

HOUSE PROFESSORSHIP REPORT FY25

*Daniel R. Fuhrmann, Dave House Professor of Computing
Chair, Department of Applied Computing*

The activity and expenses for the Dave House Professorship in Computing were used in FY25 for two separate purposes: 1) to support the adjunct teaching activity in the Department of Applied Computing, a continuation of past practices, and 2) to support my relatively new research program in smart meter communication for electrical utility distribution systems, a project also supported by the Power Systems Engineering Research Center (PSERC) as part of Michigan Tech's affiliation with that organization.

Since the founding of the Department of Applied Computing, funds from the House Professorship were used primarily for adjunct faculty compensation, supporting the growth of the department in number of majors (+188%) and number of student credit hours taught (+139%). Over the past two years, I have urged Dean Livesay and Provost Strorer to shift responsibility for additional faculty compensation away from the endowed professorship and toward the College of Computing and the Provost's Office.. Implementation of this plan began last year, and I am pleased to report that it has continued in FY25. While there was some coverage for additional faculty compensation from House funds in FY25, it was only a fraction of what it has been in years past.

New this year is the application of professorship funds to augment my research in smart meter communication for electrical utility distribution systems. Michigan Tech is a member of the Power Systems Engineering Research Center (PSERC), an industry-university consortium focused on applied research in areas of interest of electrical utilities. Membership fees from industry members are used to support competitive grants to university members, and I hold one of these awards in partnership with collaborators at the University of Wisconsin-Madison and Georgia Tech. Our particular project focuses on leveraging the untapped potential of residential smart meters and associated communication networks to support grid visibility and control.

PSERC grants are intended for PhD student support, but unfortunately the level of support is not sufficient to fully support a PhD student at Michigan Tech, especially if we consider summer support and incidental travel expenses. I have an ECE PhD student, Pedro Aquino de Alcantara, who has been working on this grant from the beginning of the period of performance in August 2023. Pedro is doing very well: he completed his PhD oral qualifying examination in November 2024, and this summer he is on an internship with Hubbell Inc. in St. Louis, Missouri, one of our PSERC industry partners. Funds from the House Professorship were used to support Pedro for on-campus work in Summer 2024, his Spring 2025 tuition, travel to the Conference on Information Science and Systems at Johns Hopkins University in March 2025, and travel to the PSERC Industrial Advisory Board meeting at Washington State University in Pullman, Washington, in May 2025. Professorship funds were also used to support my own travel to these same events.

There were minor incidental expenses drawn from House funds for promotional supplies and food for department events.

I am proud of the growth that we have experienced in the Department of Applied Computing over our first five years, supported in part by House funds to cover expenses for additional faculty teaching. I feel like I have turned a corner in my own research, and am grateful that I have the professorship funds to help in that area as well, as department chair obligations limit the amount of time and effort available for writing grant proposals. Looking forward, it is anticipated that the House Professorship will continue to serve this dual role in supporting department needs and my own research activity.