



**Michigan  
Technological  
University**

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**Recommendation for  
Department of Applied Computing**

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College of Computing**

**UNIVERSITY SENATE  
FEBRUARY 5, 2020**

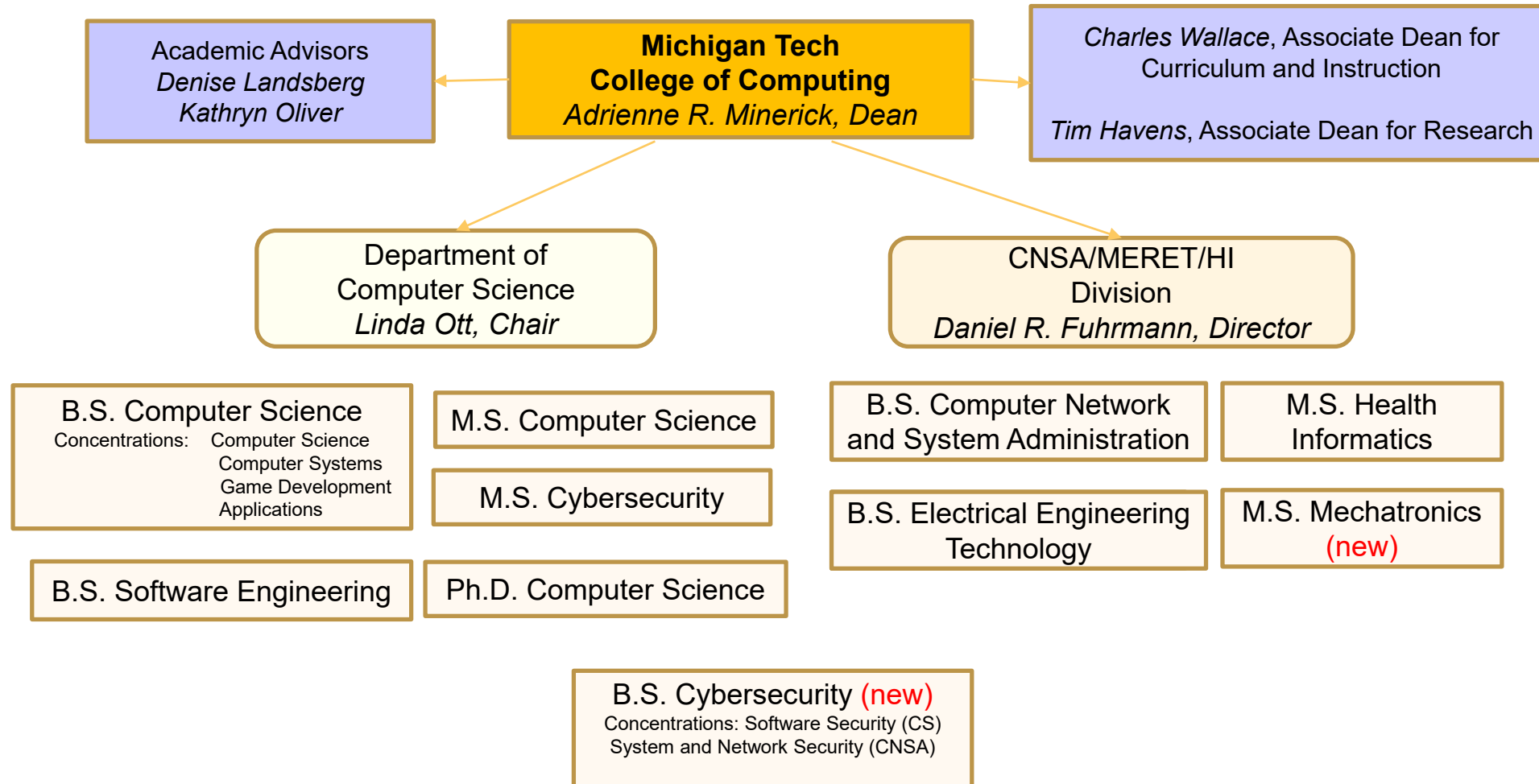
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## Brief History

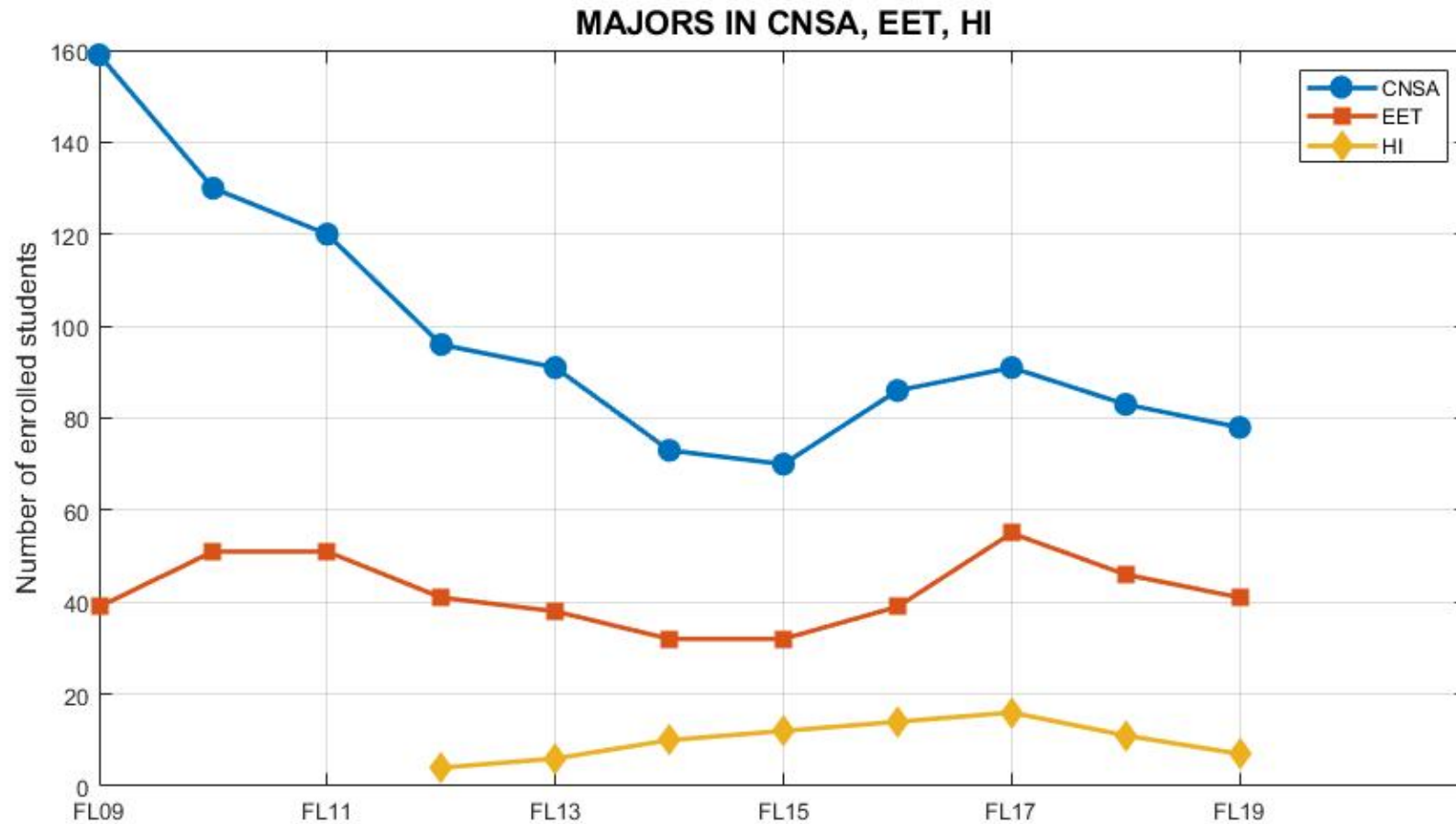
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- **April 2019.** Data Revolution and Sensing Task Force recommends formation of College of Computing, bringing together faculty from CS, EET, CNSA, and HI programs, with a School-like structure.
- **May 2019.** Department of Computer Science makes a strong case for remaining intact as an academic department.
- **July 2019.** College of Computing launches with Department of Computer Science and CNSA/MERET/HI Division.

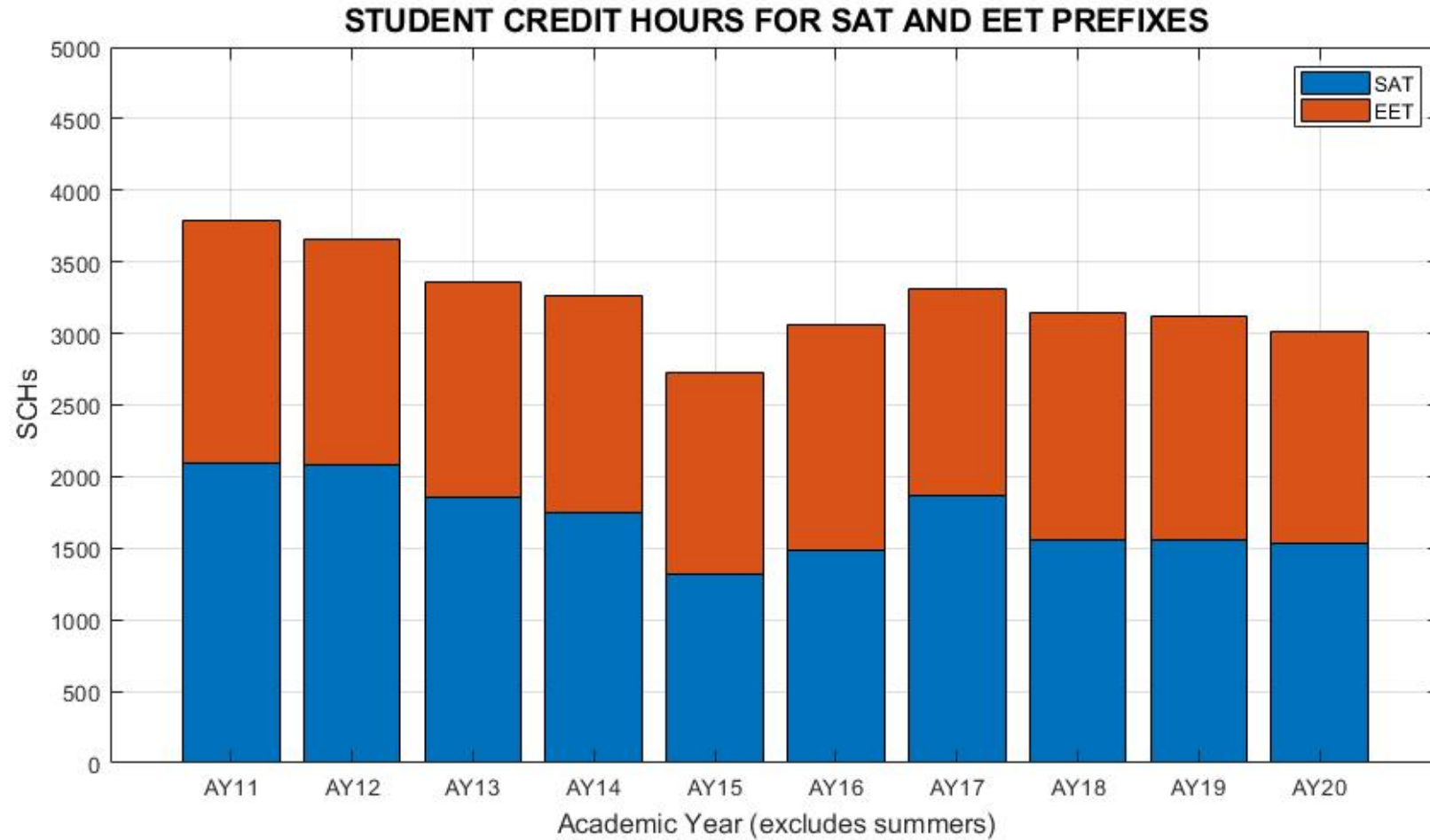
# Current CC Organizational Structure



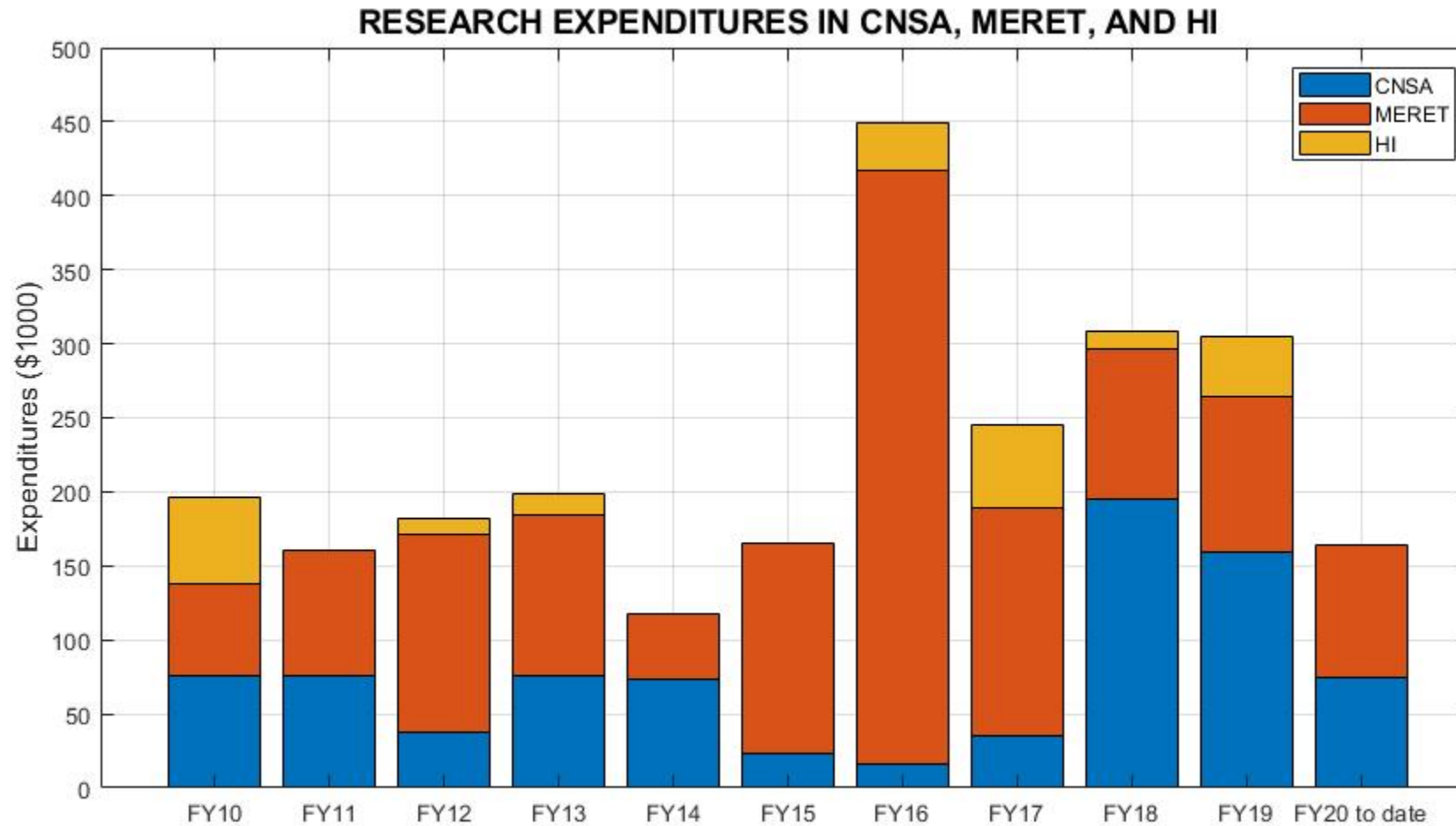
# Data on Enrolled Students



# Data on Student Credit Hours



# Data on Research Expenditures



# About the Name - 1

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University Marketing and Communications has done an analysis of academic units and programs that include the term “Applied Computing” (we can make this available).

There are very few academic *units* that include this term (we found three academic units and one industry-funded research institute.) There is no “Department of Applied Computing.”

There are several (~12 in U.S.) academic *programs* in Applied Computing.

- Common denominator is what we would call Computer Network and System Administration.
- Some have a business focus
- Some are online/continuing education programs
- Some are what we would call “CS+X”
- None include mechatronics or health informatics

## About the Name - 2

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### **UMC Conclusion:**

The term “Applied Computing” is simple, concise, straightforward, and therefore *marketable*.

It makes strategic sense to align Michigan Tech with industry standard terminology and rely on the programs themselves to provide distinction.

Future marketing efforts will target program names, not unit names.

### **JEH Conclusion:**

The name is modern, and will attract new students to Michigan Tech, even those who may eventually end up in different computing or engineering programs. We aim to “grow the pie.”



## Relationship to Other Units

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Academic programs in Computer Network and System Administration, Cybersecurity, and Health Informatics are distinct, and complementary to programs in ECE and CS.

As the College of Computing matures, the program currently known as EET is transitioning to focus more on industrial control and automation – an area in which “applied computing” can bring together CS, CNSA, ME, MET, EE, EET, CpE, CLS, and other fields. A proposal for a degree BS in Mechatronics is forthcoming.

## What Will Be New?

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- Continued migration of MERET group toward industrial control and automation
- Growth in cybersecurity area
- Growth in health informatics area
- Growth in externally sponsored research
- Internal collaboration/cooperation around the theme of Industry 4.0
- Emerging opportunities for “convergence programs” to develop focus on the applications of computing for industry and society across campus



ARTIFICIAL INTELLIGENCE



BIG DATA



ADDITIVE MANUFACTURING AND  
ADVANCED MATERIALS



CLOUD COMPUTING



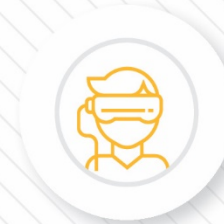
INDUSTRIAL INTERNET  
OF THINGS



CYBERSECURITY



ROBOTICS



MODELING, SIMULATION,  
VISUALIZATION AND IMMERSION

# WHAT IS INDUSTRY 4.0?

The convergence of digital and physical technologies disrupting the manufacturing industry.

Slide courtesy of Automation Alley

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**Questions?**