Measured by number of projects worked on in conjunction with local industry.

2000-2001 Objective 4A: To set up/perform as many working partnerships / projects as possible.

2000-2001 Outcome: Completed and submitted 15 projects for 5 different companies/entities: Taco Metals, FIU Materials Laboratory, Biomedical Engineering Institute, Florida Manufacturing Technology Center, International Sales & Service.

Use of Results for Program Improvement: Continue to produce quality projects on order to maintain long term commitment and relationships with from local industry. Continue to expand Pro/Engineer knowledge and capabilities to increase number of seminars and training courses required by industry.

**D. 2001-2002 ANNUAL GOALS**

2001-2002 Goal 1: To become financially self-sufficient through industry participation, research grants and services. (Addresses University Goals II, III, IV, & V)

Measurable Outcome: To increase the number of partnerships and companies to which the MRC provides services to by 50%.

2001-2002 Goal 2: **Enhance educational programs.** (Addresses University Goal I & II)

Measurable Outcome: Create additional training seminars in high demand manufacturing topics and software.
2001-2002 Goal 3: to increase the level of funding through services and maintain the current level of grants received. (Addresses University Goals II, III, IV, & V)

Measurable Outcome: Maintain the current level of research funding and increase as much as possible.

2001-2002 Goal 4: Industry Interaction - Establishment of working relationships and long-term partnerships with local industry in which the Center can provide engineering knowledge and services to its partners, making them more competitive. (Addresses University Goal III & V)

Measurable Outcome: To substantially increase industry contacts and projects, providing new and improved services and expertise.

E. EXECUTIVE SUMMARY

1. Activities - Prior Year

The center continued to work on a variety of projects to assist small companies to improve their productivity and competitiveness. Product development and documentation was a major activity during the year. This included design, prototyping, engineering document production and verification.

The Center established a strong relationship with a local manufacturer. This relationship evolved into the establishment of a local R&D field office at the Center’s facilities. Engineers from the company worked in parallel with Center staff in product development. These activities were critical to launching of new products by the company. The Taco Metals grant funds were used to cover 4 graduate students performing Process Modeling, Product Classification and Process Planning - MRP/CRP activities.

One key partner of the Center, Florida Manufacturing Technology Center (FMTC) re-organized itself and became FMEP (Florida Manufacturing Extension Program Management Services). The organization continues to work with the Center as usual by promoting the MRC to their client companies for its capabilities.

2. Activities - Coming Year

As before, the center continues to search for research, design and development projects. Getting companies connected to the Internet and establishing e-commerce capabilities for them is one of the major development fronts since many small-medium companies many times need advise and expertise in this arena. As of 8/21/01, the Center was notified of being awarded a $100,000 grant along with FMEP to be used in technical assistance to small companies. The grant originated from the North American Development Bank. TRW also provided funding for $105,000 for continuation of the Mentor-Protégé Program. Glory Educational Resource, Inc. awarded $383,000 (notice received on 7/31/01) for continuation of the Cyber-Manufacturing Environment Project –Phase III.

Dr. Jones was recently appointed to the Board of Directors of FMEP (Florida Manufacturing Extension Programs, Inc.), which resulted after the reorganization of the Florida Manufacturing Technology Center. He will have first contact with all key manufacturers in the State. This will make the University and the Manufacturing Research Center far more responsive to Industry’s needs in terms of education, research and technology transfer.

Research grants will continue to be applied for with more emphasis on private funding. The center will continue to organize training seminars for local industry, which continues to praise the center’s efforts in this area. The MRC will cooperate with other professional organizations to help train local engineers effectively and economically.