MISSION TECHNOLOGICAL UNIVERSITY
COLLEGE OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING -
ENGINEERING MECHANICS

STRATEGIC PLAN UPDATE
February 26, 2005
January 9, 2007
December 19, 2007
August 25, 2008
June 1, 2010

Mission
Prepare Engineering Students for Successful Careers

Vision
Be a nationally recognized mechanical engineering department that attracts, rewards, and retains outstanding faculty, students, and staff

Vision metric: Be a Department of Choice internationally

The Department of Mechanical Engineering-Engineering Mechanics will be nationally recognized as having one of the best undergraduate and graduate programs in the nation. Based on the quality and balance of its undergraduate and graduate programs and research it will be a department of choice by prospective students, parents, faculty, staff, corporate donors, and corporate employers nationwide.

Mechanical Engineering Program Educational Objectives:

1. Graduates of the Mechanical Engineering Program will meet the expectations of employers.

2. The ME Program prepares qualified graduates to pursue advanced study, if desired.

Goal 1. Increase the visibility of the department and its programs

Objective 1: Improve rankings in National Research Council and U.S. News and World Report (Graduate and Undergraduate)

Strategy 1: Promote department programs and accomplishments through the Graduate seminar series, Annual Report, ASME ME Department Benchmarking study

Strategy 2: Host professional society conferences

Strategy 3: Faculty national/international visibility by having 80% of faculty on professional society committees or organizing national/international conferences/symposium meetings

Strategy 4: 25% of faculty as NSF panel reviewers and/or proposal reviewer:

Strategy 5: Average 3 journal papers per faculty member per year

Strategy 6: Increase the level of scholarship by having 3 journal publication per dissertation and 1 publication per thesis

Strategy 7: Assist with proposal writing

Strategy 8: Implement a department marketing plan
Objective 2: Improve recognition for faculty, staff, students, and alumni:

Strategy 1: Engage Honors and Awards Committee (members – fellow, other national award winners
Strategy 2: Use the Drake Model for securing endowed professors/chairs
Strategy 3: Provide quality recommendations for staff awards
Strategy 4: Incentivize submission of fellowships/scholarships with internal funding per proposal ($150), GRA, GA
Strategy 5: GTA support of PhD students beyond the first year requires development of fellowship/scholarship proposal to federal or other agencies, such as, DoD, NASA, NSF
Strategy 6: Solicit nominees from faculty and staff
Strategy 7: Submit 4 PCA nominees per year
Strategy 8: Submit one nominee to the University Award Selection committee per year
Strategy 9: Nominate 6 Academy nominees every 2 years

Goal 2. Attract and retain high quality and diverse faculty, staff, and students.

Objective 1: Reduce student to faculty ratio

Strategy 1: Increase number of tenure track faculty
Strategy 2: Reduce undergraduate enrollment through higher admission standards
Strategy 3: Combination of the above

Objective 2: Make faculty salaries competitive

Strategy 1: Benchmark salaries against other top fifty programs

Objective 3: Attract and retain high quality staff

Strategy 1: Make staff salaries competitive - benchmark staff salaries with those of peer universities
Strategy 2: Provide professional development for staff
   a. Work with HR to provide professional development for one staff member per year
   b. Survey staff for development needs

Objective 4: Continue to improve the quality of recruited faculty

Strategy 1: Aggressively pursue top quality faculty candidates
Strategy 2: Start up packages competitive with benchmark universities, get the University to provide adequate support
Strategy 3: Continue to secure named professorships for new untenured faculty
Strategy 4: Review recruitment procedures
Strategy 5: Provide continued professional development opportunities for faculty, e.g., release time, travel funds, etc
Strategy 6: Secure 20% of the SHFI hires and suggest new focus areas for SHFI

Objective 5: Improve retention of faculty

Strategy 1: Provide quality mentoring and regular feedback on progress

Objective 6: Improve diversity

Strategy 1: Insure diversity is a criterion during recruitment of faculty and students.
Strategy 2: Assess the environment for minority and female faculty.
Strategy 3: Recruit minority and female students from the Summer Programs
Strategy 4: Design marketing materials to attract minorities and female graduate students.
Strategy 5: Seek resources to recruit quality domestic graduate students

Objective 7: Continue to improve the quality of graduate students
Strategy 1: Require PhD GRE of all applicants or within the first semester for MTU students for NSF Graduate fellowships

**Goal 3.** Grow department resources.

**Objective 1:** Increase department funding
- Strategy 1: Execute Phase II of MEEM Building for the Future Campaign Endowing Excellence
- Strategy 2: Increase the number of major gift officers assigned to MEEM Campaign
- Strategy 3: Expand alumni and friends interaction via full-time major gifts officer and chair trips
- Strategy 4: Increase research overhead

**Objective 2:** Increase space for research and education
- Strategy 1: Form a committee to prepare plans for the design of the new building
- Strategy 2: Secure the 11th floor

**Goal 4.** Strengthen the department’s educational program

**Objective 1:** Develop curricular innovations
- Strategy 1: Seek funding from government and industrial agencies
- Strategy 2: Maintain department support of proposals

**Objective 2:** Infuse entrepreneurship into the undergraduate and graduate curricula
- Strategy 1: Modify existing undergraduate courses at first year through senior year
- Strategy 2: Introduce minors in entrepreneurship

**Objective 3:** Honors program for undergraduates
- Strategy 1: Honors section of all our required courses

**Objective 4:** Produce leaders
- Strategy 1: Increase participation in study abroad, co-op, and undergraduate research programs.
- Strategy 2: Create research certificate/minor
- Strategy 3: Develop a Peace Corps ME Master International Program

**Objective 5:** Safety program
- Strategy 1: Housekeeping – continual
- Strategy 2: Safety audits of all labs on a 2 year cycle

**Goal 5.** Achieve international leadership positions in all of the department’s strategic research thrust areas

**Objective 1:** Secure National Centers
- Strategy 1: Secure 8 endowed faculty chairs/professorships
- Strategy 2: Continue to create university centers/institutes in each of the Research Groups

**Objective 2:** Have a visible role in shaping national, large research concept development
- Strategy 1: Identify matches between suitable research organization committees and existing faculty
- Strategy 2: Help “matched faculty” pursue positions and participate (release time, travel, etc.)
Strategy 3: Hire a “research marketer/lobbyist” to help strategically position our faculty at the front-end of large RFP development activities

Program targets
By Fall 2012: (Enrollment: 1143 UG + 203 GS [100PhD] = 1346) (43 Faculty)*
By Fall 2017: (Enrollment: 1143 UG + 232 GS [129 PhD] = 1275) (43 Faculty)*

*Tenure – track and tenured faculty

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Peer Universities (3)
Clarkson University
Iowa State University
University of Missouri - Rolla

Benchmark Departments
Graduate Programs
University of Illinois
University of Michigan
University of Minnesota
University of Wisconsin
Penn State University
Purdue University
Rensselaer Polytechnic University

Undergraduate Programs
University of Michigan
Michigan State University
Purdue University
University of Illinois
Kettering University