UPDATE ON THE FUTURE OF COMPUTING AT MICHIGAN TECH

APRIL 08, 2019
STARTING WITH A LITTLE HISTORY....
2012: COMPUTING AND INFORMATION SCIENCES AND ENGINEERING AT MICHIGAN TECH

MEMBERS:

• Chaoli Wang
• Guy Hembroff
• Jean Mayo
• Leonard Bohman
• Saeid Nooshabadi
• Xinli Wang

CHARGE:

• Examine the organization of Michigan Tech’s activities within the nexus of electrical and computer technologies
2012 COMPUTING AND INFORMATION SCIENCES AND ENGINEERING AT MICHIGAN TECH

RECOMMENDATIONS:

1. Closer cooperation among units
2. Facilitate a wider discussion
   • Among units directly involved
   • Among units across campus
4. Virtual School
5. New School
MEMBERS:

• Bo Chen
• Chaoli Wang
• Mark Rouleau
• Tim Havens
• Xinli Wang

CHARGE:

• Investigate research areas of current national & international interest & importance
• Investigate funding opportunities that can be best addressed by collaborative teams
### 2013: COMPUTING AND INFORMATION SCIENCES AND ENGINEERING RESEARCH (CISE) COMMITTEE

**Recommendations:**

1. **Establish a Formal Division of Computing**
2. **Have a Full-time Administrator**
   - Lead collaborative research
   - Oversee curriculum
   - Strengthen division internally and externally
3. **Pursue external funding for professorships & buildings**
4. **Add faculty in support of interdisciplinary computing**
5. **Increase use of Superior among non-traditional users**
6. **Support funding agency visits**
7. **Internal funding for computing-related research**
2017-2018: COMPUTING AND INFORMATION SCIENCES WORKING GROUP

MEMBERS:
• DAN FUHRMANN
• LAURA BROWN
• MARI BUCHE
• JIM FRENDEWY
• TIM HAVENS
• MYOUNGHOON JEON
• ROGER KIECKHAFER
• BEN ONG
• MIN SONG

CHARGE:
• DEVELOP RECOMMENDATIONS DESIGNED TO PROMOTE GROWTH (IN SIZE AND QUALITY) OF DEGREE PROGRAMS AND RESEARCH PORTFOLIO IN CIS (IN THE BROADEST SENSE)
2017-2018: COMPUTING AND INFORMATION SCIENCES WORKING GROUP

RECOMMENDATIONS:

1. Form a new Unit with a Dean
2. Determine structure of unit
3. Collaborate across units
4. Publicize new unit
5. Attract and invest resources

6. Charge the new unit to take responsibility for increasing the level of computer literacy university-wide.
7. Continue to move forward during 2018-2019
Everybody loves progress but nobody likes change.
WHY A COLLEGE OF COMPUTING?

1. **RESPOND TO DISRUPTIVE FORCES IN TECHNOLOGY, INDUSTRY AND SOCIETY (INDUSTRY 4.0); BETTER PREPARE STUDENTS FOR THE FUTURE AND ENABLE GROWTH AND SUCCESS FOR ALL OF MICHIGAN TECH.**

2. **UNDERSERVED MARKET OF STUDENTS WITH INTERESTS IN COMPUTING, AND COMPUTER SCIENCE.**

3. **CONSOLIDATE EXISTING PROGRAMS AND BRING MORE VISIBILITY TO COMPUTING EDUCATION AND RESEARCH AT MICHIGAN TECH.**


*(FROM CIS WORKING GROUP FINAL REPORT, MAY 2018)*
COMPUTING IS CONNECTED

TECHNOLOGIES OF THE FUTURE ARE CONNECTED TO SEVERAL DOMAINS

- Electronics
- Automotive
- Infrastructure
- Transportation
- Finance
- Medicine
- Biology
- Chemistry
- Physics
- Social sciences

COMPUTING TOUCHES EVERYTHING

AUTONOMOUS VEHICLES

- Is it a car or is it a computer? Which is the commodity – the drive train or the software?

INTERNET OF THINGS

- All of our devices will be networked, sensed, and controlled using distributed digital technology

CYBERSECURITY

- Connected nature of technology raises a whole host of security issues.
### DEGREE PROGRAMS
- Computer Science (CS)
- Software Engineering (SE)
- Computer Network & System Administration (CSNA)
- Health Informatics (HI)
- Mechatronics, Electrical, and Robotics Engineering Technology (MERET)*

### RESEARCH
- Institute of Computing & Cybersystems (ICC)
- Researchers
- Computer Systems
- Cybersecurity
- Cyber-Physical Systems
- Human Factors
- Data Science
- Merit, Comparative, and International Collaborators
- Computational Science & Engineering
- Convergence Computing
- Service
- General Education Learning Center
- High-Performance Computing Support

*EET will transition to MERET (Mechatronics, Electrical, and Robotics Engineering Technology)
THANK YOU