Fluctuating tariffs exacerbate US science funding woes

For new faculty and others ordering big-ticket items, the import taxes can be a gut punch.

Since the start of the second Trump administration, the US science community has been confronted with the axing of jobs, the slashing of federal funding, attacks on diversity, and increased visa restrictions. Tariffs are an added twist. On 2 April—which Trump referred to as Liberation Day—new tariffs on many countries went into effect. A roller coaster followed, as rates were raised, lowered, and paused. The threats and negotiations have sowed uncertainty in the science community and beyond about the cost of goods.

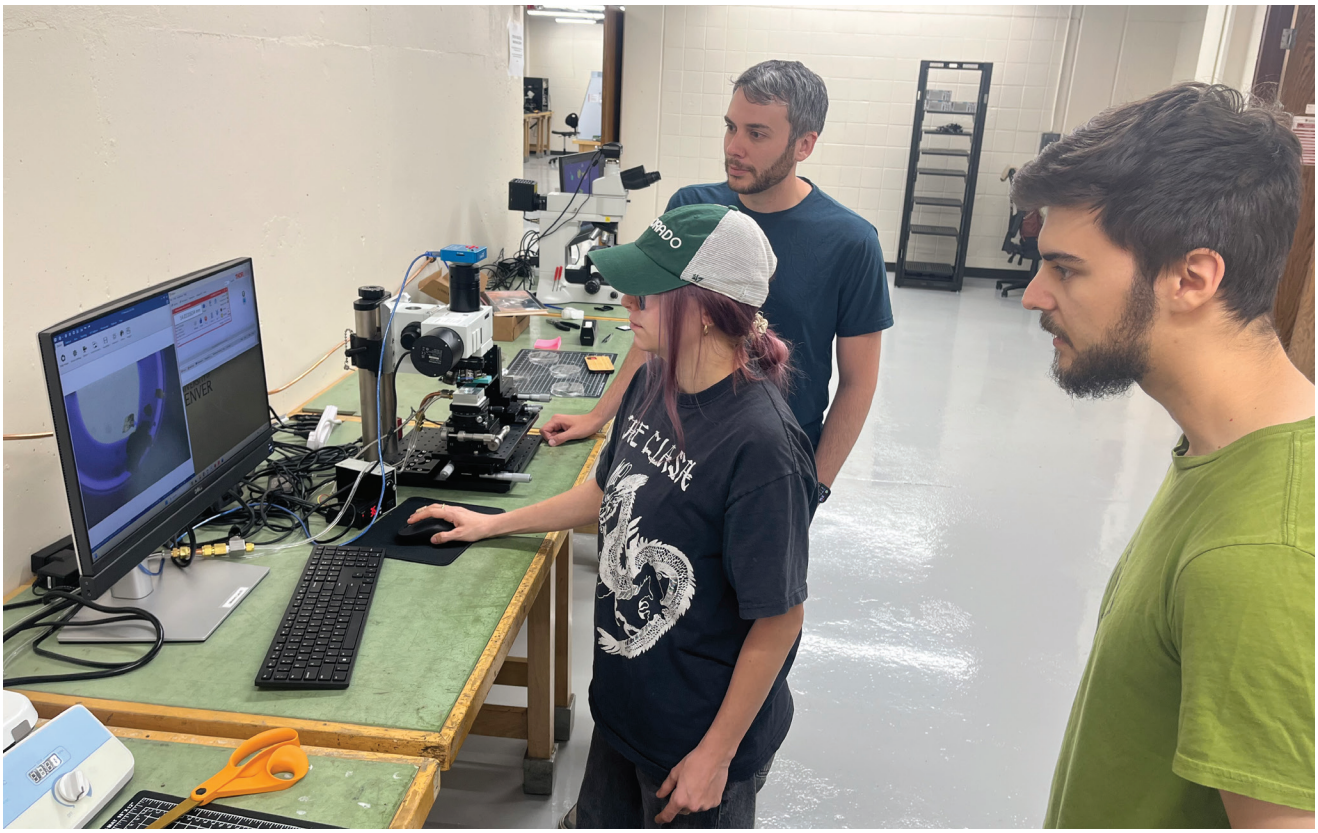
Tenure-track experimentalists who are establishing their labs are in a particular bind.

New faculty members receive startup funds, uniquely flexible money that they use for equipment, students and postdocs, conferences, and their own summer salaries. Startup funds in the more expensive areas—notably atomic, molecular, and optical physics, condensed-matter physics, and biophysics—can be as high as $5 million, although around $1.5 million is typical.

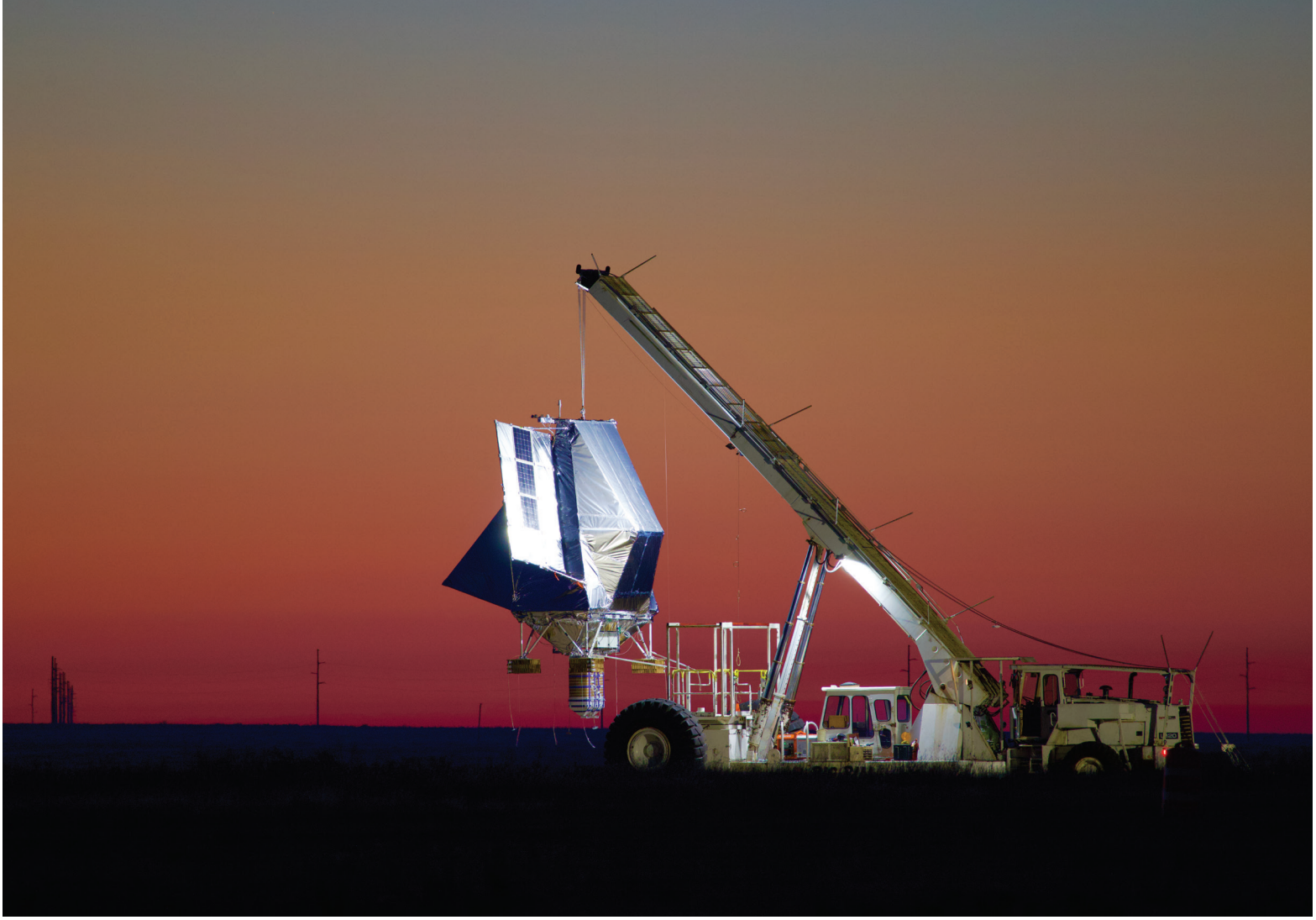
Tariffs were not yet a concern for tenure-track faculty who negotiated their job terms in the past few years. But today, as they attempt to establish themselves in their new positions, ponying up tens of thousands of dollars more for big-ticket items can be a hardship—or a dealbreaker.

Sticker shock

In early 2024, a tenure-track physicist at a midsize public university on the West Coast ordered laser equipment from China. It didn't arrive in the US until April 2025, at a time when the tariff rate exceeded 100%. The equipment was stuck in customs, accumulating storage fees, until the physicist could pay the nearly $130 000 import tax. An internal



DACEN WATERS (back) with two of his PhD students, Oliver Schwarm (right) and Zoe Rafter (at computer), in the lab they are setting up. Depending on the tariff rate when the $750 000 dilution refrigerator he ordered is ready for delivery, Waters could end up canceling the order or not having money to pay his graduate students. (Photo by Mark Siemens.)



THE PAYLOAD for a planned long-duration, high-altitude balloon mission to study cosmic star formation at terahertz frequencies was test-flown last year in New Mexico. Jeffrey Filippini, who leads the development of the cryogenic camera for the mission's upcoming Antarctic flight, was slapped with a $10 000 tariff for an infrared filter from the UK. (Photo by Joaquin Vieira, University of Illinois Urbana-Champaign.)

university loan to the physics department saved the day, says the department chair.

The loan means that the new hire can get on with their research, says the chair. But the department will have to scrimp until it repays the money. "We may not be able to invite prospective graduate students to visit," the chair says. "More of our symposia may have to be by video rather than hosting speakers in person. And when equipment breaks, we won't have discretionary funds to step in and help faculty members." (The department chair and others who requested anonymity felt their situations were precarious for visa reasons or wanted to avoid calling attention to themselves and their institutions.)

Yulia Maximenko joined the physics department at Colorado State University in 2023, planning to study 2D quantum materials at low temperatures. She was lucky that her most expensive instrument, a $550 000 scanning tunneling microscope from Germany, was delivered in late 2024, before the Trump administration began making changes to tariffs. But this spring, she balked when she saw that she would have to pay a few thousand dollars in tariffs on top of the more than $20 000 price tag for an optical microscope from Olympus, a company headquartered in Japan. Instead, she bought an older model for $8000 on eBay. "It's much cheaper, and there are no tariffs," she says.

Shopping on eBay "is a bit of a shot in the dark," says Maximenko. She relies on sellers' ratings and return policies. She recently bought an electron-beam evaporator for thin-film deposition and an ion pump, both used. "Sometimes I get nice equipment," she says. "And my students and I can fix things." Scrounging for used equipment stretches her money, she adds, "but it slows down research productivity."

Dacen Waters started his tenure-track position at the University of Denver last fall. He studies how electrons behave in 2D materials, work that could eventually feed into quantum computing technologies. Last October, he ordered a dilution refrigerator for about $750 000 from a Finnish company—one of three, all in Europe, where such instruments are available. He had been trying to figure out how to cover $75 000 at a 10% tariff rate. But when Trump threatened a 30% tariff in July, he was panicking. At that rate, he says, he'd have to cancel the order, which per the contract would mean forfeiting $200 000. At press time, the expected tariff had come down to 15%, which Waters says he can make work. "I just need to decide what I will give up to pay the tariffs," he says.

Exemptions for science?

"The tariffs have thrown a nasty curveball into everybody's life," says Walter

Silvesky, commercial managing director for the US arm of the German company PI (Physik Instrumente). "It's especially tough for those in the academic sector. Researchers have no mechanism for dealing with extra costs." In some cases, vendors refuse to prepare firm bids because of the uncertainties on their end due to tariffs and inflation. And university purchasing offices sometimes won't approve purchases without a fixed price.

PI, which specializes in micro- and nanopositioning components, is "trying to be fair" about tariffs, says Silvesky. The company may absorb the extra burden of tariffs when "a long-standing customer in the research community is at risk" of having to interrupt their work. But if the cost is too high or "circumstances don't permit," he says, "researchers have to jump through hoops to find money. It's crushing them from the standpoint of time."

Meanwhile, the US branch of PI has sought new international supply chains and domestic sources in order to pay lower tariffs or avoid them altogether. For example, to hold down prices, the company switched to buying some components, such as bolts and screws, motors, and power supplies, outside of China. "It's a balancing act between cost, availability, and performance," Silvesky says.

Many researchers are applying to the US government for tariff exemptions for scientific equipment. Jeffrey Filippini, a cosmologist at the University of Illinois Urbana-Champaign, says he spent "a couple of days preparing 50 pages of documentation" to claim a tariff exemption for $10 000 he forked over for an infrared filter from the UK. The filter is for an astrophysics instrument Filippini's team is building. The team plans to fly it on a balloon slated to launch next year from Antarctica. "The money wasn't in my grant budget," he says. "I had to come up with it out of the last of my startup funds." If he fails to recover the tariff, he adds, "that represents work I can't do, equipment I can't buy, a student I can't pay."

The West Coast department chair says they hope to get back the $130 000 they paid in tariffs by filing for an exemption. And Waters says that on the vendor's advice, he will apply for a tariff exemption for the dilution refrigerator he needs. But the scientists who are applying for tariff exemptions are at best cautiously optimistic: Few report having heard of anyone who has been successful.

Quantity	− 1 +
Subtotal	$10,179.00
Online discount	- $2,035.80
ZEISS Care 12 months	$1,000.00
Shipping	FREE
Estimated tax for:	$868.60
Tariff charge[1]	$6,015.06
Total	**$16,026.86**

[1]The tariff surcharge applied to this quotation is based on the import duties in effect at the time of quoting. The value of the surcharge will be adjusted and invoiced based on the actual tariffs assessed at the time of import. Please refer to the Terms & Conditions.

HIGH TARIFFS, as seen in this screenshot of a price quote for a Zeiss microscope from Germany, led the potential buyer, a physicist who requested anonymity, to buy a simpler, used version in the US.

Financial and other costs

Scientists are looking for other ways both to cope with tariffs and move forward with their research. At some universities, purchasing offices handle negotiations with companies and the US government. Researchers are looking for US vendors, and in some cases, international companies can skirt tariffs when purchases are made from a US branch.

Ramamoorthy Ramesh, a physicist at the University of California, Berkeley, recently ordered a magnetometer from a company in Switzerland for roughly half a million dollars. "We are going back and forth on how to accommodate the tariffs," he says. Will the company lower the price? Or will the scientists have to eliminate some add-ons? "We are waiting to see who blinks first."

Even paying tariffs on relatively-low-cost equipment and consumables—chemicals, batteries, optical parts, and the like—means something else has to go. So far, Javier Sanchez-Yamagishi, a condensed-matter physicist at the University of California, Irvine, "is eating the cost of tariffs." But, he says, "cheap Chinese scientific equipment has been a big enabler." Low costs keep down the barrier for trying new things, he explains. "We can take more risks."

Harry Levine is an atomic physicist who is getting started at the University of California, Berkeley. He originally had his eye on a high-powered laser from China for atom-trapping experiments, but in response to tariffs, he is instead opting for a lower-powered laser from Germany. It's cheaper, he says, and in the short term, the swap won't compromise the science he can do. In a few years, though, he'll have to find money for the high-powered laser. The tariffs, he says, affect the prices of domestic and overseas equipment, and both the extra costs and their uncertainty have posed the biggest headache in setting up his new lab.

Waters built his own assembly stage for making quantum devices out of single-atom-thick materials. But it didn't save him money, and it cost him time: The one he built and one he ordered from Europe each cost about $30 000, he says. "Could I build things? Yes, but it would take years."

Toni Feder