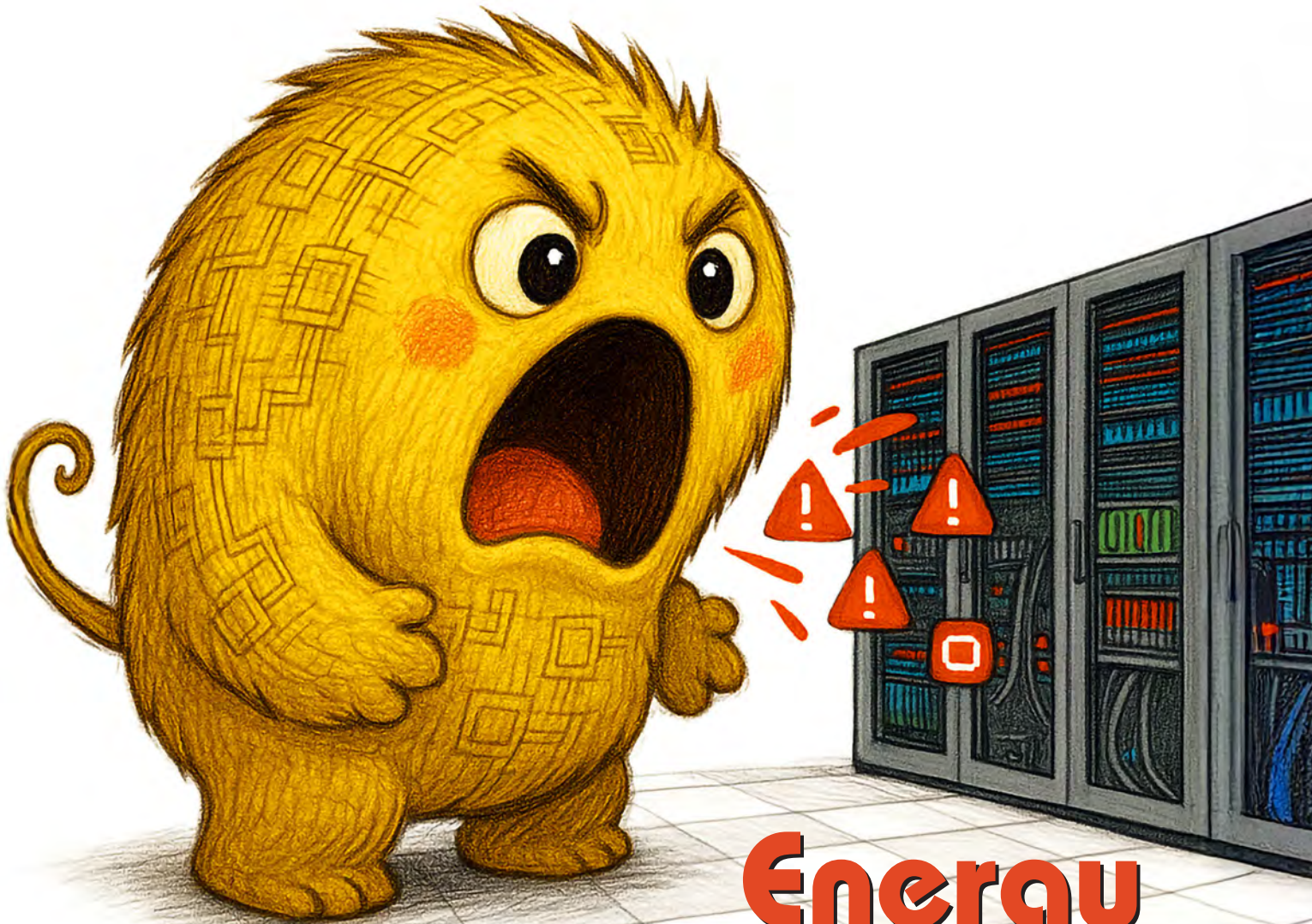


PRISM

WINTER 2025

CABLES CURRICULUM

COLLABO-GLEANING



Energy Monster

**Can AI's formidable
power appetite
be tamed?**

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AI, SOLVE THYSELF

To address AI's immense energy needs, researchers turn to...AI.

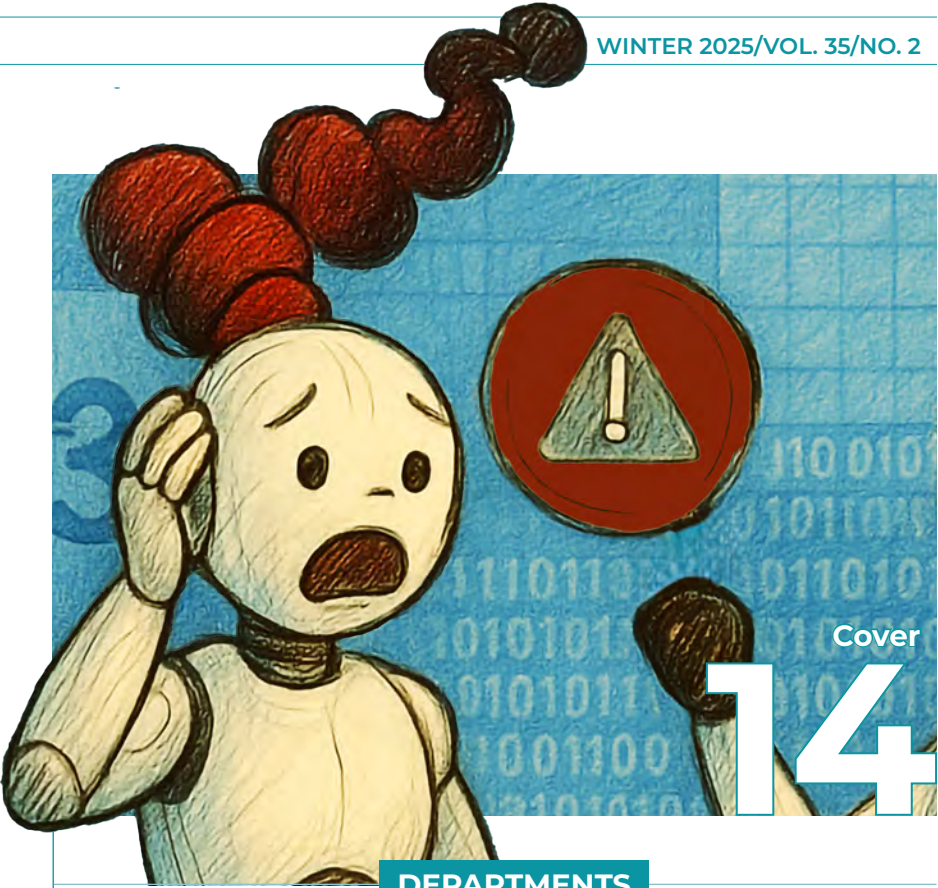
By Thomas K. Grose

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THE DEEP WEB

A new curriculum takes students below the surface of global connectivity.

By Tom Gibson, PE



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LIVE WIRE

ASEE's teaching award winner sparks student learning and success.

It's not every day a college professor emails students to say he'll miss the first few days of the semester. But in January, Brock LaMeres had a good excuse. A radiation-tolerant computer he developed, called RadPC, was being launched to the moon, and he was going to the Kennedy Space Center in Florida to watch.

When LaMeres eventually showed up to class at Montana State University, he looked like he "hadn't slept in a week," the electrical and computer engineering professor recalls. "If I stopped talking about it, the students asked about it. It was one of the coolest semesters of my career."

LaMeres created learning material based on that accomplishment, 15 years in the making, to demonstrate the real-world application of engineering concepts. His ingenuity and tenacity—exhibited in both his contributions to the field of engineering and "bordering on obsessive" teaching style—earned the professor ASEE's 2025 Outstanding Teaching Award.

That dogged spirit isn't lost on his students, one of whom remembers building a "magnificent, insanely fast" robot that ultimately ran "full throttle" into a wall. Sharing in his nomination letter that LaMeres had given him a B for effort and a \$10 gift card

for innovation, Montana State PhD student Hezekiah Austin noted, "It was the first time I had been rewarded for trying something that failed quite so spectacularly."

In his 19 years at Montana State, LaMeres has taught 11 different courses across 100 sections to more than 3,200 students.

In addition, he spearheaded the creation of the university's Montana Engineering Education Research Center, where he serves as director. The center's mission is to transform engineering education through interdisciplinary, empirical research. Since the center's founding in 2016, the number of MSU engineering faculty engaged in education research has grown from six to 30, and external funding has increased from \$800,000 to more than \$10 million.

In his letter of recommendation for the Outstanding Teaching Award, then-electrical and computer engineering department head Todd Kaiser praised LaMeres's creation of online computer engineering classes that provide flexibility for students as well as the winner's vast library of instructional YouTube videos. The professor's innovative efforts to "modernize" the computer engineering curriculum were made possible with grant funding that he won, which reaped unintentional benefits, Kaiser wrote: "These

grants produced knowledge on how to effectively teach computer engineering but had the side effect of completely replacing the lab equipment that our department used to teach [the discipline]."

LaMeres has published more than 100 peer-reviewed journal articles and papers in conference proceedings as well as five textbooks on digital logic circuits that have been adopted by other universities. Among the 14 teaching awards he has earned at MSU are seven Outstanding Instructor awards—including those won during his latest, unprecedented, six-year winning streak.

Under his mentorship, a record 44 students have also won competition-based awards, with prize money topping \$10,000.

LaMeres says his previous "real job" designing digital circuits for HP helps with credibility in the classroom. Understanding why digital circuits act the way they do can be challenging, so he not only overhauled the curriculum to include responsive e-learning content but also developed portable lab kits for students to build and test circuitry from anywhere. The result: "When they come to the real lab, they're much more prepared for—and engaged in—the complex stuff," he says.

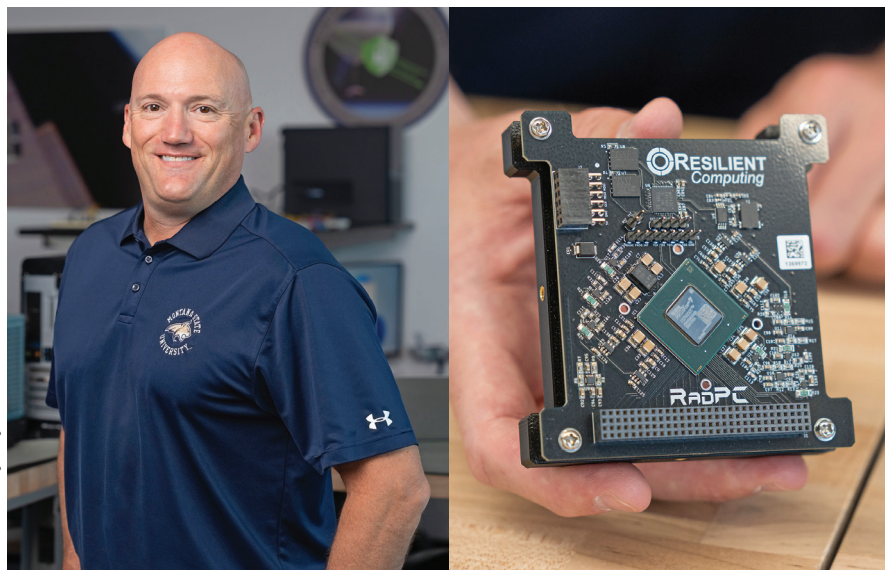
Student evaluations over the past year have described the "influential" lecturer as "approachable and relatable," "the best advocate you can have," and "entertaining."

To that last point, LaMeres admits to sprinkling in "stupid jokes" to keep students' attention. (Example: A neutron walks into a bar and says, "I'll take a beer. How much?" and the bartender says, "For you? No charge.")

Also lauded for getting more faculty involved with ASEE, the professor says that the purpose behind all of his work—whether with younger colleagues or students—is to impact the future of engineering.

Says LaMeres: "You need to make sure they can build a future society where everyone can thrive."

Robin L. Flanigan is a freelance journalist and author based in Rochester, New York.



Photos courtesy of Tyson Krinke