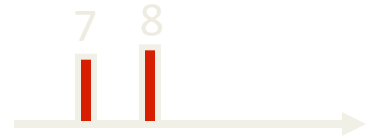# CAMPUS FORUM

December 11, 2012

Michigan Tech
Create the Future

Accredited Engineering Programs
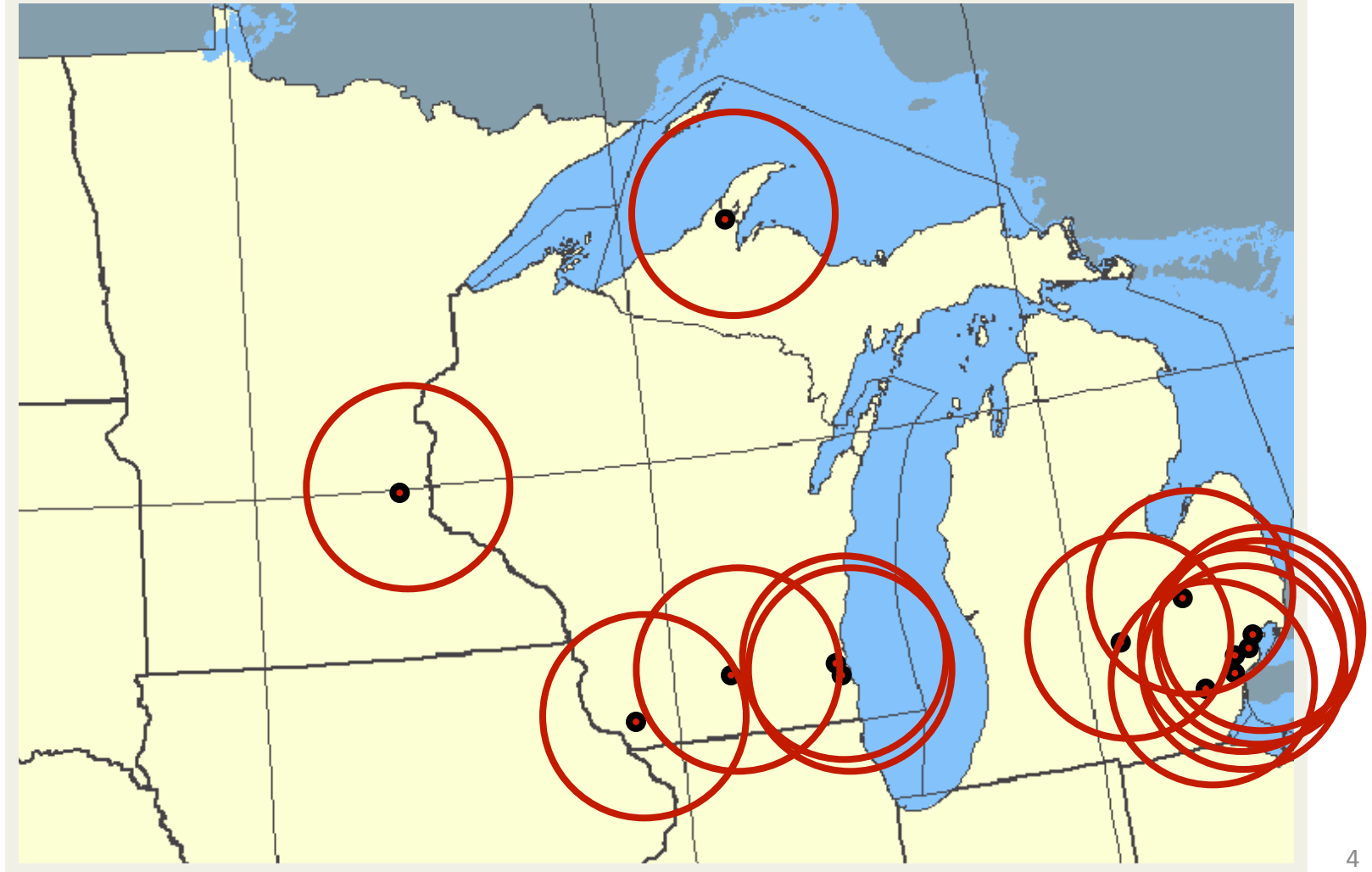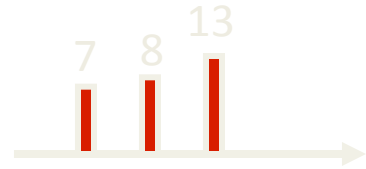## 1936 – Industrial Era

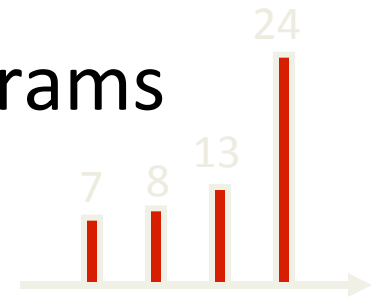# Accredited Engineering Programs
1956 – Post War Era

Accredited Engineering Programs
1976 – Post Sputnik Era

Accredited Engineering Programs
1996 – Information Era

Accredited Engineering Programs
2006 – Today
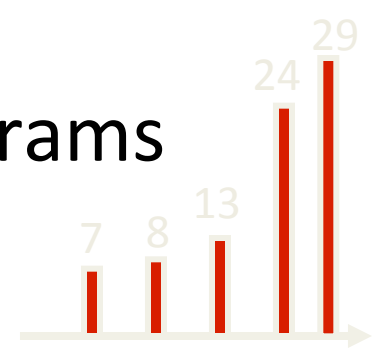
The Market
-Population Density

Population Density 2000 (per square mile)
- 250 - 66935 persons
- 100 - 249
- 50 - 99
- 25 - 49
- 10 - 24
- 5 - 9
- 1 - 4
- Less than 1
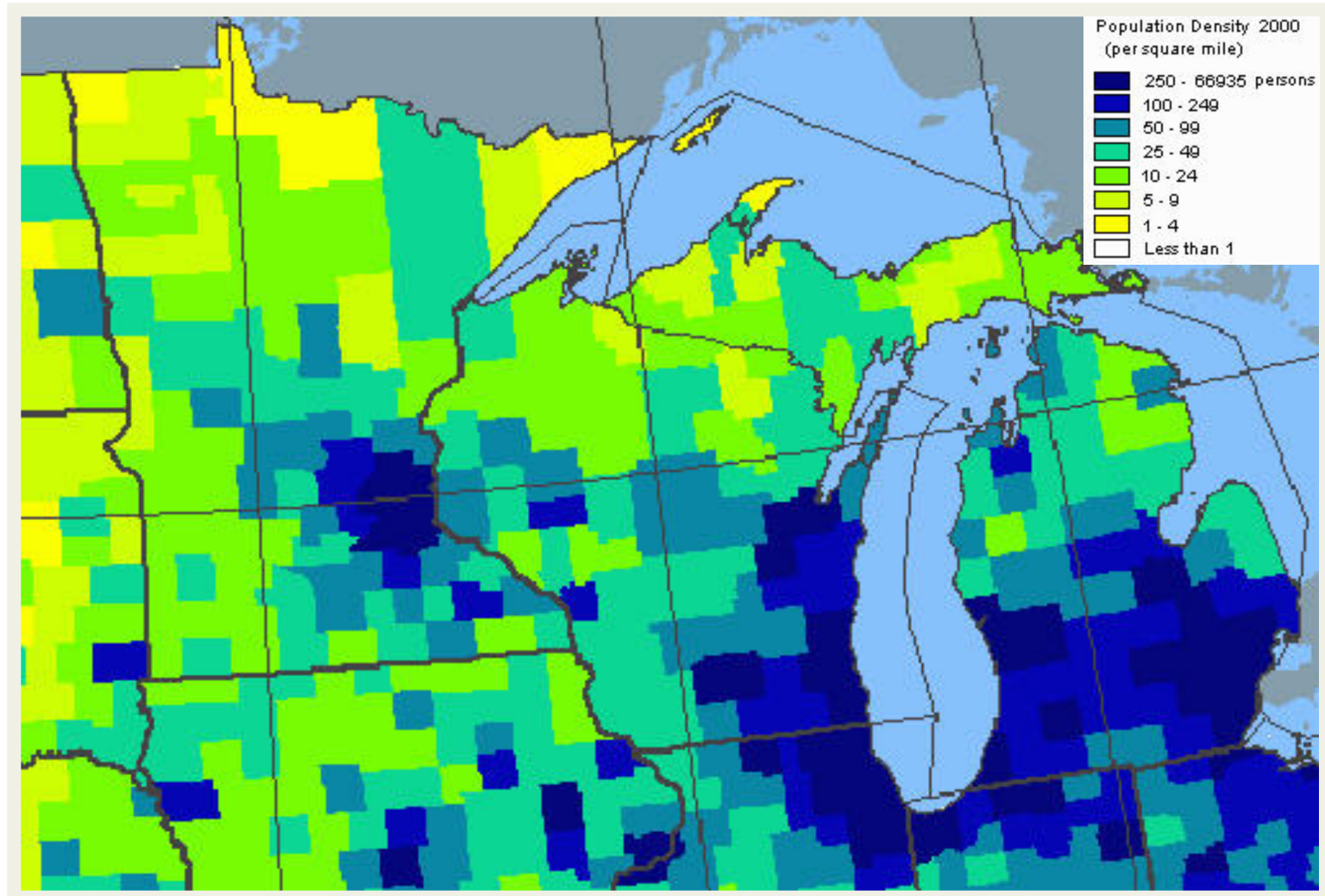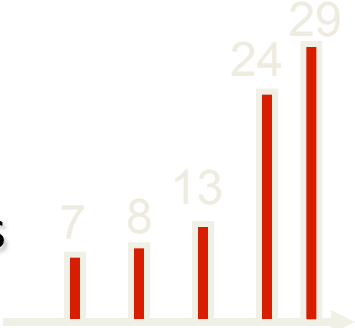
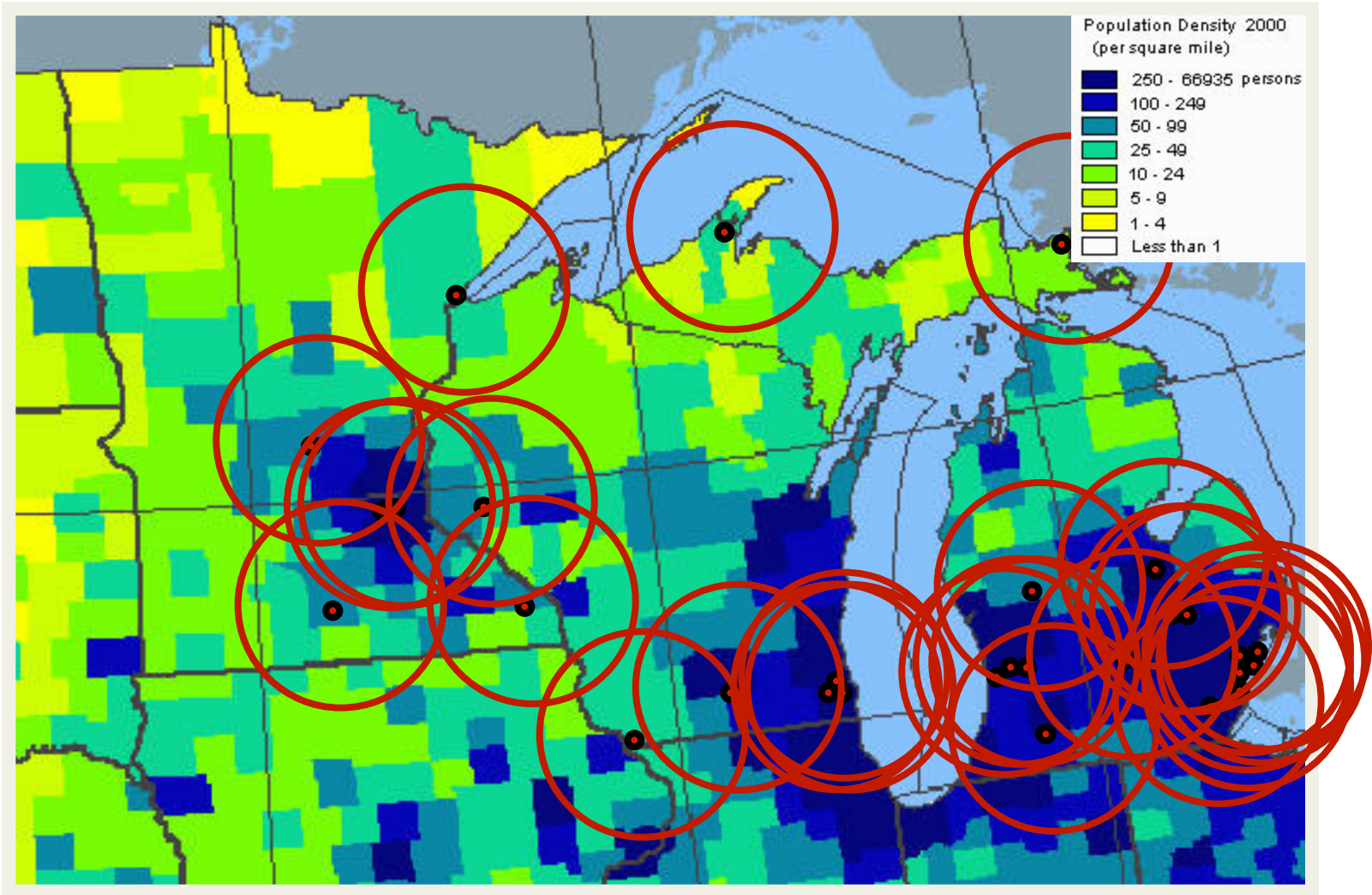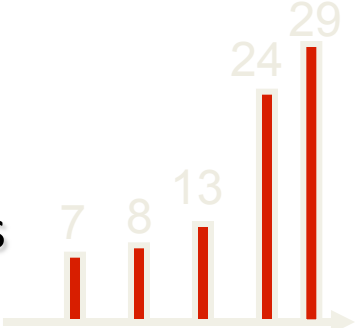# The Market is Covered

-Accredited Engineering Programs
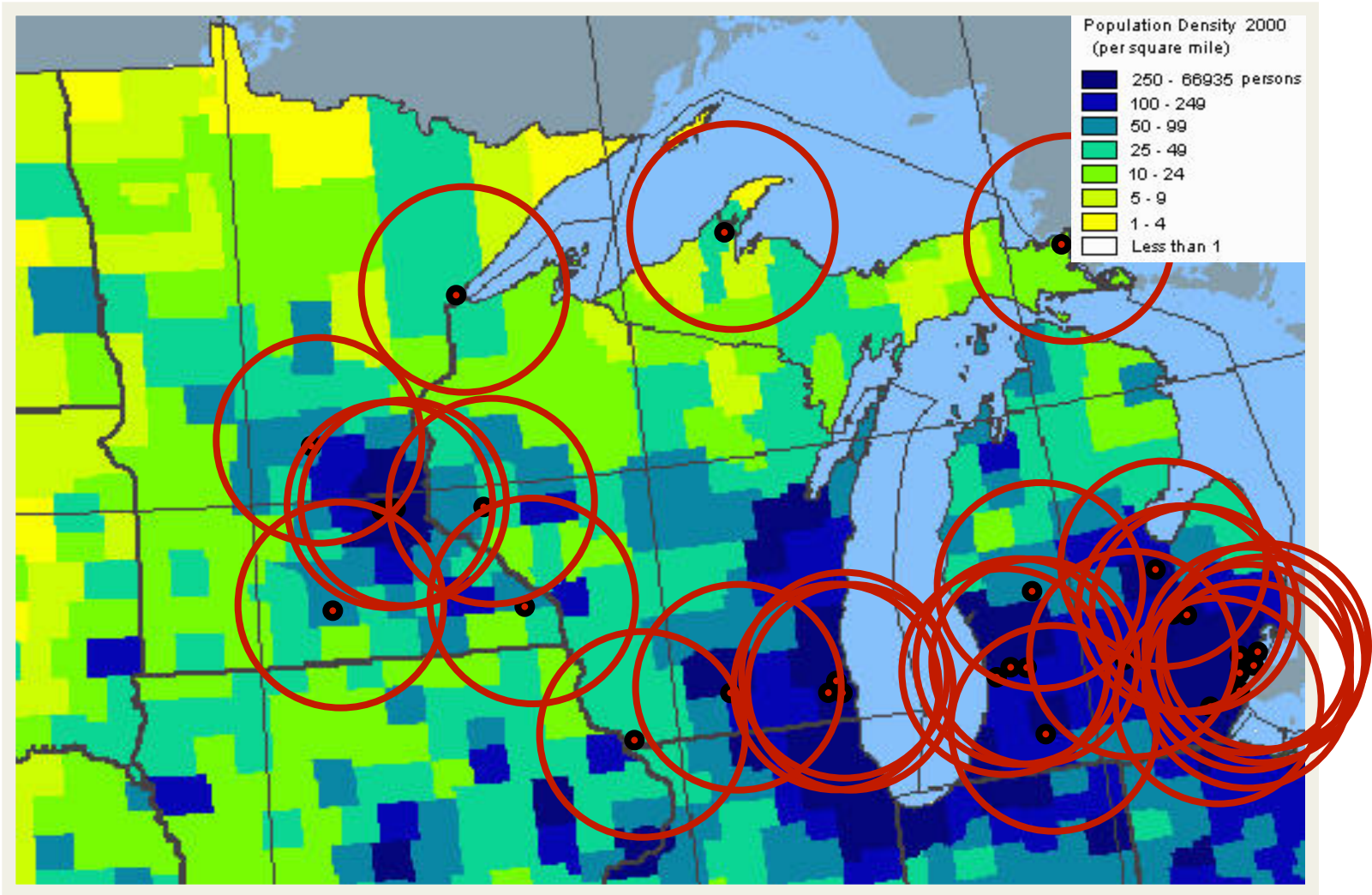
WHY?

The Market is Covered

-Accredited Engineering Programs

Top Midwest Public Universities

Regional

Truman State University (MO)
University of Northern Iowa
Univ. of Wisconsin–La Crosse
Washburn University (KS)
Univ. of Wisconsin–Eau Claire
University of Michigan–Dearborn
Univ. of Wisconsin–Stevens Point
Eastern Illinois University
University of Minnesota–Duluth
Grand Valley State University (MI)
Univ. of Wisconsin–Platteville
Univ. of Wisconsin–Whitewater
Missouri State Univ.
Univ. of Wisconsin–Green Bay
Univ. of Wisconsin–River Falls
Southern Illinois U.–Edwardsville
University of Wisconsin–Stout
Western Illinois University
Northwest Missouri State Univ.
Southeast Missouri State Univ.
Winona State University (MN)
Univ. of Nebraska–Kearney

National

3	University of Michigan–Ann Arbor
8	Univ. of Wisconsin–Madison
11	U. of Illinois–Urbana-Champaign
14	Pennsylvania State U.–University Park
19	University of Pittsburgh
21	Ohio State University–Columbus
21	Purdue Univ.–West Lafayette (IN)
21	University of Iowa
26	Miami University–Oxford (OH)
30	Indiana University–Bloomington
30	Michigan State University
30	Univ. of Minnesota–Twin Cities
38	Iowa State University
45	University of Kansas
45	Univ. of Nebraska–Lincoln
52	Ohio University
52	University of Missouri–Rolla

Which list do we want to be on?

2006 - More Need For Graduate Degrees

- Technology has gotten more complex
  - Look at your car engine, your computer
- Need for more graduate degrees
  - 33% in USA
  - 18% at Michigan Tech

ATTACHMENT 5
University General Fund Revenue History

Chart: "As Percentage of Total General Fund Revenue" (y-axis, 0.0% to 75.0%) versus fiscal year (x-axis, FY 1987 to FY 2012). Three data series are shown: Tuition and Fees (rising from about 32% in FY 1987 to about 70% in FY 2012), State Appropriations (declining from about 61% in FY 1987 to about 21% in FY 2012), and Other (remaining low, around 5-8%).

NOTE: FY 2011 and 2012 amounts are estimates.
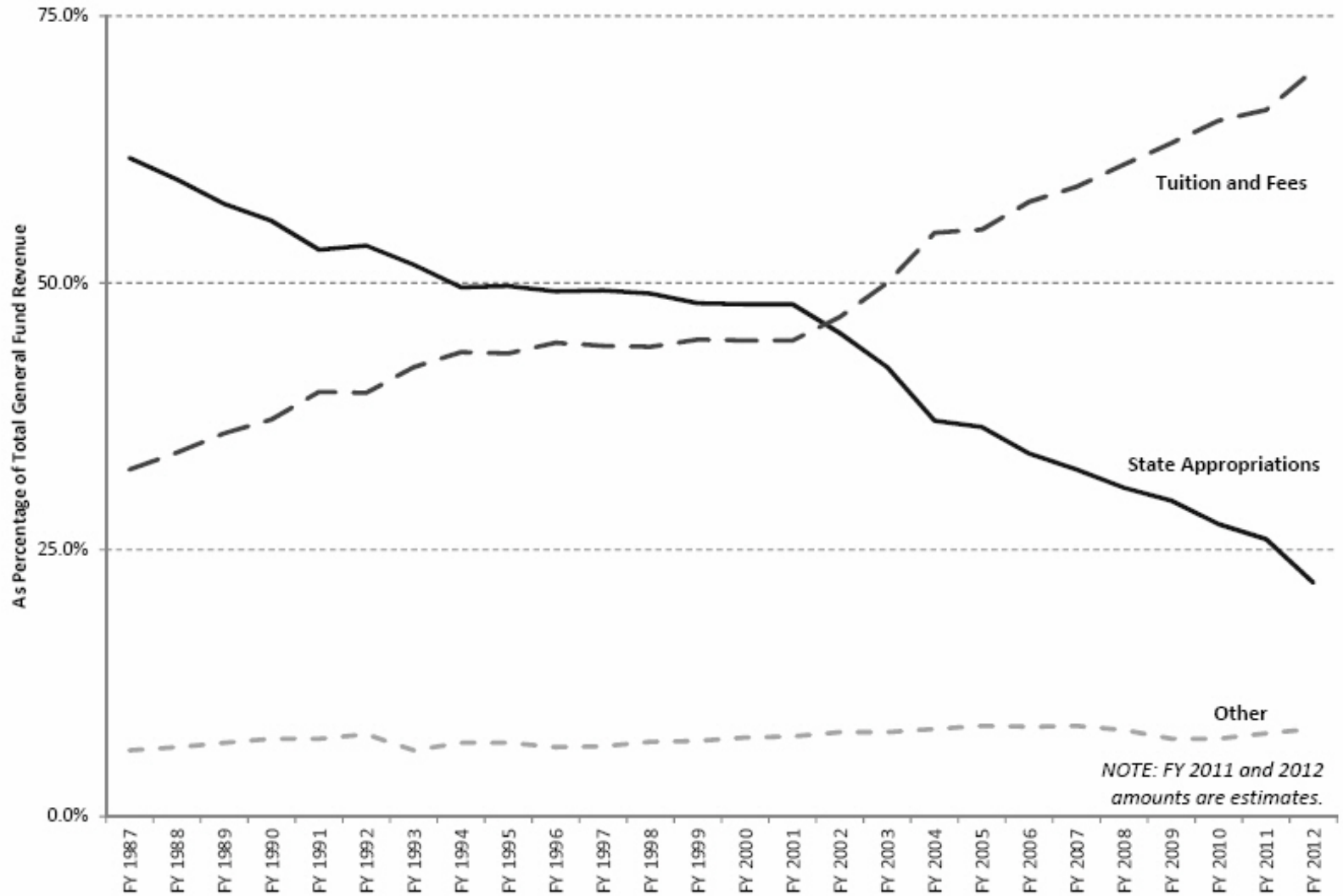
Revenue Trends FY94 - FY12
Current Fund
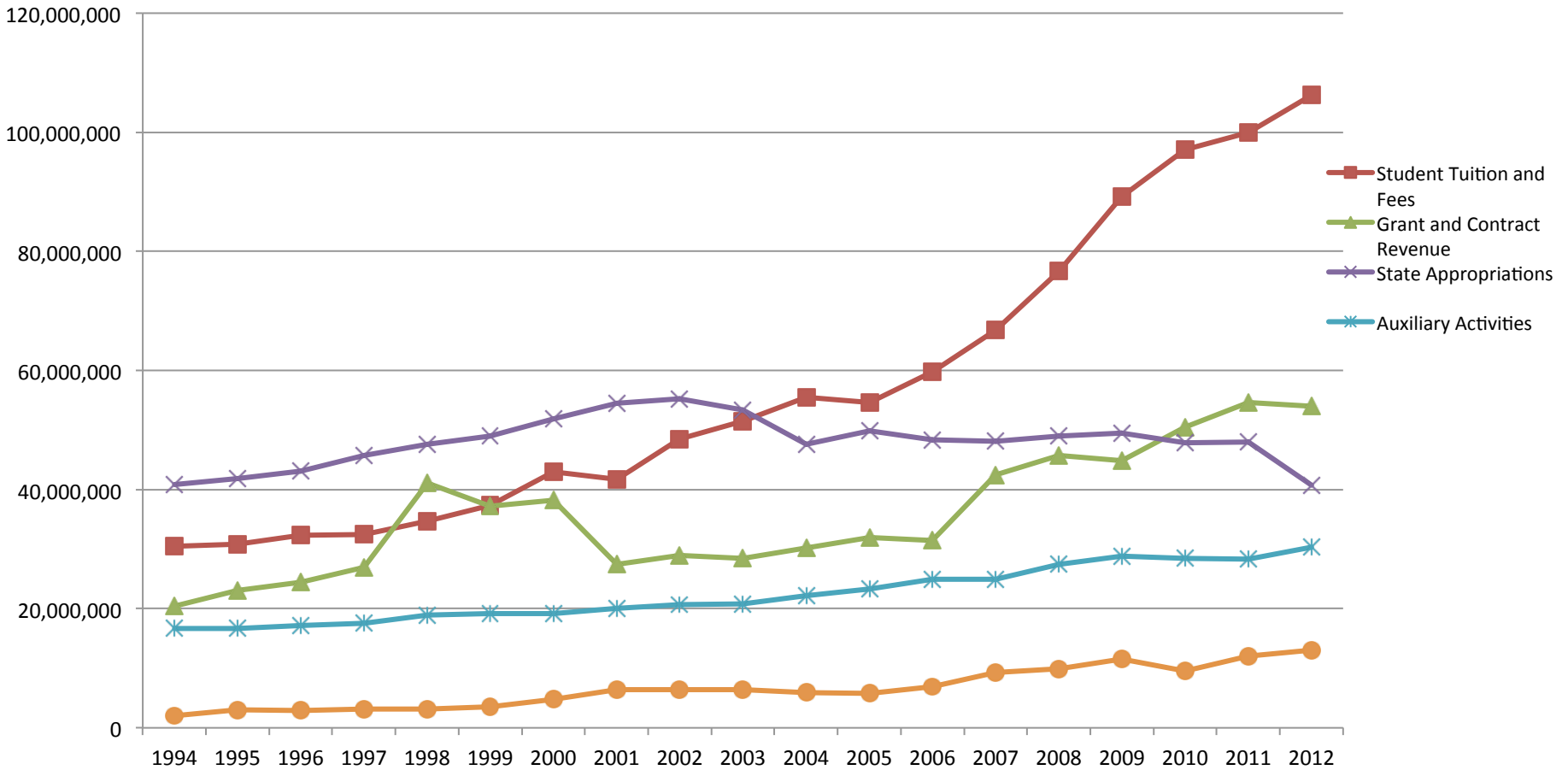
Figure 3
University of Michigan: Relative Changes in Share of Core Revenues, 1975 to 1996

State Appropriations and Contracts
Federal Grants and Contracts
Tuition and Fee Revenue
Private Gifts and Contracts
Endowment Income
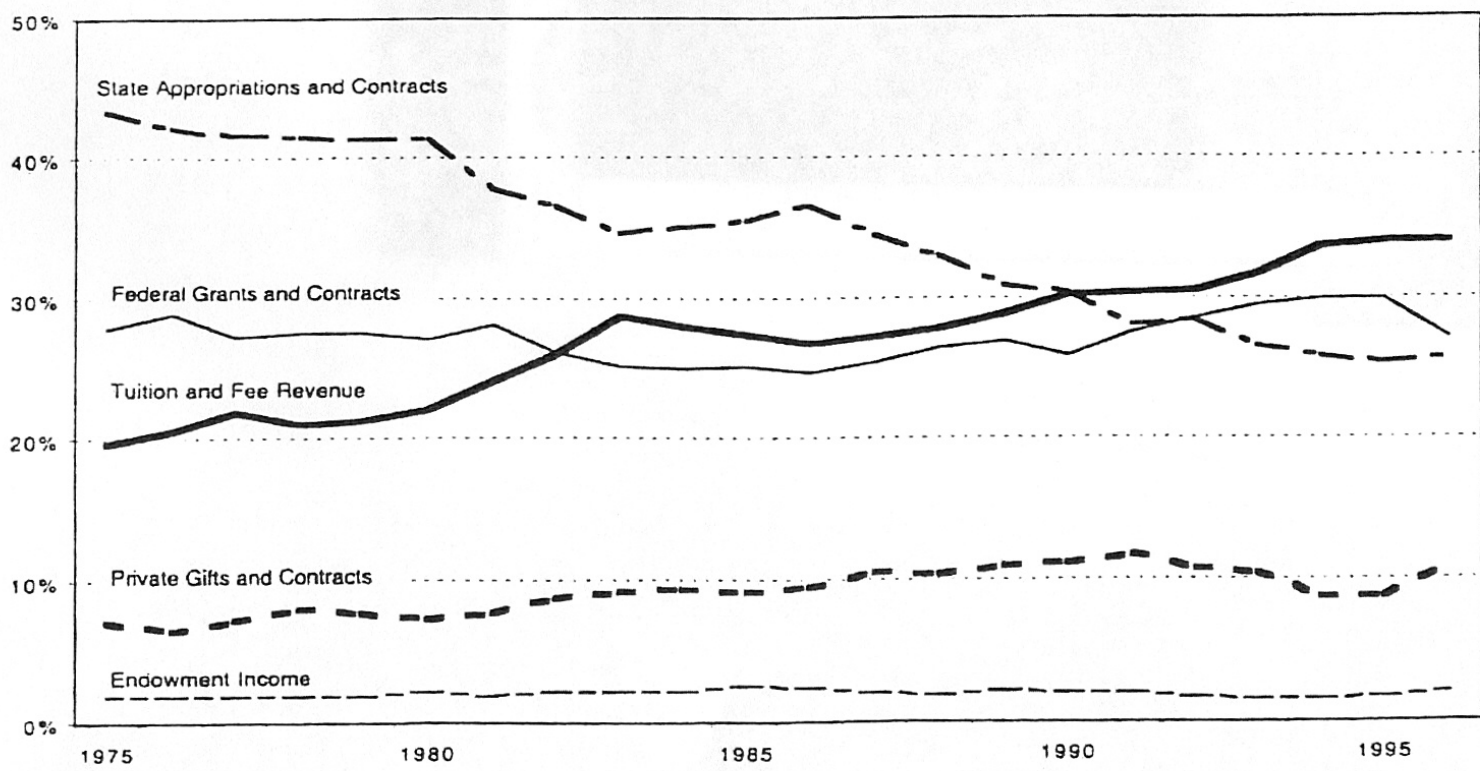
Source: *Digest of Education Statistics*, Office of Educational Research and Improvement, U.S. Department of Education, various years.

2006 - The Future of Michigan Tech

-Turning the Strategic Plan into Action

✔ 1. We Must Change
            Top National University

2. How We Change

3. What We Must Do

Michigan Tech
— Create the Future

Strategic Plan

- Approved by Board of Control on April 27, 2012

    ✓ Major Goals Remain Same
    - ➤ People
    - ➤ Distinctive Education
    - ➤ Research/Scholarship/Creativity/Entreprenuership

- http://www.mtu.edu/stratplan/

Faculty Drives Reputation

-Reputation attracts the best students

- Faculty drives reputation
  - Conferences / papers / citations
  - Research programs
  - Graduate programs

Driving factors in the US News rating system

2006 - We Must Recruit Top Research Oriented Faculty

- The Good News
  - Half our faculty will turn over in the next seven years
- The Bad News
  - We don't have a program to replace them with research oriented faculty
- What does it take?
  - Professorships and Chairs
  - Restructuring and prioritization of compensation and hiring policy
  - Start-up funds
  - SFHI

The Future of Michigan Tech
-Turning the Strategic Plan into Action

✔ 1. We Must Change
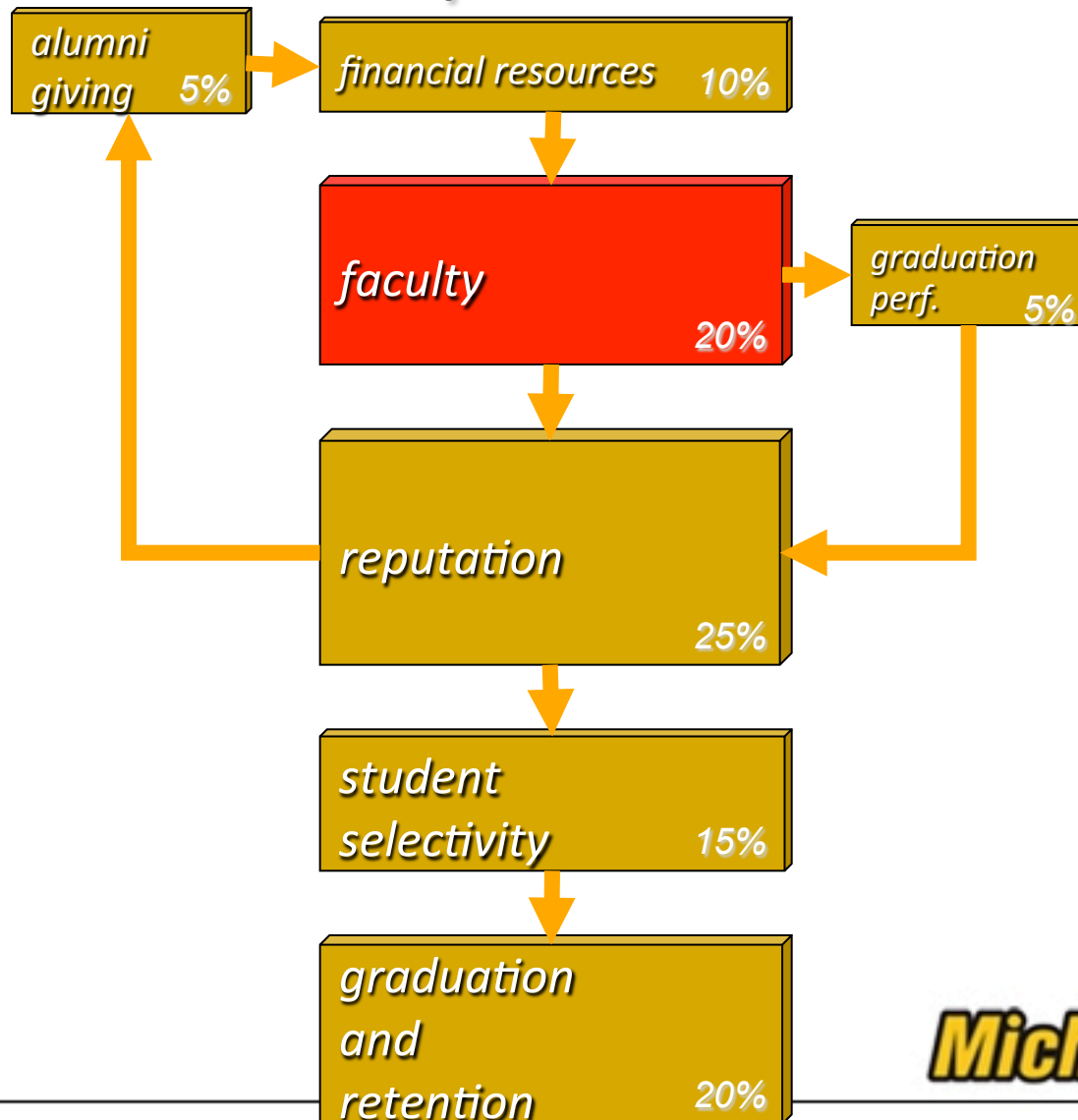
  Top National University

✔ 2. How We Change

  Attract Research Faculty

3. What We Must Do

2006 - What We Must Do
-in the next 7 years

- Alumni
  - Chairs and Professorships
  - Planned giving
- Michigan Tech Fund
  - Capital Campaign aimed at change
  - Sell the vision
  - Fund graduate research faculty
- Administration
  - Budget for change, direct funds to research faculty
  - Research oriented Provost, Deans, and Chairs
  - Review and manage the change
- Board of Control
  - Hold administration accountable for the change
  - Develop the indicators for change
    - regular reviews – every meeting

Michigan Technological University
Tenured/Tenure Track Faculty by Gender
2006-07 through 2011-12

	2006-07	**2007-08**	**2008-09**	**2009-10**	**2010-11**	**2011-12**
Male	235	239	241	244	253	261
Female	65	71	71	85	89	93
Total	300	310	312	329	342	354
Percent Female	21.7	22.9	22.8	25.8	26.0	26.3

Note: Figures include all tenured and tenure track instructional and research faculty. Also includes those faculty on sabbatical or on unpaid leave of absence. Deans, associate deans, department chairs, executives and professional staff with tenure are excluded.

SFHI

	Faculty #	Start Date
Sustainability	6	Aug 2008
Computational Discovery/Innov.	6	Aug 2009
Health & Energy	7	Aug 2010
	4	Aug 2011
	2	Aug 2012
Water & Transportation	7	Aug 2012
	32	

expect 3 to 4 more in Water & Transp.

Michigan Tech
Create the Future

SFHI

As of Dec 2012:

18 faculty submitted a total of 229 grants

16 faculty were awarded **60 proposals** for a total of **$6.2 million of external research funding**

In addition to research, they contribute significantly to teaching and the growth in graduate student education
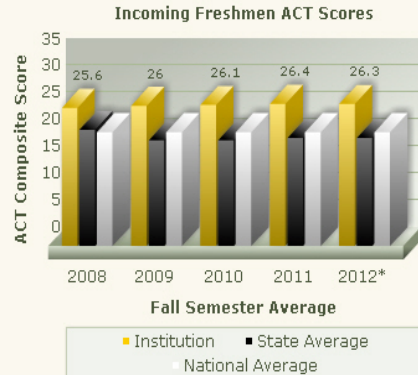
Dashboard Metrics

Incoming Freshmen ACT Scores

Projected	2012	2013	2014	2015	2016	2017
ACT Composite	26.4*	26.6	26.8	27.0	27.1	27.1

	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012
ACT Composite	25.6	26	26.1	26.4	26.3*
ACT Math	26.5	26.9	27.3	27.2	27.2*
ACT English	24.4	24.8	25.1	25.5	25.3*

Incoming Freshmen ACT Scores

ACT Composite Score (y-axis: 0–35)

2008	2009	2010	2011	2012*
25.6	26	26.1	26.4	26.3

Fall Semester Average

- Institution
- State Average
- National Average

Sponsored Programs Awards

Projected	2013	2014	2015	2016	2017
Sponsored Awards (In Millions)	46.0	48.8	51.7	53.8	56.0

Detail by College/School and Department

Amount of Awards in Millions

Sponsored Programs Awards (in Millions) (y-axis: $0M–$65M)

2007-08	2008-09	2009-10	2010-11	2011-12
$41.33M	$53.06M	$58.72M	$54.14M	$43.29M

Fiscal Year

Endowment Value

Endowment Balance in Millions

Endowment Balance (in Millions) (y-axis: $0M–$90M)

2007-08	2008-09	2009-10	2010-11*
$78.61M	$63.77M	$68.94M	$79.04M

Fiscal Year
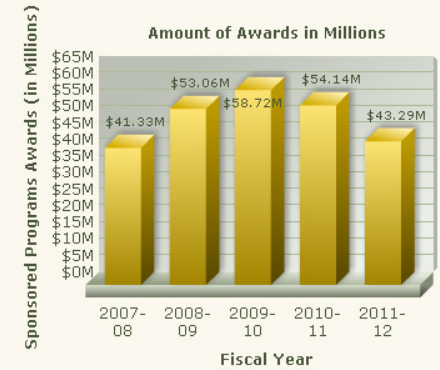
Projected	2012	2013	2014	2015	2016	2017
Endowment (In Millions)	89.3	100	105	110	120	120
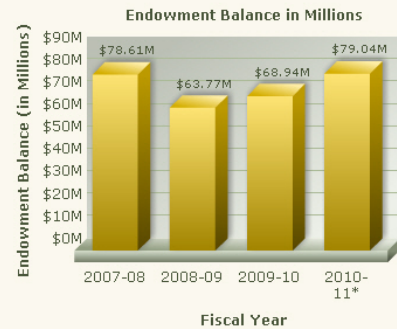
Number of PhDs Awarded

Projected	2012	2013	2014	2015	2016	2017
PhDs Awarded	64	66	68	70	72	74

Detail by College/School and Department

Number of PhDs Awarded

Number PhDs Awarded (y-axis: 0–80)

2007-08	2008-09	2009-10	2010-11	2011-12
54	57	56	55	63

Fiscal Year

Michigan Tech — Create the Future
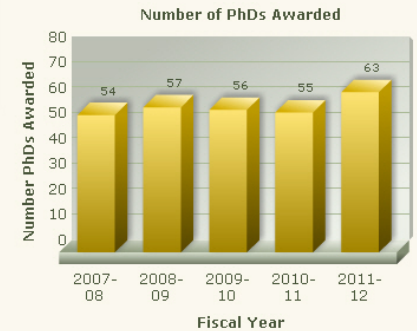
Michigan Tech Graduate Degrees
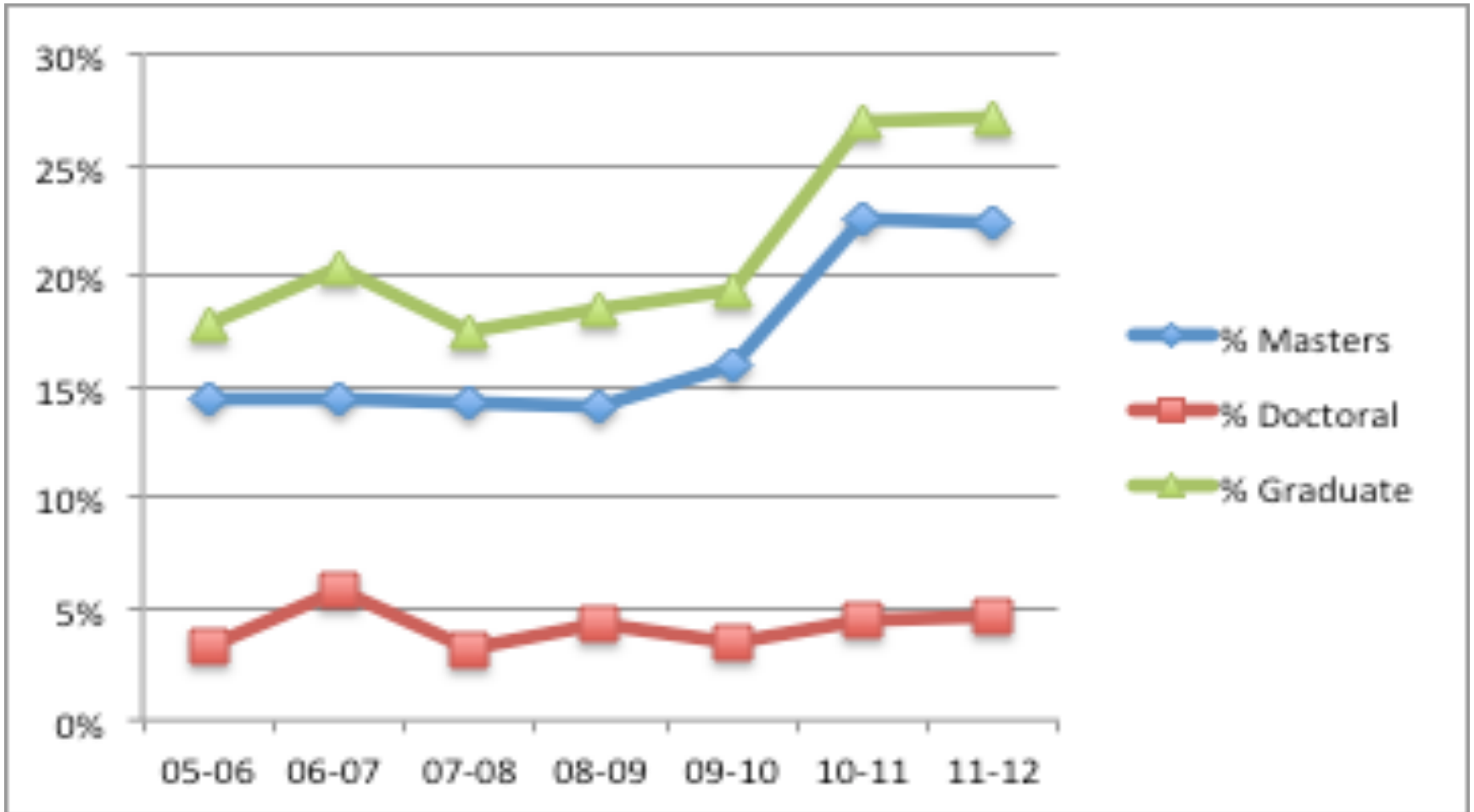
Michigan Tech Graduate Degrees
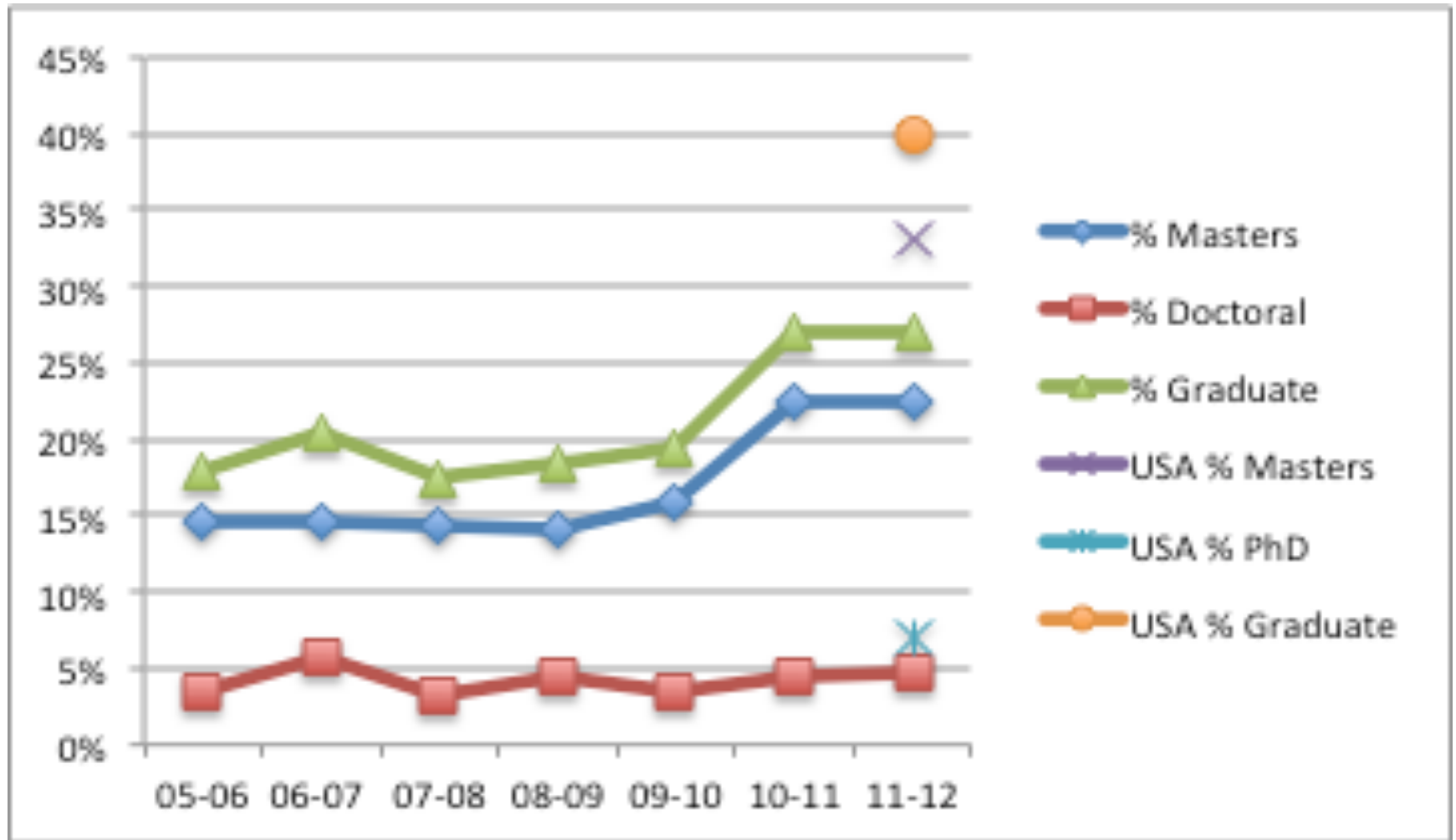
Michigan Tech Research Institute

40

23

$4.3

$10.8

■ Employees

■ Research
Expenditures
(millions)

FY 2007   **FY 2012**
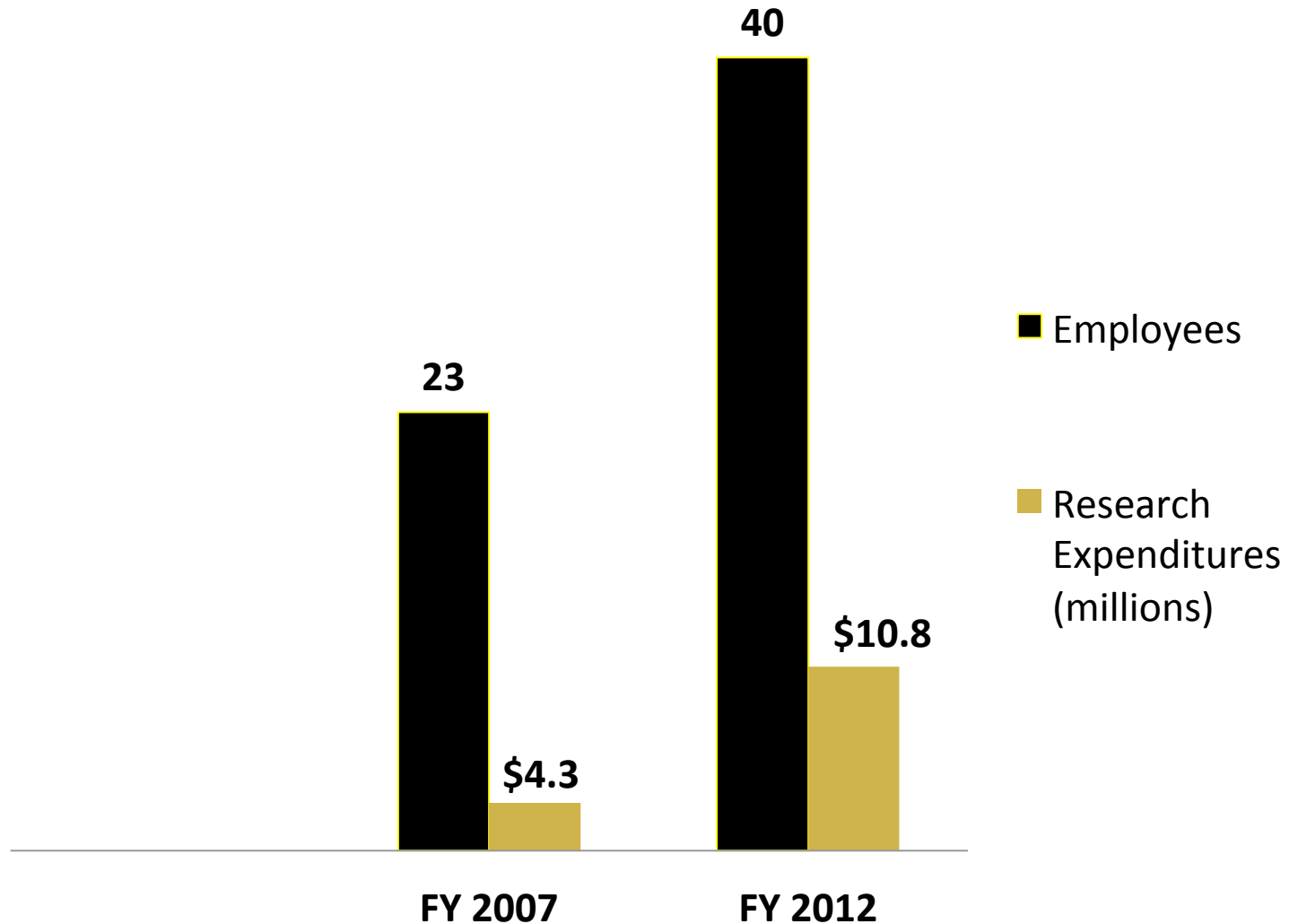
Full Time Graduates Vs. FTE Undergraduates
Michigan Public Universities and Michigan Tech Benchmark Universities
Fall 2011
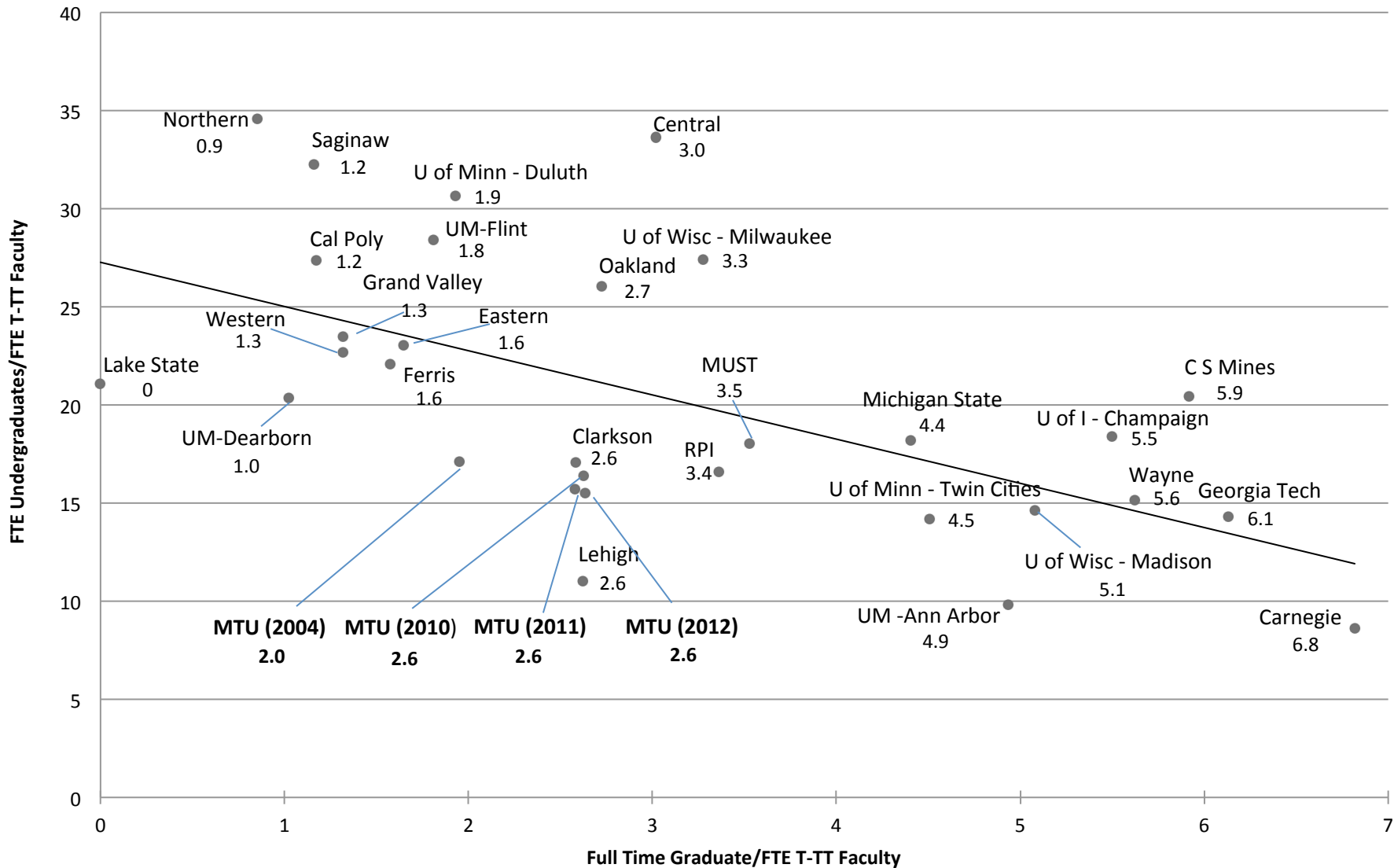
Progress Toward Goals

2006-2012
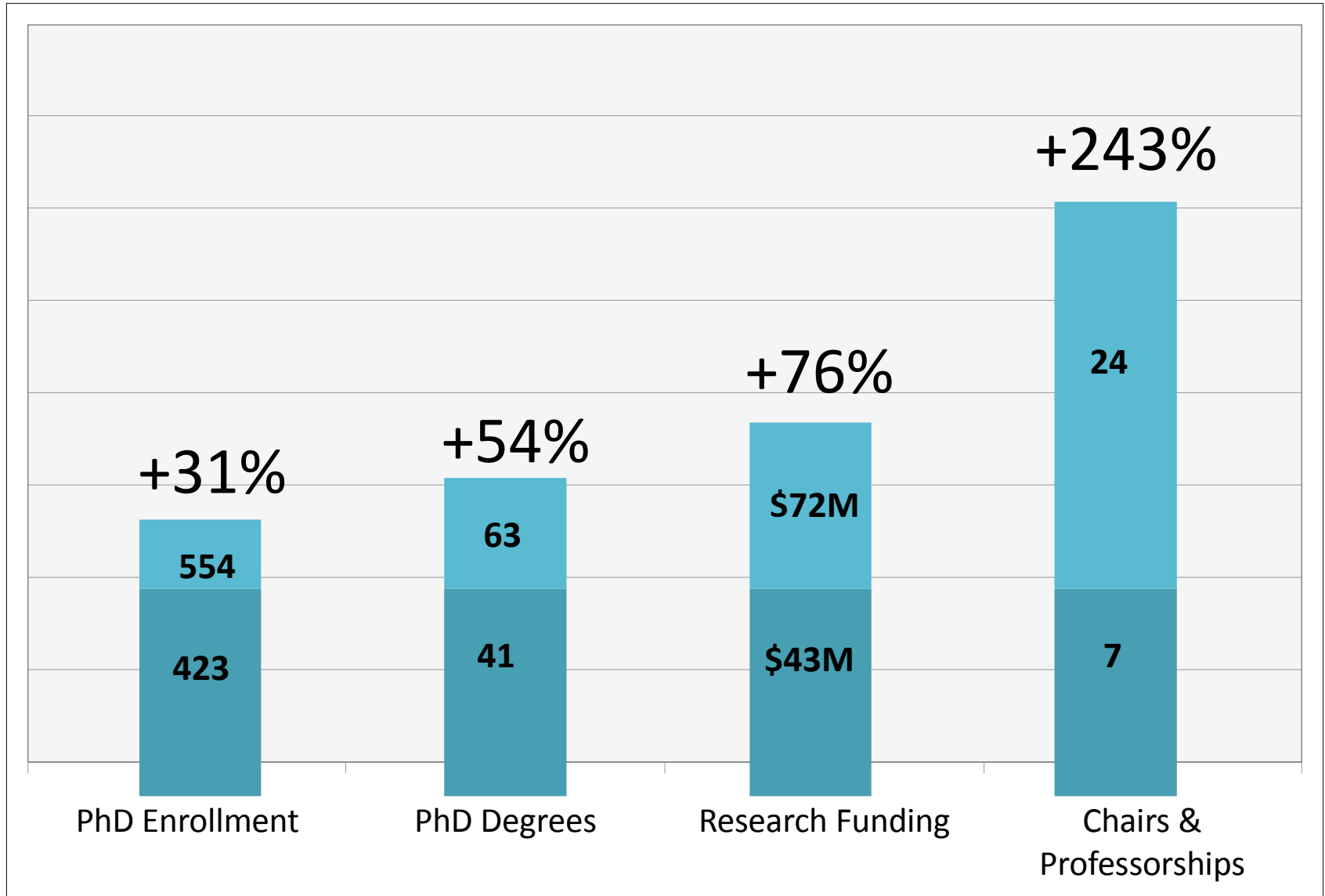
Campaign

❖ End Date – June 30, 2013

❖ Goal - $200M

Campaign Totals by Source

June 2006 – November 30, 2012

Total $188,941,368

Corporations $11,151,567

Foundations & Other Orgs $2,671,158

Gifts-in-Kind $6,174,229

Corp Sponsored Research $41,887,493

Major & Restricted Gifts/Pledges $47,650,380

Annual Fund $9,350,848

Discounted Planned Gift Commitments $66,215,794

Realized Planned Gifts $3,839,899
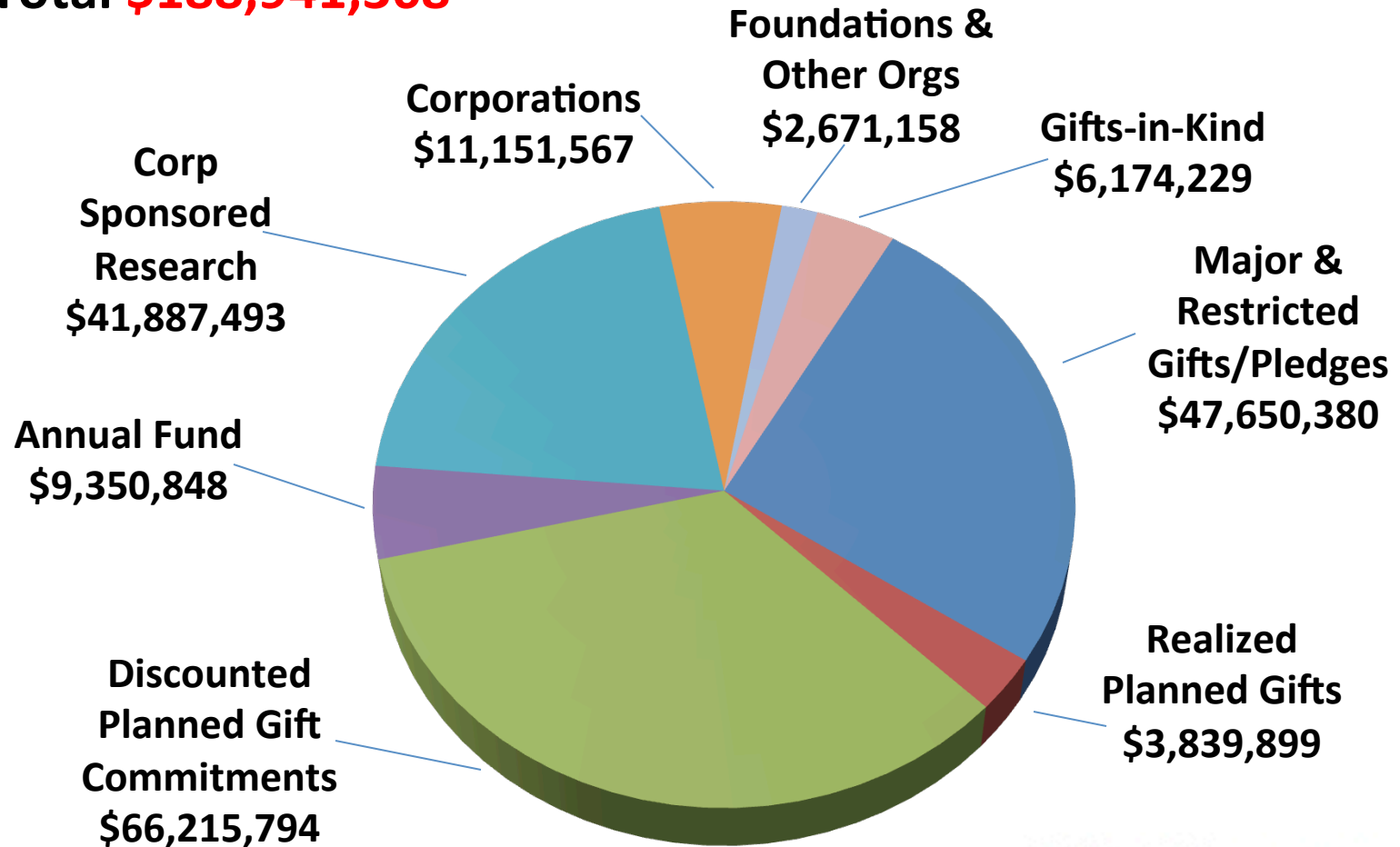
Michigan Tech
Create the Future

MICHIGAN TECHNOLOGICAL UNIVERSITY
Generations of Discovery
Campaign Progress Summary
as of November 30, 2012

Alumni & Friends	$127,056,922
Corporations	53,039,059
Private Foundations	2,671,158
Gifts-in-Kind	6,174,229
Grand Total	**$188,941,368**

Michigan Technological University
Generations of Discovery
Campaign Breakdown
As of November 30, 2012

- Facilities $ 7.2M
- Scholarships/Fellowships   31.2M
- Chairs & Professorships   38.2M
- Depts. Program Support/Ops.   57.1M
- Unrestricted or undesignated   4.8M
- Research   50.4M

  TOTAL $188.9M

Michigan Tech Fund
Planned Giving Registry ($129,253,143.47) - Actuarial Expectancy by Years
July 31, 2012
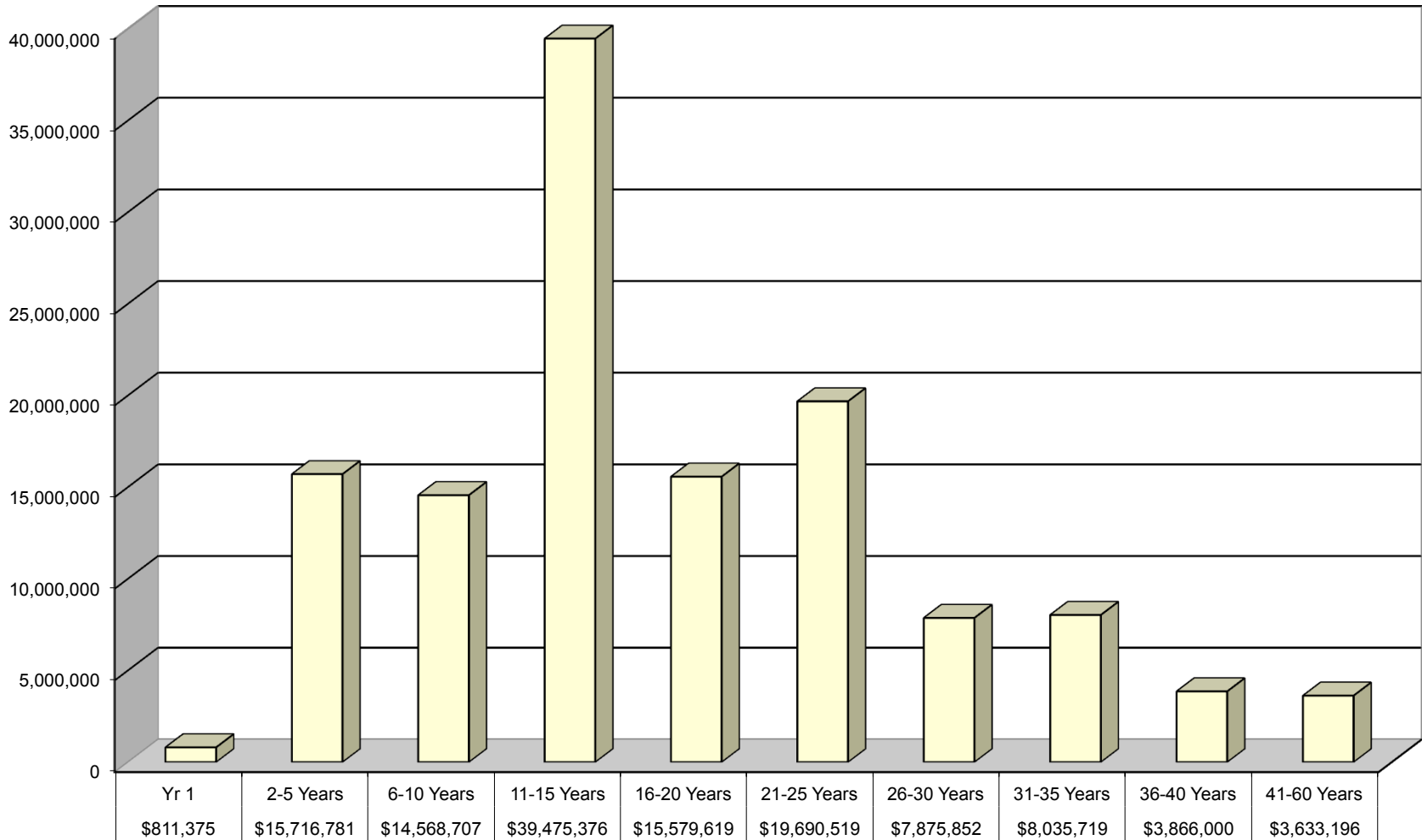
Yr 1	2-5 Years	6-10 Years	11-15 Years	16-20 Years	21-25 Years	26-30 Years	31-35 Years	36-40 Years	41-60 Years
$811,375	$15,716,781	$14,568,707	$39,475,376	$15,579,619	$19,690,519	$7,875,852	$8,035,719	$3,866,000	$3,633,196

MichiganTech
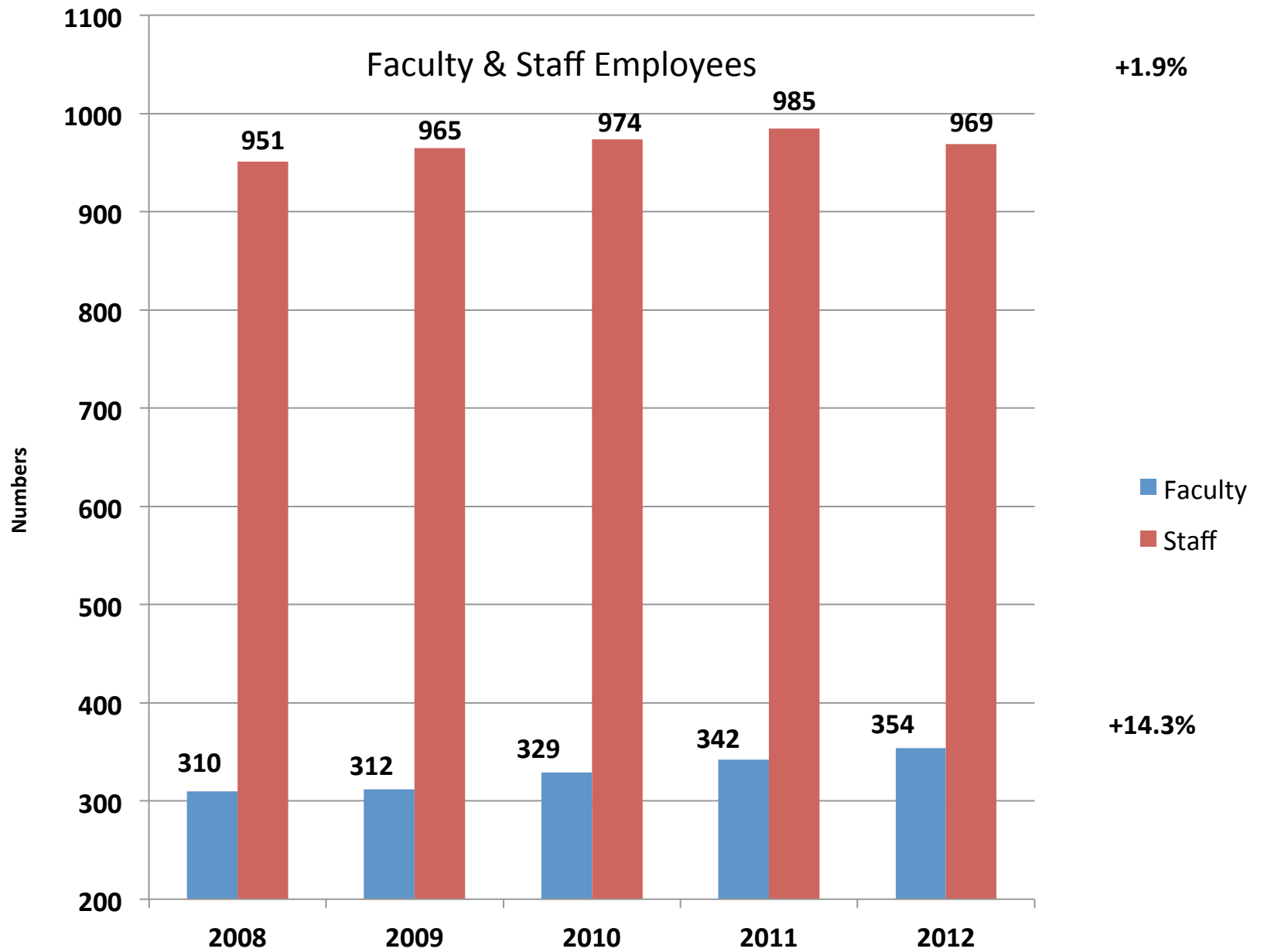Create the Future

The Future of Michigan Tech

-Turning the Strategic Plan into Action

✔ 1. We Must Change

   Top National University

✔ 2. How We Change

   Attract Research Faculty

✔ 3. What We Must Do

   We all have a critical role

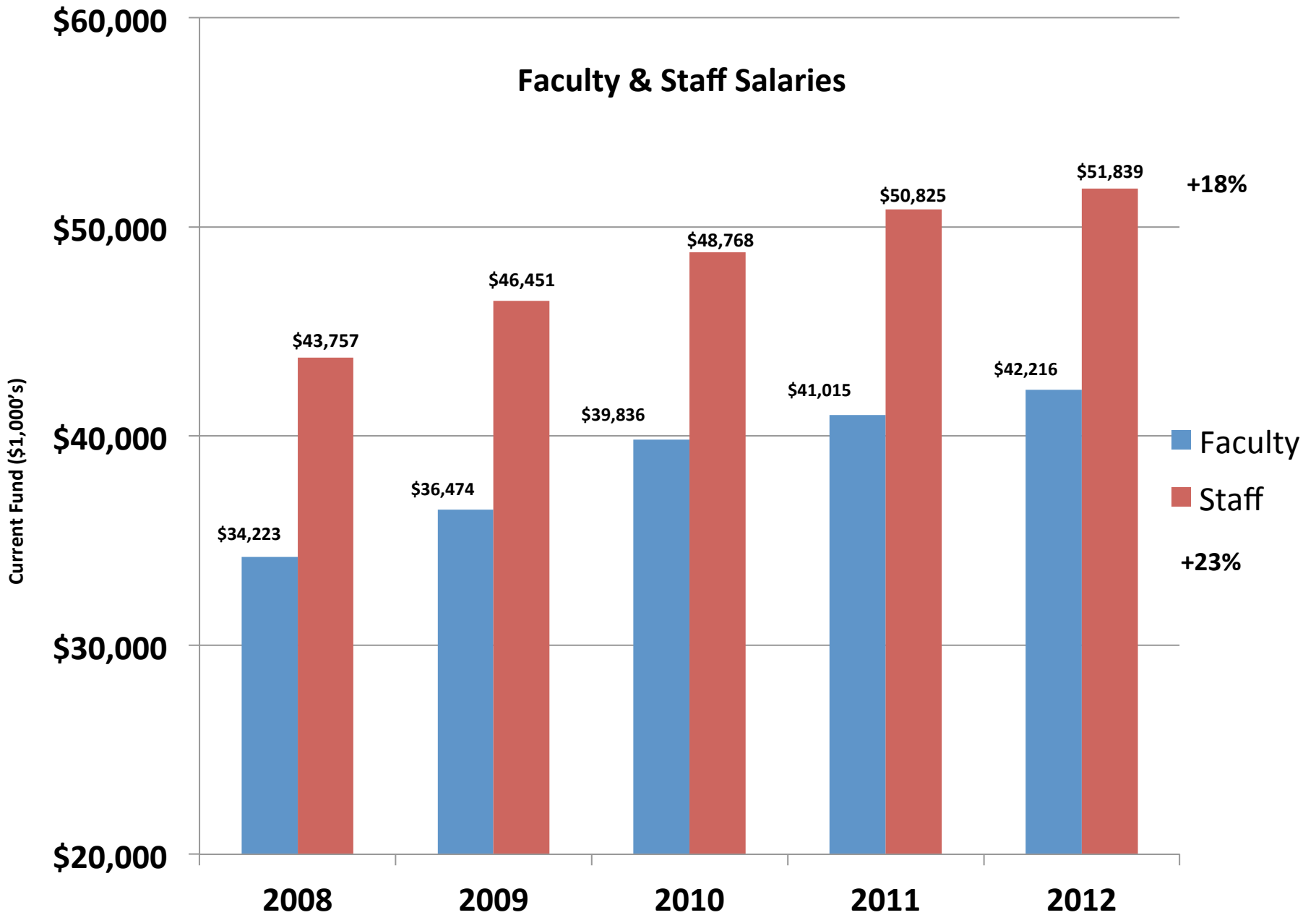# BUDGET

Current Fund Balances 2006-2012

FISCAL YEAR	GENERAL FUND	DESIGNATED FUND	AUXILIARY FUND	R&I FUND	EXPENDABLE RESTRICTED FUND	TOTAL CURRENT FUNDS
6/30/2006	(9,418,709)	11,711,149	9,361,936	1,100,429	1,801,945	14,556,750
6/30/2007	(9,144,578)	12,704,216	8,122,457	1,366,980	3,030,770	16,079,845
6/30/2008	(9,639,258)	14,459,317	9,210,497	(1,548,501)	2,933,114	15,415,169
6/30/2009	(11,119,692)	17,622,935	9,408,680	(3,098,785)	2,821,643	15,634,782
6/30/2010	(11,260,088)	17,669,080	8,109,037	(1,897,826)	2,692,577	15,312,779
6/30/2011	(10,999,503)	17,482,191	6,850,582	(62,315)	2,808,383	16,079,338
6/30/2012	(12,602,185)	15,816,151	9,235,156	(3,551,797)	3,590,414	12,487,739

Michigan Tech
Create the Future

Faculty & Staff Employees

Numbers (y-axis)

FY (Fall Census) (x-axis)

Year	Faculty	Staff
2008	310	951
2009	312	965
2010	329	974
2011	342	985
2012	354	969

+1.9%

+14.3%

Faculty
Staff

Source: University Compendium

Faculty & Staff Salaries

Chart showing Faculty and Staff salaries (Current Fund in $1,000's) by Fiscal Year:

Fiscal Year	Faculty	Staff
2008	$34,223	$43,757
2009	$36,474	$46,451
2010	$39,836	$48,768
2011	$41,015	$50,825
2012	$42,216	$51,839

Staff: +18%
Faculty: +23%

Fiscal Year

General Fund FY 2012	Planned (millions)	Actuals (millions)
Operating Revenue	$118,930	$117,139
Operating Expenses	$(144,951)	$(148,927)
Transfers	$(14,740)	$(12,734)
Non-Operating Revenues	$40,761	$42,919
NET	---	$(1,603)

Current Fund FY 2012	Budget (millions)	Actuals (millions)
Operating Revenue	$192,175	$189,024
Operating Expenses	$(244,494)	$(247,400)
Transfers	$(6,037)	$(5,043)
Non-Operating Revenues	$58,398	$59,828
Net	$42	$(3,591)

General Fund FY13 Budget

Budget (thousands)

| | Base Year | Budget Year | | |
	FY12	FY13	Variance	
Operating Revenues				
	$ 118,929,621	122,901,384	3,971,763	3.34%
Operating Expenses				
Staff S&W	$ (27,728,705)	(27,864,030)	(135,324)	0.49%
Faculty S&W	$ (39,511,577)	(41,609,216)	(2,097,638)	5.31%
Grad Student S&W	$ (3,369,235)	(3,504,004)	(134,769)	4.00%
Undergrad Student S&W	$ (984,956)	(943,447)	41,509	-4.21%
Fringe Benefits	$ (24,209,149)	(25,438,614)	(1,229,465)	5.08%
Supplies & Services	$ (16,662,514)	(15,203,289)	1,459,225	-8.76%
Scholarships	$ (27,264,097)	(31,453,097)	(4,189,000)	15.36%
Utilities	$ (4,520,850)	(4,520,850)	0	0.00%
Carry forward/Contingency Reserve	$ (3,200,000)	(3,200,000)	0	0.00%
	$(147,451,083)	**(153,736,546)**	**(6,285,463)**	**4.26%**
Transfers				
	$ (12,239,738)	(11,724,738)	515,000	-4.21%
Non-operating Revenues (Expenses)				
	$ 40,761,200	42,559,900	1,798,700	4.41%
Net Income (Loss)	$ -	0	0	

Commencement Speaker

Dr. Arden L. Bement

Chief Global Affairs Officer
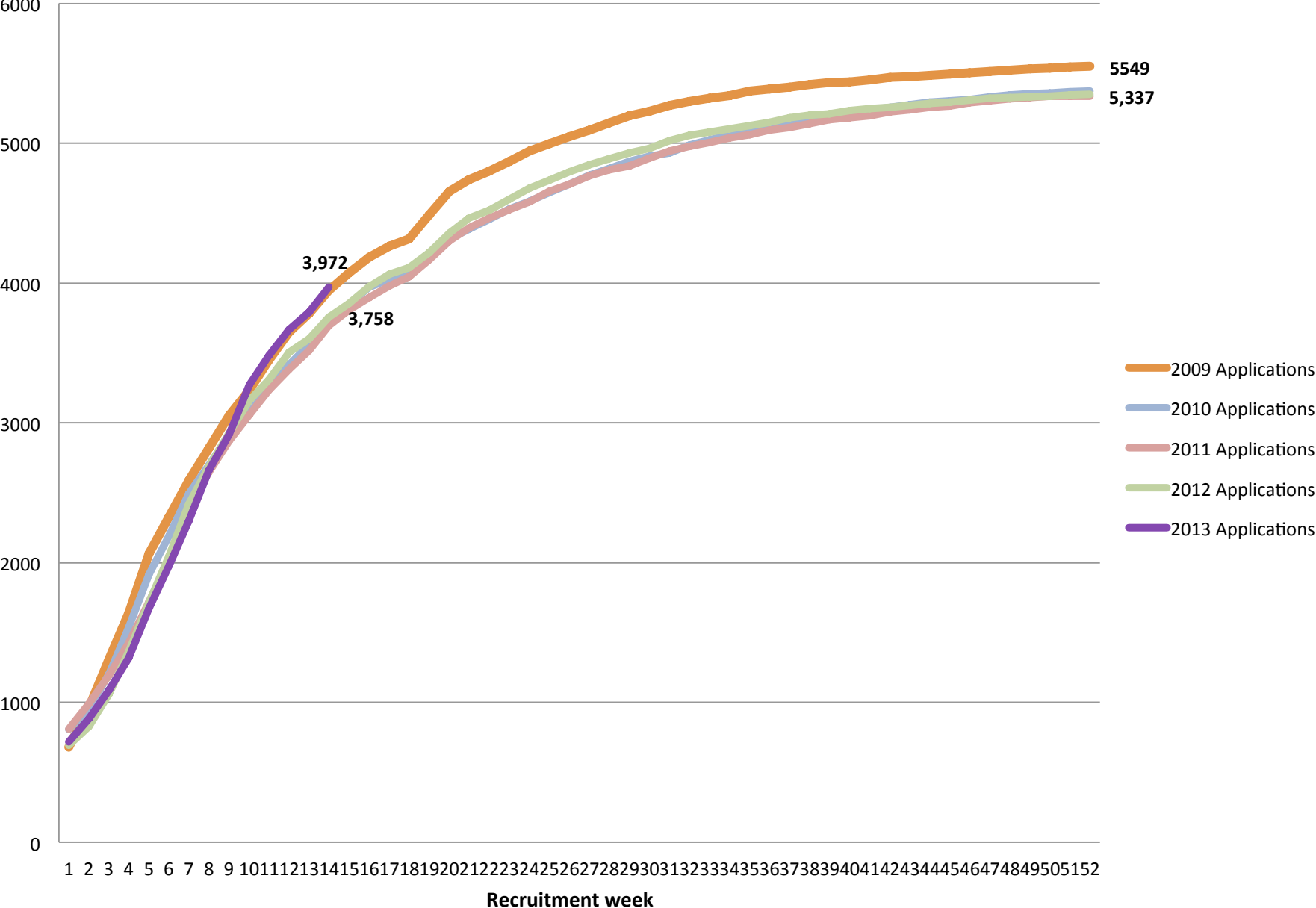Director, Global Policy Research Institute
Purdue University
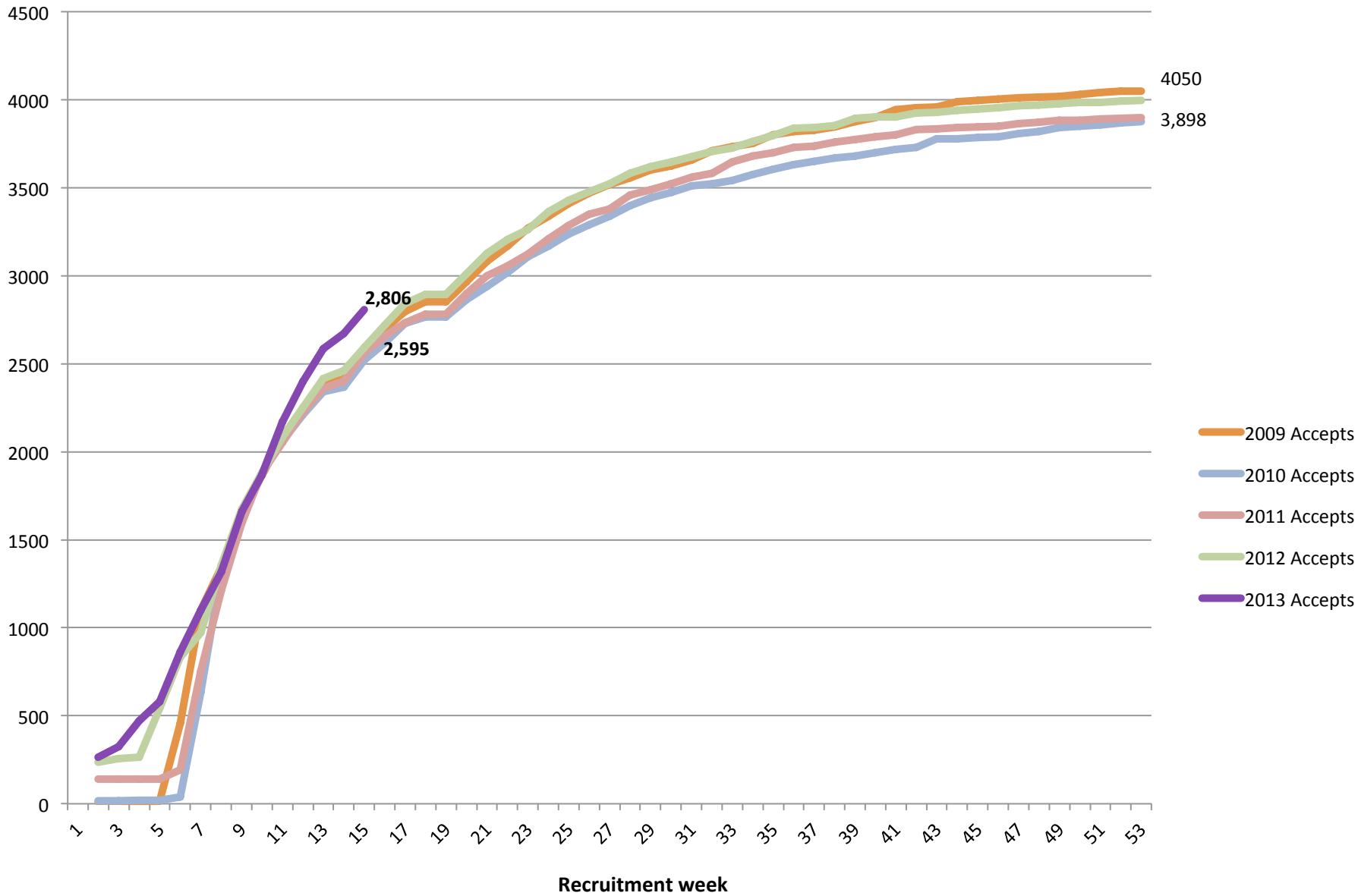Former Director, National Science Foundation

Michigan Tech
Create the Future

Midyear Commencement Statistics

➢ Undergraduate   346

➢ Graduate   134

    24 - PhD

    110 - Masters

Michigan Tech
— Create the Future

Total Applications

- 2009 Applications
- 2010 Applications
- 2011 Applications
- 2012 Applications
- 2013 Applications

5549

5,337

3,972

3,758

Recruitment week

Accepted Applications

Chart showing "Accepted Applications" with Recruitment week on the x-axis (1 to 53) and accepted applications count on the y-axis (0 to 4500).

Legend:
- 2009 Accepts
- 2010 Accepts
- 2011 Accepts
- 2012 Accepts
- 2013 Accepts

Data labels: 4050, 3,898, 2,806, 2,595

Enrollment Deposits

Legend:
- 2009 Deposits
- 2010 Deposits
- 2011 Deposits
- 2012 Deposits
- 2013 Deposits

Annotations: 1,427; 1,333; 215

X-axis: Recruitment week

Domestic Minority
Accepted Applications

2009	
2010	
2011	
2012	
2013	

Recruitment week
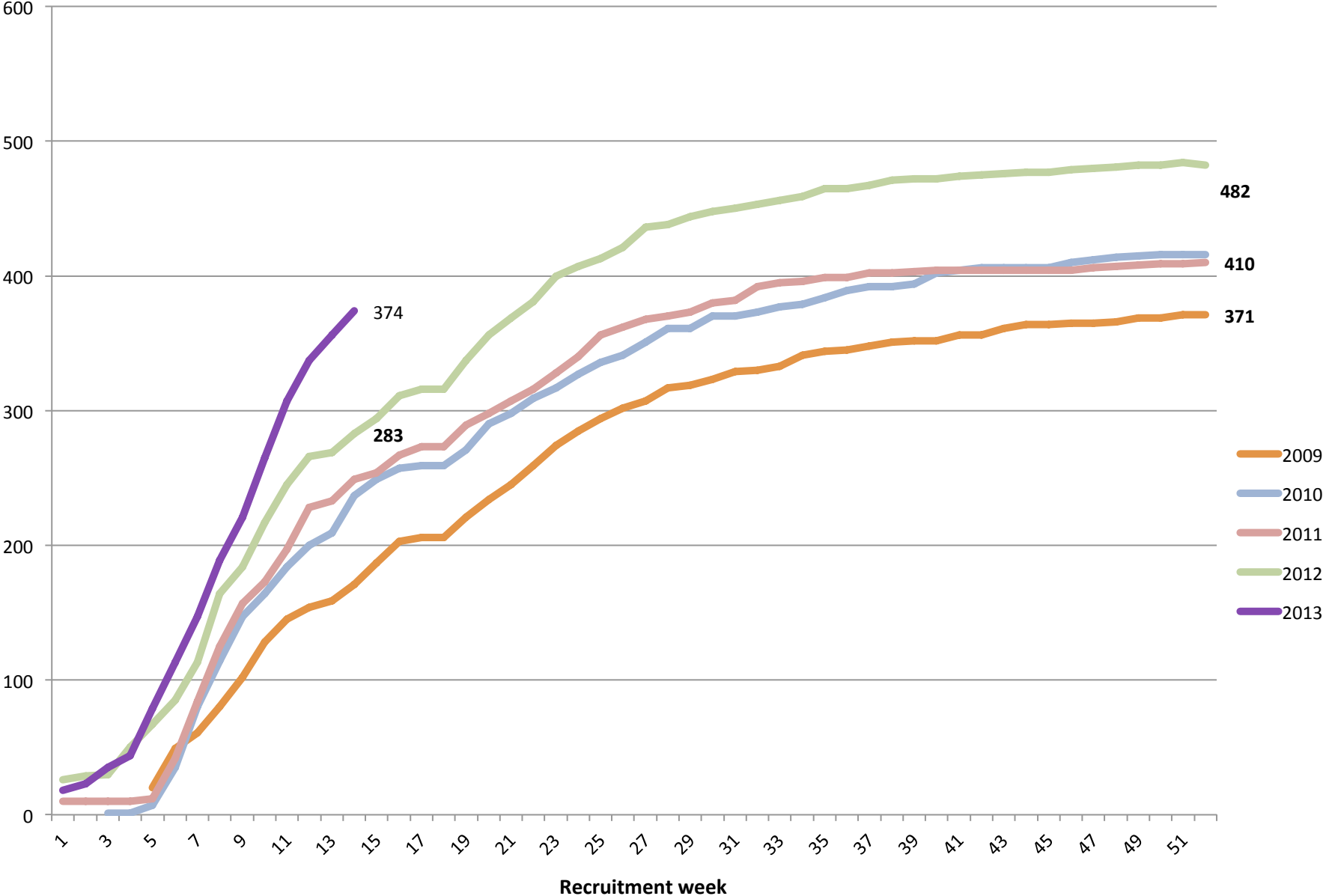
These are the SMART CRAZY friends you've been looking for your whole life.

XX♀ Xxtraordinary Women of Michigan Tech

MICHIGAN TECHNOLOGICAL UNIVERSITY

1885

CRAZY SMART

· HOUGHTON, MICHIGAN ·

Sure, there are plenty of xy chromosome pairs on campus, but don't underestimate the more than 1,700 women who come to Michigan Tech and love everything about it. They're crazy smart (and really nice). And they might just be the best friends of your life!

XXo

Xxtraordinary Women
of Michigan Tech

"
My best friend is always up for an adventure. We've explored the world together—hiking the Pyrenees mountains, sampling waffles in Belgium, rockclimbing in Moab, and riding horses through the woods of Northern Michigan. But most of all, Sheridan is my best friend because she's funny, brilliant, kind, talented, and an extraordinary Michigan Tech woman! "

—Jessica Daignault, fifth-year environmental engineering major

We ARE Husky Soccer.

20 games in the 2012 season, 15 wins, 2 ties, a heck of a lot of road trips. Game faces on. We are proud. We are varsity athletes. #WeAreHuskies

Riding a Zamboni in a crown?

Only at Michigan Tech! That's what happens when you're the Winter Carnival Queen. "We go to the coolest school ever! Tech has brains and innovation beyond belief, a down-to-earth community, and—given the opportunity—we kick butt at anything we set our minds on accomplishing."

—Lydia Patch, 2011 Winter Carnival Queen, 2012 graduate, Biological Sciences

facebook.com/WomenofMichiganTech

Female Accepted Applications

Legend:
- 2009
- 2010
- 2011
- 2012
- 2013

Data labels: 1,156 | 1,097 | 874 | 797

X-axis: Recruitment week (1 to 51)
Y-axis: 0 to 1400

Ten year female admit history as of Dec. 1 each year

Year	Total Accepts	Percent of all admits which are female
2004	417	21%
2005	543	22%
2006	567	25%
2007	623	25%
2008	787	28%
2009	710	28%
2010	740	29%
2011	714	28%
2012	794	31%
2013	874	31%

COE Female
Accepted Applications

Line chart showing cumulative accepted applications by recruitment week for years 2009–2013.

Legend:
- 2009 Accepts
- 2010 Accepts
- 2011 Accepts
- 2012 Accepts
- 2013 Accepts

End-of-series labels: 540, 505, 483, 456, 421

X-axis: Recruitment week (1 to 53)
Y-axis: 0 to 600
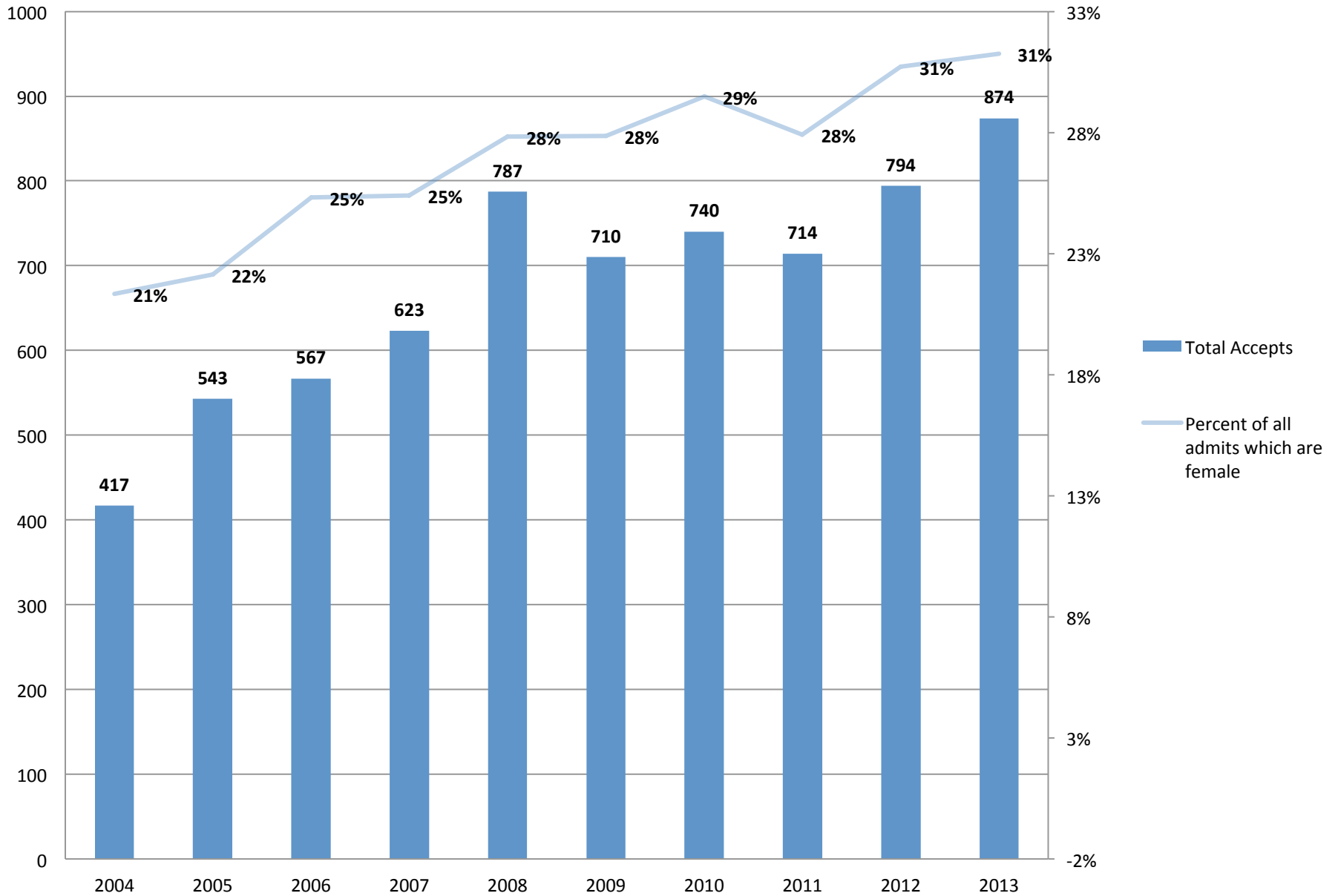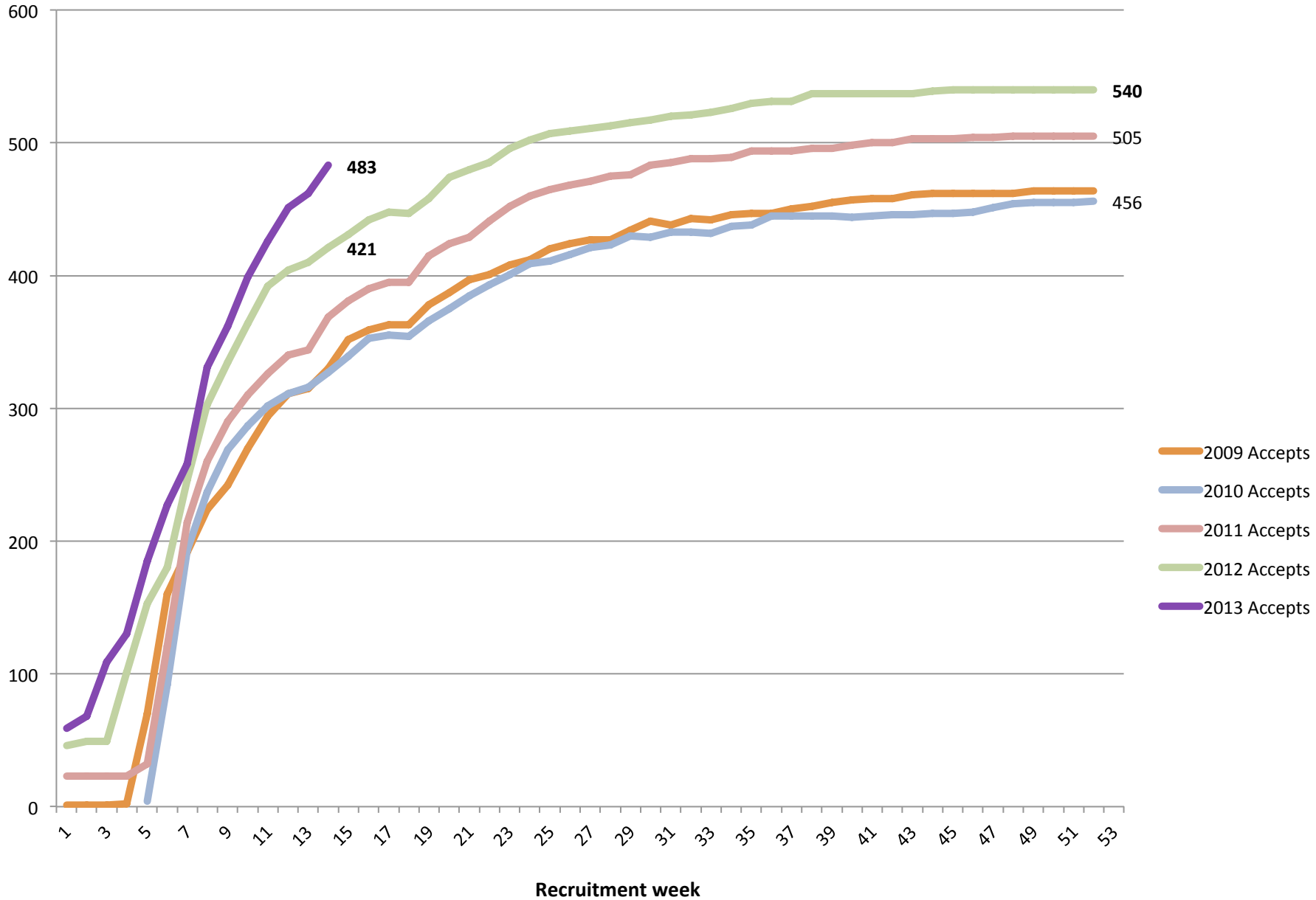
Ten year COE female admit history as of Dec 1 each year

Year	Total Accepts	Percent of all admits which are female
2004	230	16%
2005	244	16%
2006	268	19%
2007	284	18%
2008	379	22%
2009	332	20%
2010	327	20%
2011	369	21%
2012	419	24%
2013	483	26%

UG COE female total

Year	College of Engineering Undergraduate Females	Percent female
2005	505	15.4%
2006	519	16.3%
2007	526	16.2%
2008	551	16.5%
2009	595	17.6%
2010	586	18.0%
2011	640	19.2%
2012	674	20.0%
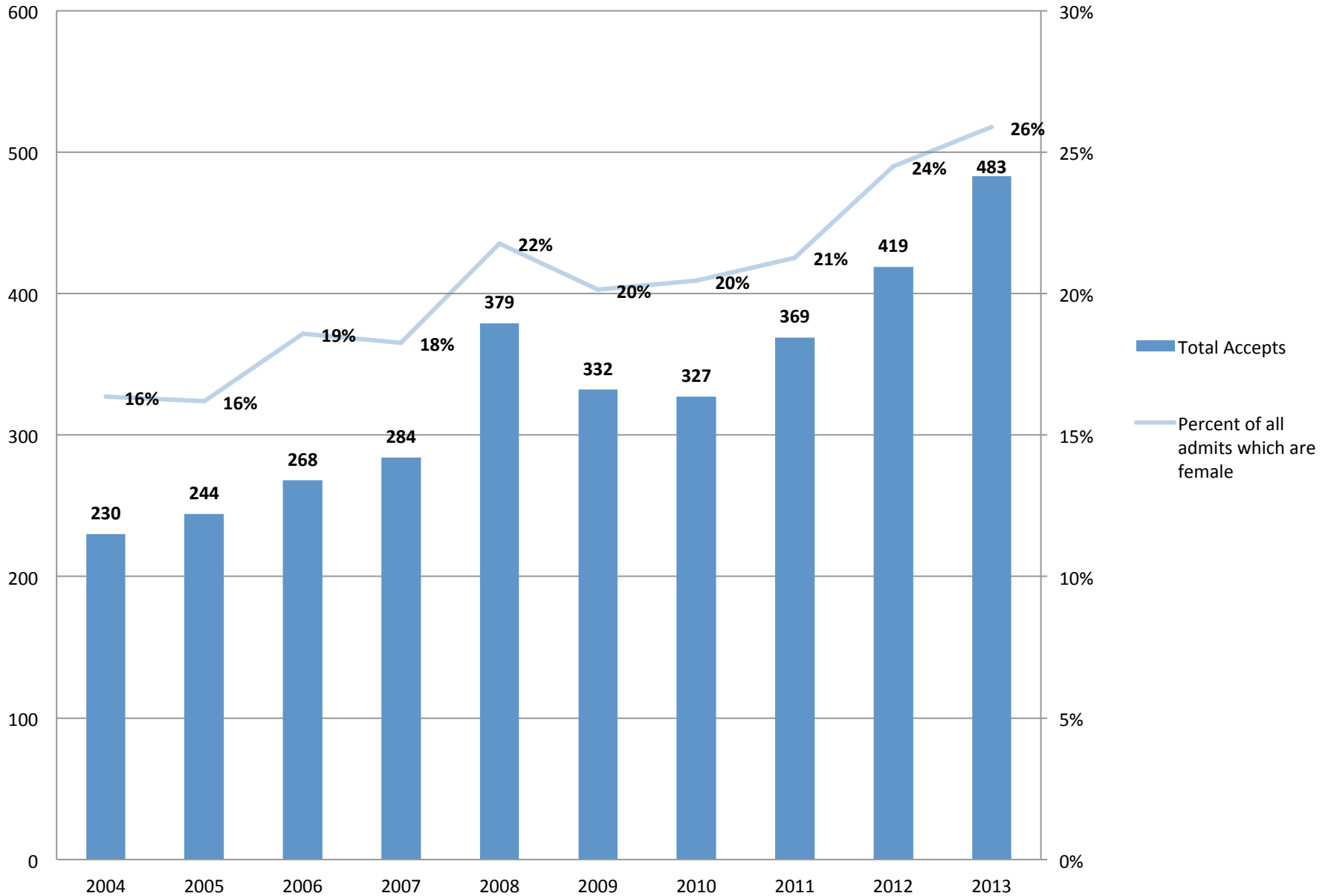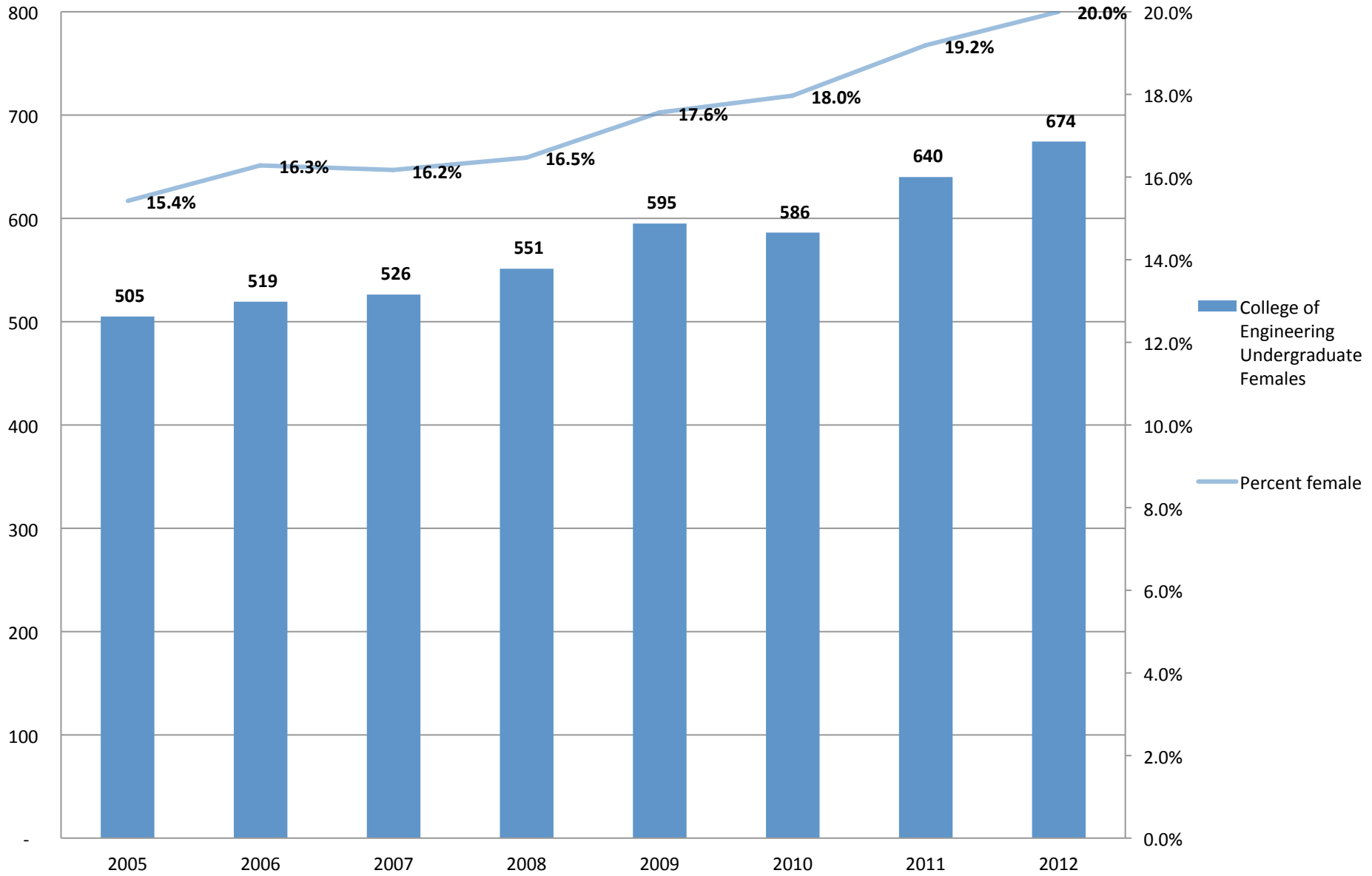
LEAN

Continuous Improvement using Lean Principles

Lean Facilitators and Implementation Leaders Complete Training in November

Lean Training Funded by Federal Mediation and Conciliation Services Grant

- $55,000 Awarded
  - Lean Consultants Provided Training
    - Lean Facilitators and Implementation Leaders Trained
    - Five Campus-wide Sessions Occurred
  - Lean Books and Resources Purchased

Use Lean culture building to enhance labor-management relationships and communication.

23 Lean Facilitators – Trained to facilitate Kaizen Improvement Events for any campus department or area interested in making improvements.

- Rick Berkey, Institute for Interdisciplinary Studies
- Ernie Beutler, Dining Services
- Catherine Burns, Human Resources
- Derrick Butkovich, Facilities Management
- Theresa Coleman-Kaiser, Vice President for Administration Office
- Wendy Davis, Auxiliary Services
- Laura Givens, Career Services
- Laura Harry, Memorial Union
- Bob Hiltunen, Auxiliary Services
- Shellie Hubert, Enrollment Services
- Alane Issacson, Athletics and Recreation
- Amie Ledgerwood, Geology and Mining

- Gina LeMay, Sponsored Operations
- Tanya Maki, School of Business and Economics
- Rhonda McClellan, Facilities Management
- Margo O'Brien, Accounting Services
- Heidi Reid, Memorial Union
- Julie Ross, Civil and Environmental Eng.
- Megan Ross, Auxiliary Services
- Julie Seppala, Sponsored Programs Office
- Shane Sullivan, IT Services and Security
- Kathy Wardynski, Dining Services
- Rachel Wussow, Student Activities

10 Lean Implementation Leaders – Trained in Lean concepts aimed at building a Lean practice into the day to day work for an area/department.

- Karla Aho, Office of Development
- Julie Blair, J. Robert Van Pelt Library
- Theresa Coleman-Kaiser, Vice President for Administration Office
- Wendy Davis, Auxiliary Services
- Bob Hiltunen, Auxiliary Services
- Wendy Jones, School of Forestry & Environmental Resources
- Jarrod Karau, Administrative Information Systems
- Tammy LaBissoniere, Sponsored Programs Office
- Gregg Richards, Facilities Management
- Cayce Will, IT Services and Security

Get Started

- Hold a Kaizen Improvement Event
- Tailored Lean Workshops and Trainings

Wendy Davis,

Manager of Process

Improvement

wmdavis@mtu.edu

7~3180

INTERNET SECURITY

❖ 1.2M internet attacks per day

❖ Average of 40 virus infections per day

❖ 5-10 phishing attempts per week

Thanks For All You Do!

QUESTIONS