



To: Andrew Storer, Provost and Senior Vice President for Academic Affairs
CC: Bill Roberts, Vice President for Advancement
From: Dennis Livesay, Dave House Dean of Computing
Date: May 14, 2024
Re: Dave House Dean of Computing - Annual Report

My Priorities and the Role of Dave House Funding: My priorities remain unchanged from previous years, specifically they are: (i.) student experience; (ii.) ubiquity of computing, both as a standalone discipline and as an enabling technology in other spaces; (iii.) broadening participation in computing; (iv.) supporting the industry of the state; and (v.) growth, which can be unpacked in terms of enrollment, research, DEI, and industry engagement. Revenues from the Dave House Dean of Computing endowed position are used to support all five, often serving as a bridge between immediate needs and central funding. That is, Dave House funds are used to meet immediate strategic needs, which gives the university time to incorporate those costs into the university budget. We have used this approach multiple times, most recently to hire a staff position that was later transitioned to central funding, freeing up the Dave House funds to be used elsewhere after. This year, we even planned to do the same with faculty, hiring two within the search for a single position, but that was ultimately unsuccessful.

Reflections on Our Five Year Anniversary: This fall will mark the College of Computing's five year anniversary. We're in a strange and wonderful transitory place. We're not exactly new, yet we're still young. We're past the sometimes difficult debates surrounding formation of the college, but there is still a feeling of novelty and a surprising cadence of things we haven't done before. Nevertheless, routine is starting to replace start-up energy. That is mostly good, but we cannot lose our urgency. Enrollment and budget crises follow complacency in higher ed. Fortunately, the college continues to be in a very strong position, and I'm proud of the work we do to maintain that. For example, the FAFSA debacle and accompanying delays in financial aid packets are major concerns for everyone. Given multiple years of strong enrollment growth, we could be forgiven for assuming that we'll be fine, but we're doing quite the opposite. Specifically, we are quickly rolling out a number of new efforts to drive yield, reinforcing the message that *enrollment is of foremost importance and is everyone's responsibility*.

Driven by the rapid evolution of computing and information sciences, especially AI, there are substantial meta-forces that amplify our need to continue to be nimble and embrace change. Our curricula, research, and organizational structures must continually align to contemporary needs. Put otherwise, I hope and expect *the College of Computing at its ten-year anniversary to be substantively different from the one today*. The main thrust of this is currently focused on data science and AI. Future efforts will likely focus on the centrality of computing and entrepreneurship, which complicates implementation because they cross unit and discipline boundaries. Our collaborative efforts with other colleges are creating new interdisciplinary opportunities for our students and faculty, but they are hard...interdisciplinarity always is. The Center for Convergence and Innovation will be a quantum leap forward, but is also a tangible sign

that collaboration and convergence are valued at Michigan Tech. In the meantime, we keep working to help everyone thrive in the *digital present*.¹

One constant that I expect is growth. We are growing in nearly every dimension, which underscores that the “virtuous cycle” is working. That is, enrollment growth drives faculty growth, which in turn increases research capacity, ...leading to gains in rankings and prestige. Coming full circle, those gains make it easier to recruit new students and faculty. And so on. Throughout the cycle, impact multipliers can occur. For example, our research growth is significantly outpacing enrollment. This frames how I view my role as dean and the connectedness of our efforts. Teaching is not independent of creating new knowledge; recruitment is not independent of external funding. Rather, they synchronize within a well-run college that allows us “to advance the transformational promise of computing in the service of society through excellence in teaching, research, and outreach” (our mission statement).

Major Accomplishments in the Past Year:

- Third consecutive year with greater than 10% enrollment growth | This year alone we increased total computing enrollment by 15.7% (UG = 8.4% and GR = 47.8%)
- Second consecutive year setting a record for research awards and (at least) a third consecutive year setting a record for research expenditures (annual research expenditures increase = 84%)
- Michigan Tech crossed into the top-100 for *computer and information science* research expenditures, climbing 26 spots last year alone, from 115th to 89th (source: NSF-HERD survey) | We were ranked 150th when the college was formed, meaning we have climbed a total of 61 spots
- Designated as a Center of Academic Excellence in Cyber Defense (CAE-CD) education and as a Center of Academic Excellence in (cybersecurity) Research (CAE-R) – we are the only institution in Michigan with the more prestigious CAE-R designation
- Launched the BS in Data Science, MS in Applied Computer Science, and two health informatics graduate certificates
- Our proposal for a new online graduate certificate in the Foundations of Cybersecurity has been approved, which we will extend to a full online cybersecurity MS degree in the upcoming year
- Had four programs successfully go through ABET review; two without findings and two more with helpful suggestions on how to improve our continuous improvement process
- Deepened our Forward Together discussions, which started with an ideation retreat, followed by myriad small and large group discussions | Ultimately, three main priorities were identified: (i.) improve faculty hiring, efficiency, and retention; (ii.) curricular updates; and (iii.) developing a plan to guide organizational growth | This year’s retreat will highlight our progress, while starting to address additional identified needs
- Started formative discussions regarding creation of a Department of Data Science within the college
- Continued to develop and refine our enrollment projections, allowing us to make data informed decisions regarding investments and growth opportunities
- Made good progress in creating and filling several important staff positions

Investment Priorities in the Upcoming Year: The College of Computing is driving university enrollment growth, having increased 54% since its creation in 2019 and expectations to exceed 2,000 by 2035. As such, the university has made building a new home for the college its largest new construction priority.

¹ The digital future is often predicted as some future point where computing and AI are ubiquitous in all aspects of industry and society. It is nearly equally couched as some abstract far away point in time, or perhaps it’s just around the corner. I argue it has already happened, and so use the term digital present to emphasize that the digital future is now.

Unfortunately, however, the timeframe for the Center for Convergence and Innovation remains unknown and the college is desperate for space now. In fact, limited research and office space already threatens to slow our growth, which would have dire consequences for the university and its finances. As such, the Provost and I are exploring multiple options to renovate and repurpose university spaces for the College of Computing, providing us some near-term breathing room.

This includes creating a mini-suite for each of our two departments. Having a “front door” for the departments is critical as it provides a focal point that is welcoming to faculty, staff, and students. To the best of my knowledge, ours are the only departments on campus without a department office, which must be corrected. In particular, department suites will promote access to student support and advising, thus driving retention gains. (Note that CS, which is the third largest department and second largest major at MTU, used to have a department office, but it was converted into the college office upon our creation.)

We also have plans to refurbish several teaching and research labs, including creation of a human-robot interaction laboratory. This lab is planned to be strategically located along the campus tour route for prospective students to showcase MTU students working in a high-tech environment, including with a Boston Dynamics Spot (robot dog). Dave House funds will be used, in part, to pay for these renovations and conversions.