

Michigan Tech

Financial Overview

A review from the University Senate

December 2018

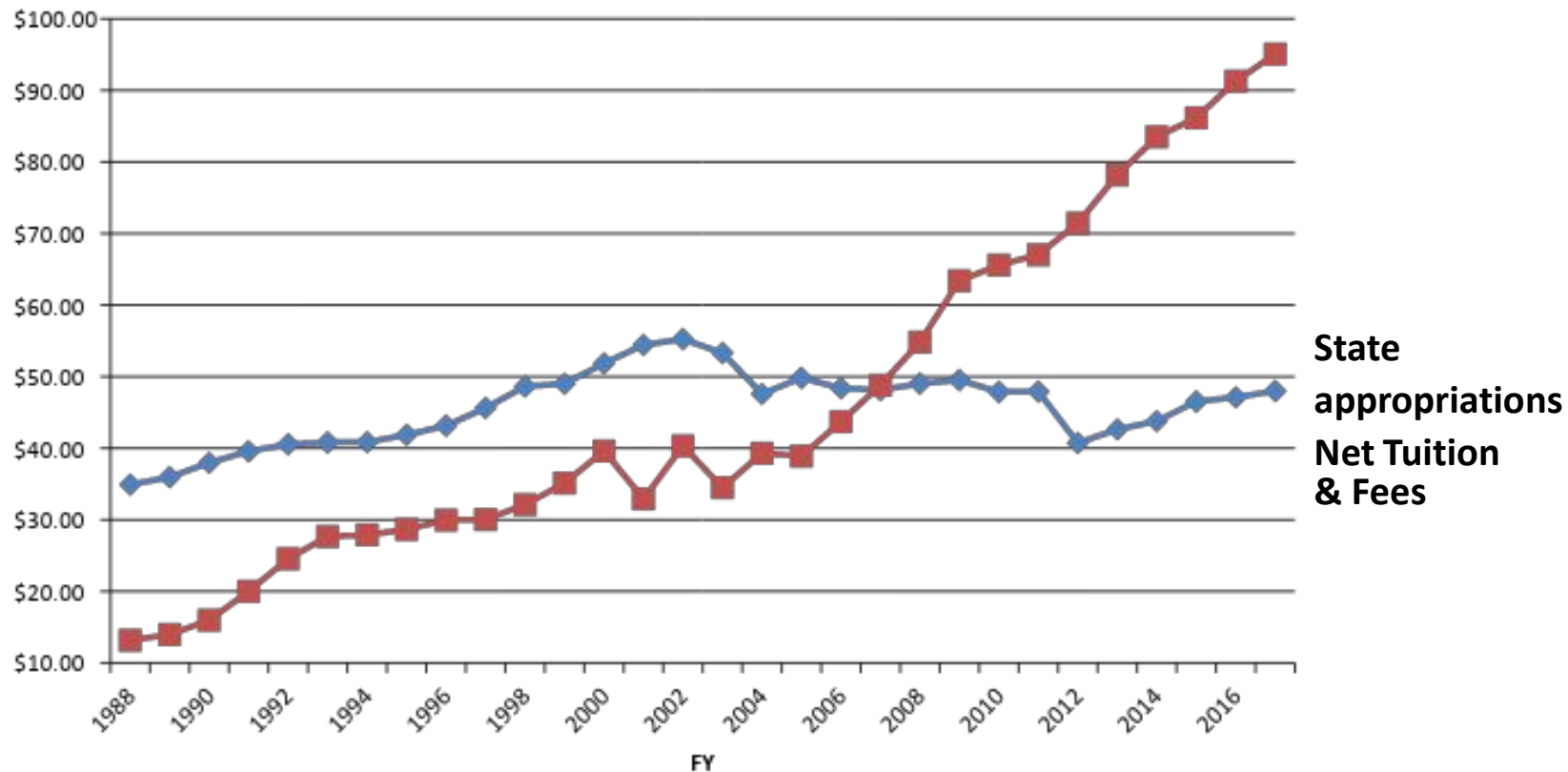
Michigan Tech Financial Overview

Facing the decline of state appropriations, tuition and fees have increased dramatically since 2003.

Driving factors for this increase:

- historical trends in compensation and benefits
- overall instructional costs
- overhead support functions
- building and long-term debt
- research expenditures

Michigan Tech Financial Overview



*Net tuition and fee revenues were readjusted starting in FY2013 in the audited financial statements. (e.g. FY2012 adjusted from \$71M to \$77M with the difference in auxiliaries.)

Undergraduate Tuition History

Full time in-state undergraduate tuition at Michigan Tech

2011-2012	\$12,615	(Fact book)
2012-2013	\$13,095	(Fact book)
2013-2014	\$13,470	(Fact book)
2014-2015	\$14,040	(Fact book)
2015-2016	\$14,286	(Fact book)
2016-2017	\$14,664	(Fact book)
2017-2018	\$15,074	(Fact book)

Average annual net price to undergraduate students, 2016-2017*

Includes financial aid, discounting, etc.

Midwestern Public Universities

Michigan Tech	\$17,139
University of Michigan – Ann Arbor	\$16,408
Michigan State	\$16,684
Western Michigan	\$15,219
Northern Michigan	\$14,005
University of Wisconsin	\$15,910
University of Illinois –Urbana - Champaign	\$16,638
University of Minnesota – Twin Cities	\$16,808
University of Minnesota – Duluth	\$16,381

* Full-time beginning undergraduate students who paid the in-state or in-district tuition rate and were awarded grant or scholarship aid from federal, state or local governments, or the institution.

Source: National Center for Education Statistics

Non-resident Graduate Tuition Rates

Source - Financial aid office

Current Graduate tuition	\$20,574 2 semesters <i>resident or non-resident</i>
Undergraduate in-state 2017-2018	\$15,074 2 semesters
Undergraduate out-of-state 2017-2018	\$33,426 2 semesters

Raising non-resident graduate tuition to peer average \$1400/credit yields approximately +\$2M/year.

Graduate School	Non-resident cost per credit* (AY18)	Graduate School	Non-resident cost per credit (2018)
Michigan Tech	\$1078	University of Wisconsin	\$1410
University of Michigan	\$2800	Georgia Tech	\$1440
Wayne State	\$1725	Virginia Tech	\$1490
Michigan State	\$2140	Minnesota -Duluth	\$1440
Western Michigan	\$1232	University of Minnesota – Twin Cities	\$2200
Texas A&M –College Station	\$1040	Purdue	\$1680
University of Illinois	\$2039	Louisiana Tech	\$650 ‡ per quarter basis

* Masters in engineering where applicable.

Employee/Faculty costs drive tuition increases

Michigan Tech's retirement obligations

- MPERS (<10 percent of payroll) obligation is about 70-75% of TIAA-CREF.
- Even with more plan participants, there is about a 10% combined decrease since 2009. *Source: audited financial statements*

2009 MPSER obligation	\$4.87 million	2009 TIAA-CREF/Fidelity	\$7.92 million
2010 MPSER obligation	\$4.67 million	2010 TIAA-CREF/Fidelity	\$7.17 million
2011 MPSER obligation	\$5.14 million	2011 TIAA-CREF/Fidelity	\$5.96 million
2012 MPSER obligation	\$5.76 million	2012 TIAA-CREF/Fidelity	\$6.15 million
2013 MPSER obligation	\$5.72 million	2013 TIAA-CREF/Fidelity	\$5.56 million
2014 MPSER obligation	\$5.34 million	2014 TIAA-CREF/Fidelity	\$5.74 million
2015 MPSER obligation	\$3.39 million*	2015 TIAA-CREF/Fidelity	\$6.00 million
2016 MPSER obligation	\$3.43 million	2016 TIAA-CREF/Fidelity	\$6.35 million
2017 MPSER obligation	\$4.87 million	2017 TIAA-CREF/Fidelity	\$6.63 million

*On September 30, 2015, the University received \$11,784,204 from the Michigan State plan for a plan error requiring excess contributions. The refund reduced the plan's net position and will impact the University's net pension liability as of June 30, 2016.

Medical Benefit Claims paid by Michigan Tech since 2008

Since 2012 there has been an actual 5% decrease (15% decrease CPI adjusted) , even though the non-student employee headcount is up by 12% since 2008.

All of the actual increase in healthcare costs have been paid by those covered.
(FY basis- audited financial statements, net of employee premiums)

<u>FY</u>	<u>Actual</u>	<u>In 2008 \$</u>
2008	\$13,875,743	\$13,875,743
2009	\$13,980,633	\$14,339,530
2010	\$14,310,670	\$14,302,470
2011	\$14,748,919	\$14,503,570
2012	\$15,735,827	\$15,034,420
2013	\$14,377,991	\$13,521,240
2014	\$12,498,807	\$11,571,370
2015	\$14,475,538	\$13,413,780
2016	\$13,333,124	\$12,188,150
2017	\$14,691,242	\$13,101,000

Total Employee Benefit Costs to Michigan Tech *have been flat for 10 years*

The total is down 3% (CPI adjusted) since 2008, even though the non-student employee headcount is up by 12.5% over same period.

<u>FY</u>	<u>Payments for benefits</u>
2008	\$35,802,819
2009	\$35,859,251
2010	\$34,709,950
2011	\$35,124,359
2012	\$37,803,478
2013	\$36,133,364
2014	\$34,132,400
2015	\$36,256,688
2016	\$36,428,782
2017	\$38,852,584

Average Total Compensation and Benefits per instructor

Increased 13% (actual dollars) since FY2006 (-10% CPI adjusted), due to small raises, benefit cuts, and lower cost structure (more junior faculty, lecturers, etc.) Current fund expenditures are up 72% (50% CPI adjusted) over the same period.

Sources: audited financial statements, controller's office & compendium

<i>FY</i>	<i>Instructional Compensation & Benefits</i>	General Fund Instructional Expenditures	Unrestricted current fund expenditures	Tenure/Tenure track faculty	Non-tenure track faculty
2006	\$38,559,398	\$44,317,174	\$140,827,244	312	11
2007	\$39,975,030	\$45,879,482	\$151,679,361	317	10
2008	\$43,292,487	\$49,316,020	\$166,313,946	310	48
2009	\$46,729,720	\$53,425,533	\$179,326,092	312	55
2010	\$47,987,133	\$54,767,561	\$187,242,616	329	57
2011	\$47,812,865	\$54,713,867	\$191,434,074	342	58
2012	\$47,866,389	\$55,128,119	\$198,550,847	354	56
2013	\$50,538,540	\$57,426,523	\$199,634,657	348	56
2014	\$52,005,389	\$58,577,540	\$208,232,321	336	57
2015	\$53,234,128	\$59,629,464	\$216,148,343	339	65
2016	\$52,619,134	\$59,030,724	\$223,413,537	341	68
2017	\$54,888,744	\$62,395,040	\$242,473,404	337	70

Average Faculty Salaries

Michigan and Regional Universities

Oklahoma State Faculty Salary Survey and AAUP Faculty Salary Survey (2017-2018) in \$1000's

Institution	Professor	Assoc. Professor	Asst. Professor
Michigan Tech	119 (4 th)*	97.4 (3 rd)*	80.8 (3 rd)*
U. of Michigan	170.2	113	95.6
Michigan State	154.6	101.9	82.6
Wayne State	132.5	97.6	85.8
U. of Wisconsin	136.2	102.1	89.5
Ohio State	150	101.3	89.4
Colorado School of Mines	132	94	82
Missouri Univ. of S & T	125.8	83.1	76.6
U. of Minnesota	143.4	100.5	89.0
U. of Illinois	150.5	104.2	95.5
Purdue	142.4	101.2	89.7
National Engineering avg.	153	105	86
Midwest Engineering avg.	164	111	93

* National quintile

How about institutional costs?

Bonded Debt

Total debt increased an order of magnitude under the last administration

(Audited financial statements)

2002	\$ 11,396,000
2003	\$ 17,198,000
2004	\$ 51,023,286
2005	\$ 50,274,702
2006	\$ 49,517,956
2007	\$ 51,131,794
2008	\$ 50,904,532
2009	\$ 56,112,688
2010	\$ 73,113,673
2011	\$ 82,496,244
2012	\$ 84,516,392
2013	\$ 85,711,936
2014	\$ 81,818,215
2015	\$ 82,754,664
2016	\$105,056,919
2017	\$101,887,771*

- This is a chiefly a result of bonded debt that has been issued since 2002. *Bond debt outstanding as of June 30, 2017 was \$101.9 M.*
- Last year MTU spent around \$7.5 M in bonded debt service; a portion of which may be associated with revenue lines (e.g. residence halls).

* *Principal only - \$154M with interest included.*

Debt service over the above period is >\$60M for combined total debt outlays of >\$200M.

Costs of expanding and maintaining our physical plant

(If you build it, they will come?)

Increase of nearly 1 million sq. ft. over last 3 decades (@\$7/sq ft per year maintenance).

Approximately 100 sq. ft. added per every person (students, staff, faculty) on campus.

M&M	217,200
Dow	167,000
Rosza	80,000
Little Huskies	4,400
Forestry Expansion	48,000
Lakeshore Center	50,000
Mineral Museum	9,000
Rehki building	51,000
Opie Library	54,000
Hillside Place	75,000
ATDC	27,500
Great Lakes Research Center	49,500
Blizzard building	55,000
Alternative Energy Center	4,000
KRC, Engineering Design Center	11,000
Miscellaneous (Chemistry, etc.)	17,600

Total additional space >910,000 square feet

Controlling Support Costs

Academic support*

Academic support has grown from \$10.7M in FY2006 to \$23.1 M in FY2017.

It includes:

- (1) Library operations,
- (2) Academic IT,
- (3) CTLF,
- (4) Marketing and Communications,
- (5) Corporate Relations and Intellectual Property,
- (6) Research Services,
- (7) The Graduate School,
- (8) Learning Centers.

Controlling Support Costs

Institutional support *

Institutional support includes:

- (1) executive-level activities for management and long-range planning of the entire institution, i.e. governing board, planning and programming, and legal services;
- (2) fiscal operations, including the investment office;
- (3) administrative data processing;
- (4) space management;
- (5) employee personnel and records;
- (6) logistical activities that provide procurement, storerooms, safety, security, printing, and transportation services to the institution;
- (7) support services to faculty and staff that are not operated as auxiliary enterprises; and
- (8) activities concerned with community and alumni relations, including development and fund raising.

FY	Institutional Support
2007	\$20,858,727
2008	\$24,364,292
2009	\$28,393,021
2010	\$27,429,468
2011	\$29,045,690
2012	\$32,570,634
2013	\$16,022,546
2014	\$17,450,450
2015	\$19,350,779
2016	\$20,377,479
2017	\$25,583,897**

*In FY2013 there was a re-categorizing of overhead expenditures (e.g.- as *academic support, student services, or operations instead of institutional support*). Some support functions (e.g. library, IT) are more closely aligned with MTU's core academic mission than others.

**Academic + Institutional support + Operations were up over \$8.3M from FY16 to FY17.

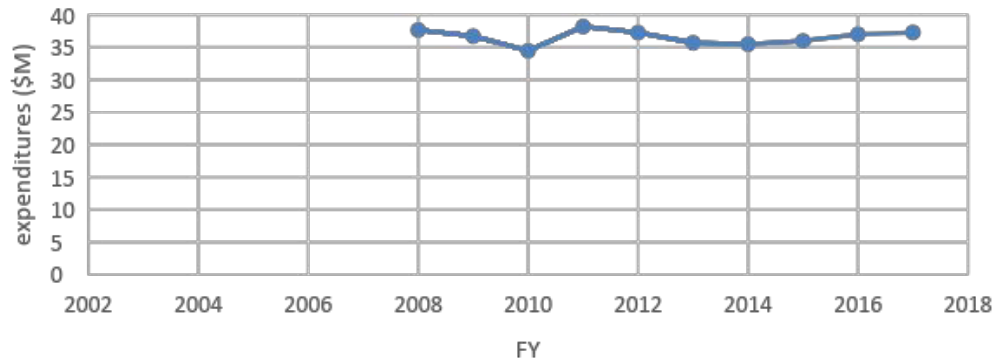
Can Research Dollars Help MTU's Finances?

CPI adjusted *external research* expenditures are essentially flat since 2008

Table of internal and external research expenditures per FY (source: compendium & NSF)

FY (NSF reported)	University (total) M\$	University (internal) M\$	University (external) M\$	University external \$M (CPI adjusted- 2008\$)
2008	60.35	22.7	37.65	37.65
2009	60.39	24.6	35.79	36.71
2010	63.47	29	34.47	34.45
2011	70.02	31.2	38.82	38.18
2012	71.99	33	38.99	37.25
2013	70.69	32.75	37.94	35.68
2014	68.53	30.22	38.31	35.47
2015	69.61	30.8	38.81	35.96
2016	72.54	32.08	40.46	36.99
2017			41.8	37.28

MTU external research expenditures (2008\$)



Internal research expenditures are up 450% since 2002, now 45% of total.

Internal research expenditures include: REF, IRAD, general fund salaries charged to research, start-up funds, cost share, Graduate Assistant Cost Share (GACS), Indirect costs (Facilities & Administrative F&A) on cost share and waivers of indirects (F&A) on sponsor funds, research related gifts, use charges & SURF Fellowships.

Increasing Endowment to the Level of our Peers

This table shows the list of universities that Carnegie has picked as our peer institutions. This list ranks us third from the bottom in total endowment (**).

If one divides Endowment by Enrollment, only fourteen of 38 (37%) have lower endowment/student values (*).

There is obviously substantial room for growth (improvement) in Institutional Endowment.

Institution	Enrolment	Endowment	Endowment/student
Michigan Tech	7,268	\$96M	\$13,209
Auburn University	23,964	\$729M	\$30,421
Baylor University	14,316	\$1.31B	\$91,506
Brigham Young University	31,233	\$1.47B	\$47,065
Catholic Univ. of America	3,314	\$337M	\$10,169
Clark University	3,153	\$408M	\$129,400
Clarkson University	3,090	\$191M	\$61,812
Clemson University	19,402	\$621M	\$32,007
Colorado School of Mines	6,117	\$286M	\$46,755
George Mason University	24,987	\$85.4M	\$3,401
Indiana/Purdue-Indianapolis	30,105	\$852M	\$28,301
Loyola University Chicago	11,420	\$750M	\$65,674
New Jersey Institute Tech	8,483	\$111.4M	\$13,132*
Old Dominion University	25,000	\$250M	\$10,000*
Polytechnic Univ., Brooklyn	4,432	\$173M	\$39,034
Saint Louis University	7,411	\$1.02B	\$137,633
South Dakota State Univ	10896	\$113M	\$10,371*
Syracuse University	15252	\$1.2B	\$78,678
University of Alabama	38563	\$683M	\$17,711
University of Montana	6,182	\$180M	\$29,117
Univ. Texas at Arlington	41,933	\$155M	\$3,696*
Univ. Texas at Dallas	27,642	\$531M	\$19,210
Univ. Texas at El Paso	21,341	\$242M	\$11,340*
University of Arkansas	11,614	\$1.0B	\$36,000
University of Denver	21,521	\$711M	\$61,219
University of Memphis	21,521	\$209M	\$9,711*
University of Mississippi	24,250	\$714M	\$29,485
Univ. of Missouri-Kansas City	16,944	\$1.12B	\$66,100
Univ. of Missouri-Rolla	8,884	\$176M	\$19,810
Univ. Nevada-Las Vegas	30,471	\$230M	\$7,574*
University of Oregon	22,980	\$905M	\$39,382
Univ. Puerto Rico-Rio Piedras	18,653	\$110M	\$5,897*
Univ. Southern Mississippi	11,815	\$116.8M	\$9,886*
University of Toledo	16,194	\$416M	\$25,689
Univ. of Wisconsin-Milwaukee	26,037	\$201M	\$7,720*
Utah State University	27,932	\$360M	\$12,888*
Virginia Commonwealth Univ.	31,036	\$1.84B	\$59,286
Western Michigan University	17,936	\$387M	\$21,577
Wright State University	14,038	\$85M**	\$6,054*

HLC Composite Financial Index (CFI)

The Higher Learning Commission (HLC) accredits degree granting colleges and universities. A CFI of 1.1 or higher = adequate financial health and no HLC review. A CFI below 1.1 = possible HLC review.

Accreditation criteria include whether “resources are sufficient to fulfill its mission, and respond to future challenges and opportunities”. An annual Composite Financial Index (CFI) is calculated annually to evaluate the sufficiency of institutional resources.

Combination of 4 financial ratios, each weighted as follows:

- Primary Reserve Ratio (35%) – Net assets/operating and non-operating expenses.
- Viability Ratio (35%) – Net assets/Long term debt.
- Return on Net Assets Ratio (20%) – Change in net assets/total assets.
- Net Operating Revenues Ratio (10%) – Net operating income (loss)/total revenues.

Higher Learning Commission MTU Composite Financial Index

	FY17	FY2016	FY2015	FY2014
Primary reserve ratio	0.43	0.38	0.38	0.40
Viability ratio	1.1	0.91	0.87	1.11
Return on Net assets ratio	1.63%	1.34%	0.38%	2.41%
Net operating revenues ratio	0.24%	-1.39%	-4.22%	1.03%
Composite financial index	2.2	1.8	1.4	2.3

Conclusions - Expenses

The aim of this analysis is to identify factors driving undergraduate tuition increases over the past 13 years based on an objective analysis of revenues and expenditures. To limit tuition increases

1. control of spending
2. increased non-tuition revenues

Senate recommendations:

1. ***Compensation and Benefits:*** We must stay competitive in our industry. Talent attracts talent. Total Compensation report summary “the importance of retirement programs, health and wellness benefits, family leave, childcare, and tuition reimbursement programs should be recognized as ways of creating more attractive compensation packages, while at the same time strengthening the University community. It should be viewed holistically, with an aim to minimize the overall impact of rising costs where possible while maximizing other benefits.....”
2. ***Long-term debt:*** Building come at *big* cost. The “*If you build it they will come*” is an incomplete solution. We need a more comprehensive, proactive plan to limit additional long term debt while immediately driving revenue at project completion.

Conclusions - Expenses

Senate recommendations continued :

3. ***Overhead spending:*** The support budgets (academic, instructional, and operations) have seen the largest increases (>\$8M from FY16 to FY17 alone). The trend of increasing spending on overhead functions rather than revenue generation functions (e.g. teaching & research) must change.
 - A. Implement system that creates financial rewards for revenue generation activities
 - B. Increase the return of efforts of advancement units
4. ***Truly strategic investments:*** Commit to invest *only* in valued and innovative educational initiatives, not just new courses, minors, or degrees.
 - A. *Seriously* evaluate financials for new programs and reassess finances of programs added over the past 10 years. Adding degrees for less than 10 new students doesn't help the big picture.
 - B. Increase collaborative efforts with industry, non-profit, government partners in creating educational initiatives focusing on current/future market needs.

Conclusion - Revenues

1. Tuition revenues: The majority of revenue increases over the past 10 years have come from students in the form of tuition, fees, room & board, etc. ,consider more strategic options:

- A. Market price elasticity by program is uncertain & non-STEM degrees are under pressure.
 - I. Create separate upper and lower division tuition.
 - II. Set tuition by program & demand.
 - III. Downsides include state restrictions on tuition increases and decreased good will.
- B. Increase student numbers (setting hard enrollment targets and meeting them).
 - I. Student recruitment (add sought-after programs, effective branding/marketing)
 - II. Improved retention.
 - III. Enhance partnerships, 2+2 programs, work-for-credit, industry-driven programs
 - IV. Satellite campuses to bring MTU to larger numbers of students including:
 - a) Southeastern Michigan, Midland/Saginaw, and Traverse City areas
 - b) The Fox valley area of Wisconsin, which has no similar engineering programs.
 - V. Use summer semester more effectively and reward departments that participate.
- D. Discounting is currently high, consider adjusting discounting to peer and regional levels.
- E. Invest in on-line teaching resources and marketing, determine appropriate price points, and create a reward structure for faculty willing to make the extra effort.

Conclusion - Revenues

2. ***Charge market prices for graduate education:*** The current non-resident graduate tuition structure is based upon a model from nearly 20 years ago, and a better price-point model is needed.
 - A. Review graduate school tuition. Increasing graduate tuition to an average market price could net an additional \$1-2M/year.

3. ***Increase external research dollars:*** Over the past 10 years *external* research expenditures are flat (CPI adjusted).
 - A. **Challenge:**
 - I. Most of the increase in total research expenditures is due to changes in the accounting system to find more “internal” research expenditures.
 - II. The number of research active tenure/tenure track faculty is flat over that period, and several top researchers have left or moved into administrative roles.

Conclusion - Revenue

B. Efforts needed to improve acquisition of external research dollars must include:

- I. Hiring more research-active faculty (not just instructors) with sufficient resources to acquire large grants, develop center, and increase external research dollars.
- II. Further enhance the center approach to research, especially via regional partnerships and solicitation of development funds from the state.
- III. Break down academic silos and encourage collaborative Ph. D. programs initiatives similar to the Physical Therapy Ph. D.

Conclusions - Revenue

4. ***Growing the endowment:*** The earlier comparison table shows we lag significantly behind our peers in endowment, a resource all universities are increasingly dependent upon.
- A. Initiation of a major fundraising campaign in the near future is critically important, especially for funding new capital projects and enhancing both undergraduate and graduate scholarships.
 - B. Increasing the involvement of the academic departments in fundraising could enhance the reach of the advancement team and help in the discovery of new prospects.

5. State appropriations:

These are just now approaching the state appropriation levels of 20 years ago. An appeal to our legislature for a "one-time" bump in its investment in STEM education might be considered a long-shot, but is worth a try with new administrations both in Lansing and at MTU. This might not only be in the form of capital requests, but also or research center development or matching funds for research and equipment. MSU and U. of M. have been very successful at this game. Further enhancing Michigan Tech's visibility/presence in Lansing and Washington is more important than ever with the state's economy in recovery.