

2005 – 2010 CMR Strategic Plan

Historically, the TBR has required the CMR to provide annual reports with progress in three dimensions; Personnel, Facilities, and Major Activities. Therefore, the 2005 – 2010 CMR Strategic Plan is aligned with both the TBR reporting guidelines as well as TTU Strategic Plan Objectives. Table 4 presents a listing of CMR Strategic Goals for 2005 – 2010, followed by a breakdown of Measurable Objectives for each Strategic Goal, and culminating with Table 5, which presents a mapping of CMR Objectives to TTU Strategic Goals. It should be noted that the goals and objectives outlined in the following text are still in their formative state as a first round of review has been conducted by the EAB. Faculty, staff, and the TTU administration will also have opportunities to voice their recommendations, at which time the plan will be finalized.

Table 4. CMR Strategic Goals 2005 – 2010

Personnel:

- 1.1 Increase the diversity of the graduate student population by expanding female and minority student participation.
- 1.2 Increase the exposure and attractiveness of the CMR to potential graduate students through effective advertising and increased scholarship/stipend incentives.
- 1.3 Improve the productivity of existing faculty and staff as measured by external funding of direct activities.

Facilities:

- 2.1 Enhance Laboratory Development by investing in equipment and major supplies.
- 2.2 Renovate CMR laboratory and administrative environments for improved morale and utilization of existing spaces.

Activities:

- 3.1 Increase the level of externally funded research and service activities in alignment with the CMR's strategic foci and mission.
- 3.2 Cultivate new and existing sources of direct income to the CMR while simultaneously fulfilling outreach and service to Tennessee/National manufacturing needs.
- 3.3 Expand student knowledge in manufacturing-related topics aligned with the CMR strategic foci.
- 3.4 Expand potential opportunities for licensing income and economic development.
- 3.5 Promote and effectively communicate the positive impact of the CMR on National, State, and Local Manufacturing communities.

CMR 2005 – 2010 Strategic Plan: Measurable Objectives

1. Personnel:

- 1.1. Increase the diversity of the graduate student population by expanding female and minority student participation.

Measurable Objective 1.1

Increase the percentage of female and minority students receiving some level of support through the CMR.

2004 – 05 Base Year Objective Baseline	9%
2005 – 06 projected progress	Increase of 2 basis points over baseline
2006 – 07 projected progress	Increase of 4 basis points over baseline or 2 basis points increase over prior year.
2007 – 08 projected progress	Increase of 6 basis points over baseline or 2 basis points increase over prior year.
2008 – 09 projected progress	Increase of 8 basis points over baseline or 2 basis points increase over prior year.
2009 – 10 projected progress	Increase of 10 basis points over baseline

- 1.2. Increase the exposure and attractiveness of the CMR to potential graduate students through effective advertising and increased scholarship/stipend incentives.

Measurable Objective 1.2a

Increase the number of advertisements and channels to which graduate students are recruited. The CMR will use three separate advertising channels, representing 30 separate events/locations and spend \$3,000/yr for advertising by the end of cycle.

2004 – 05 Base Year Objective Baseline	Currently only an indirect advertisement through the CMR website
2005 – 06 projected progress	Direct advertisement through various CMR websites and development of general-purpose advertisement brochure.
2006 – 07 projected progress	General-purpose advertisements submitted to eight (8) local Tennessee universities. Special-purpose advertisement brochures developed for Materials and Product-Realization research groups. Add special-purpose advertisements to website
2007 – 08 projected progress	Total submission of general-purpose and special-purpose brochures through mail, web, and conferences representing 25 separate events.
2008 – 09 projected progress	Total submission of general-purpose and special-purpose brochures through mail, web, and conferences representing 25 separate events/locations. Establish advertising budget of \$1,500 for recruiting students for general/special project needs.
2009 – 10 projected progress	Total submission of general-purpose and special-purpose brochures through mail, web, and conferences representing 30 separate events/locations. Establish advertising budget of \$3,000 for recruiting students for general/special

project needs.

Measurable Objective 1.2b

Establish a campaign to raise funds for special graduate student incentive scholarships and awards. The CMR will establish an endowed account for graduate student scholarships and awards that will have a balance of \$6,000 by the end of cycle.

2004 – 05 Base Year Objective Baseline	No such fund exists
2005 – 06 projected progress	Develop scholarship/award goals, award criteria, fund raising literature, and target audience
2006 – 07 projected progress	Initial endowed account balance of \$5,000 as baseline.
2007 – 08 projected progress	Increase of 10% over baseline or 10% over prior year.
2008 – 09 projected progress	Increase of 15% over baseline or 5% over prior year.
2009 – 10 projected progress	Increase of 20% over baseline or 5% over prior year.

Measurable Objective 1.2c

Increase the average monthly stipend for both Masters and Ph.D. students. The CMR will increase the average monthly stipends by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	Average monthly stipends of \$985 for Masters and \$1,320 for Ph.D. students
2005 – 06 projected progress	Increase of 5% over baseline on average monthly stipends of both Masters and Ph.D. students.
2006 – 07 projected progress	Increase of 10% over baseline or 5% over prior year on average monthly stipends of both Masters and Ph.D. students.
2007 – 08 projected progress	Increase of 15% over baseline or 5% over prior year on average monthly stipends of both Masters and Ph.D. students.
2008 – 09 projected progress	Increase of 20% over baseline or 5% over prior year on average monthly stipends of both Masters and Ph.D. students.
2009 – 10 projected progress	Increase of 25% over baseline on average monthly stipends of both Masters and Ph.D. students.

1.3. Improve the productivity of existing faculty and staff as measured by external funding of direct activities.

Measurable Objective 1.3a

Increase the total amount of “soft money” available to the CMR through return of Facilities and Administrative (F&A) fees, Testing income, Equipment Usage fees, and salary release of faculty and staff. The CMR will increase these funds by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	\$231,301.
2005 – 06 projected progress	Increase of 5% over baseline.
2006 – 07 projected progress	Increase of 10% over baseline or 5% increase over prior year.
2007 – 08 projected progress	Increase of 15% over baseline or 5% increase over

2008 – 09 projected progress	prior year. Increase of 20% over baseline or 5% increase over prior year.
2009 – 10 projected progress	Increase of 25% over baseline

Measurable Objective 1.3b

Increase the percentage of total graduate student support (stipends + fees) provided by external projects. The CMR will increase this percentage by 25 basis points over the baseline (resulting in 56.4% of total graduate student support provided from external projects) by the end of cycle.

2004 – 05 Base Year Objective Baseline	31.4%.
2005 – 06 projected progress	Increase of 5 basis points over baseline.
2006 – 07 projected progress	Increase of 10 basis points over baseline or 5 basis points increase over prior year.
2007 – 08 projected progress	Increase of 15 basis points over baseline or 5 basis points increase over prior year.
2008 – 09 projected progress	Increase of 20 basis points over baseline or 5 basis points increase over prior year.
2009 – 10 projected progress	Increase of 25 basis points over baseline.

2. Facilities

2.1. Enhance Laboratory Development by investing in equipment and major supplies.

Measurable Objective 2.1a

Total laboratory investment of \$1,000,000 by the end of cycle.

2004 – 05 Base Year Objective Baseline	
2005 – 06 projected progress	\$200,000.
2006 – 07 projected progress	\$400,000 total investment since base year or 100% increase over prior year.
2007 – 08 projected progress	\$600,000 total investment since base year or 100% increase over prior year.
2008 – 09 projected progress	\$800,000 total investment since base year or 100% increase over prior year.
2009 – 10 projected progress	\$1,000,000 total investment by the end of cycle.

Measurable Objective 2.1b

Submit one (1) credible, Major Research Instrumentation (MRI) proposal every year during the planning cycle.

2004 – 05 Base Year Objective Baseline	
2005 – 06 projected progress	One (1) MRI proposal submitted.
2006 – 07 projected progress	One (1) MRI proposal submitted.
2007 – 08 projected progress	One (1) MRI proposal submitted.
2008 – 09 projected progress	One (1) MRI proposal submitted.
2009 – 10 projected progress	One (1) MRI proposal submitted.

2.2. Renovate CMR laboratory and administrative environments for improved morale and utilization of existing spaces.

Measurable Objective 2.2

Invest an average of \$5,000/yr on renovation of laboratory and administrative environments. A total of \$25,000 invested during the planning cycle.

2004 – 05 Base Year Objective Baseline	
2005 – 06 projected progress	\$5,000 invested.
2006 – 07 projected progress	\$5,000 invested.
2007 – 08 projected progress	\$5,000 invested.
2008 – 09 projected progress	\$5,000 invested.
2009 – 10 projected progress	\$5,000 invested.

3. Activities

3.1. Increase the level of externally funded research and service activities in alignment with the CMR’s strategic foci and mission.

Measurable Objective 3.1a

Increase the three-year moving average (3YrMA) of external funding by 5% per year. The CMR will increase these funds by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	\$2,042,000
2005 – 06 projected progress	Increase of 5% over baseline.
2006 – 07 projected progress	Increase of 10% over baseline or 5% increase over prior year.
2007 – 08 projected progress	Increase of 15% over baseline or 5% increase over prior year.
2008 – 09 projected progress	Increase of 20% over baseline or 5% increase over prior year.
2009 – 10 projected progress	Increase of 25% over baseline

Measurable Objective 3.1b

Increase the valuation of proposals processed through the CMR by 5% per year. The CMR will increase annual proposal valuations by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	\$14,200,000
2005 – 06 projected progress	Increase of 5% over baseline.
2006 – 07 projected progress	Increase of 10% over baseline or 5% increase over prior year.
2007 – 08 projected progress	Increase of 15% over baseline or 5% increase over prior year.
2008 – 09 projected progress	Increase of 20% over baseline or 5% increase over prior year.
2009 – 10 projected progress	Increase of 25% over baseline

3.2. Cultivate new and existing sources of direct income to the CMR while simultaneously fulfilling outreach and service to Tennessee/National manufacturing needs.

Measurable Objective 3.2a

Increase the income resulting from testing services by 5% per year. The CMR will increase these funds by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	\$46,661
2005 – 06 projected progress	Increase of 5% over baseline.
2006 – 07 projected progress	Increase of 10% over baseline or 5% increase over prior year.

2007 – 08 projected progress	Increase of 15% over baseline or 5% increase over prior year.
2008 – 09 projected progress	Increase of 20% over baseline or 5% increase over prior year.
2009 – 10 projected progress	Increase of 25% over baseline

Measurable Objective 3.2b

Increase the income resulting from the Work Study Intern Program by 5% per year. The CMR will increase these funds by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	\$119,440
2005 – 06 projected progress	Increase of 5% over baseline.
2006 – 07 projected progress	Increase of 10% over baseline or 5% increase over prior year.
2007 – 08 projected progress	Increase of 15% over baseline or 5% increase over prior year.
2008 – 09 projected progress	Increase of 20% over baseline or 5% increase over prior year.
2009 – 10 projected progress	Increase of 25% over baseline

Measurable Objective 3.2c

Increase the valuation of donated equipment and cash donations to the CMR by 5% per year. The CMR will increase annual donations by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	\$10,200
2005 – 06 projected progress	Increase of 5% over baseline.
2006 – 07 projected progress	Increase of 10% over baseline or 5% increase over prior year.
2007 – 08 projected progress	Increase of 15% over baseline or 5% increase over prior year.
2008 – 09 projected progress	Increase of 20% over baseline or 5% increase over prior year.
2009 – 10 projected progress	Increase of 25% over baseline

3.3. Expand student knowledge in manufacturing-related topics aligned with the CMR strategic foci.

Measurable Objective 3.3

Deliver two(2) intense short course activities each year geared towards enabling students to prepare them for research and/or engineering practice. A total of ten (10) short course opportunities will be delivered to students by the end of the cycle.

2004 – 05 Base Year Objective Baseline	
2005 – 06 projected progress	Two (2) short course opportunities delivered.
2006 – 07 projected progress	Two (2) short course opportunities delivered.
2007 – 08 projected progress	Two (2) short course opportunities delivered.
2008 – 09 projected progress	Two (2) short course opportunities delivered.
2009 – 10 projected progress	Two (2) short course opportunities delivered.

3.4. Expand potential opportunities for licensing income and economic development.

Measurable Objective 3.4

Execute two (2) provisional patents and one (1) patent every year. A total of ten (10)

provisional patents and five (5) patents filed by the end of the cycle.

2004 – 05 Base Year Objective Baseline	
2005 – 06 projected progress	Two (2) provisional patents and one (1) patent filed.
2006 – 07 projected progress	Two (2) provisional patents and one (1) patent filed.
2007 – 08 projected progress	Two (2) provisional patents and one (1) patent filed.
2008 – 09 projected progress	Two (2) provisional patents and one (1) patent filed.
2009 – 10 projected progress	Two (2) provisional patents and one (1) patent filed.

3.5. Promote and effectively communicate the positive impact of the CMR on National, State, and Local Manufacturing communities.

Measurable Objective 3.5a

Increase the number of press releases, presentations, focus groups, or articles published that could positively affect attitudes about the CMR. The CMR will increase these communication activities by 100% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	5.
2005 – 06 projected progress	20% increase over baseline.
2006 – 07 projected progress	40% increase over baseline or 20% increase over prior year.
2007 – 08 projected progress	60% increase over baseline or 20% increase over prior year.
2008 – 09 projected progress	80% increase over baseline or 20% increase over prior year.
2009 – 10 projected progress	100% increase over baseline.

Measurable Objective 3.5b

Increase the number of scholarly works as book chapters and articles published in archival journals that demonstrate scholarly integrity as a result of CMR research activities. The CMR will increase these communication activities by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	19.
2005 – 06 projected progress	5% increase over baseline.
2006 – 07 projected progress	10% increase over baseline or 5% increase over prior year.
2007 – 08 projected progress	15% increase over baseline or 5% increase over prior year.
2008 – 09 projected progress	20% increase over baseline or 5% increase over prior year.
2009 – 10 projected progress	25% increase over baseline.

Measurable Objective 3.5c

Increase the number of national/international conference publications that demonstrate dissemination of CMR research pursuits. The CMR will increase these communication activities by 25% over the baseline by the end of cycle.

2004 – 05 Base Year Objective Baseline	18.
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2005 – 06 projected progress	5% increase over baseline.
2006 – 07 projected progress	10% increase over baseline or 5% increase over prior year.
2007 – 08 projected progress	15% increase over baseline or 5% increase over prior year.
2008 – 09 projected progress	20% increase over baseline or 5% increase over prior year.
2009 – 10 projected progress	25% increase over baseline.

Table 5. CMR Measurable Objectives Map to TTU Strategic Goals

CMR Objectives	TTU Strategic Goals & Outcomes
3.4, 3.5a, 3.5b, 3.5c	<p>LEADERSHIP Goal: TTU will promote, document, and communicate to all stakeholders the value of higher education’s outreach, educational, and research capacity to the economic development and quality of life for the citizens of the State.</p> <p>Outcomes:</p> <p>1.1 Promote and effectively communicate the positive impact of TTU on students, alumni, faculty, and community. Workforce development</p>
1.1, 1.2a, 1.2c	<p>ACCESS TO LEARNING Goal: The institution will demonstrate commitment to enhancing the rate and diversity of participation in higher education.</p> <p>Outcomes:</p> <p>2.1 Enhance the rate and diversity of participation in higher education by Tennesseans.</p>
1.2b, 3.2c	<p>QUALITY Goal: The institution will define, monitor, improve, and communicate the quality of programs and services.</p> <p>Outcomes:</p> <p>3.1 Increase alumni involvement in activities that promote life-long learning, program improvement, and the mentoring of current students.</p>
3.3	<p>3.2 Enhance student involvement to promote healthy social relationships, academic success, and a sense of community within the university.</p> <p>3.3 Develop and implement a QEP that is focused on improving critical thinking/real world problem-solving skills through the use of active learning strategies.</p>
2.1a, 2.1b, 2.2	<p>3.4 Enhance the campus infrastructure to effectively support all programs and objectives.</p> <p>RESOURCEFULNESS Goal: The institution will address fiscal constraints by advocating for appropriate levels of state support and by managing resources, benchmarking best practices, developing</p>

and documenting other sources of support, pursuing collaborative and entrepreneurial initiatives, and removing obstacles to competitiveness.

Outcomes:

- | | |
|---|--|
| 1.2b, 1.3a, 1.3b, 2.1a,
2.1b, 3.1a, 3.1b, 3.2a,
3.2b, 3.2c, 3.4 | 4.1 Stimulate activities that increase external funding and efficiency/cost saving through individual and unit incentives. |
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Special Initiatives

Attached in Appendix 5 are the budget worksheets that would ordinarily accompany the FY2004-05 Annual Report. One of these worksheets is Schedule 7, which includes a proposed budget for FY 2006-2007. The requested budget from the State (\$1,626,350) represents a 10% increase versus the current year budget. Of the increase, \$72,850 is requested to offset the continuing decline in the CMR's purchasing power due to inflation. The remaining additional funds (\$75,000) are requested to develop a public/private partnership for prototype capabilities in the areas of advanced batteries and fuel cell development. Utilizing research breakthroughs currently underway in the CMR and other Tennessee universities, approximately \$75,000 will be dedicated to supplies and equipment to develop prototype battery and fuel cell applications. As stated earlier, efforts will be made to engage a public/private partnership comprised of public utilities (TVA), ORNL, industries (Dana Plumly Division), State Government (TN ECD), and regional ECD organizations (TN Chambers, Regional Technology Councils), to provide additional support for this development. This partnership will focus on rapid development/deployment of prototype technologies as a catalyst for small business startup and incubation. A steering committee of the partnership will guide activities to ensure that sound business models are developed in a given project. This effort will be considered very much a "bootstrap" activity with additional funds sought from external sources.

In the event that additional funds are not allocated, the CMR will pursue ways to accelerate objectives that shift an increasing proportion of expenses from the State Appropriation dollars to externally funded projects and/or seek further cuts in administrative support.