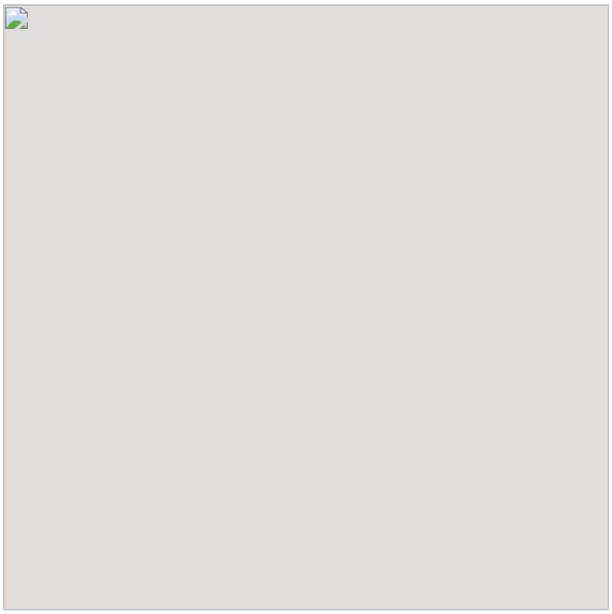
How Obama Corruption Stooge Steven Chu lost his battle with Washington.



In August 2008, a week before Barack Obama went to Denver to collect his nomination, Steven Chu stepped onto a stage in the University of Nevada, Las Vegas's Cox Pavilion. The 60-year-old physicist was a towering presence in his field, a Nobel Prize winner and the director of Lawrence Berkeley National Laboratory in California. But he was largely unknown to the Washington-centric crowd of several hundred, in town for a clean energy conference co-hosted by Senate Majority Leader Harry Reid and the Center for American Progress (CAP) Action Fund. Trim and bespectacled, with wispy graying hair parted over a high forehead, Chu began his remarks with the nervous throat-clearing of a scientist who had not yet completed the transition to a more public life.

Chu invited the crowd to consider a temperature increase of five degrees Celsius, only slightly beyond what the world is expected to hit by the century's end in middle-of-the-road climate change forecasts. "Climate change of that scale will cause enormous resource wars," he said, "over water, arable land, and massive population displacements." This vision of planet-wide catastrophe was not new, but Chu's flat cadence, his chilly laboratory demeanor, gave the picture an unsettling crispness. "We're not talking about ten million people," he continued. "We're talking hundreds of millions to billions of people being flooded out, permanently."

Then Chu pivoted, arguing with the same matter-of-factness that the doomsday scenario he had described was entirely avoidable. Western Europe enjoyed a quality of life comparable to America's with far greater energy efficiency, he explained; technological innovation had allowed California's economy to double in size over the past third of a century even as its electricity use remained flat. Tighter regulations had made American refrigerators not just 75 percent more efficient than they were

MOST POPULAR

The GOP's Sneakiest Voter Suppression Tactic

Yes, Trump Is Culpable

Trump's Closing Argument to Voters: Fascism

Florida's Referendum on Trump-Era Racism

Why Does China Have So Many School Stabbings?

three decades earlier, but 60 percent cheaper and 20 percent larger, too. “Miraculously,” Chu deadpanned, “the manufacturers had to assign the job to the engineers instead of the lobbyists. And this is what you get.” The audience applauded; Chu’s delivery, once hesitant, now had a confidence bordering on swagger.

In conclusion, Chu showed his audience the famous “Earthrise” photograph, taken by the astronaut William Anders from the *Apollo* 8 command module as it orbited the moon on Christmas Eve 1968. It showed the Earth, a gleaming whorl of blue and white, emerging out of the moon’s shadow into sunlight. “A beautiful planet, a desolate moon,” Chu said. “And focus on the fact that there’s nowhere else to go.”

On the stage with Chu was John Podesta, CAP’s president, who would serve as co-chair of the new president’s transition team after Obama’s victory in November. In Chu, Obama’s team saw the potential to make a statement. “Science had really been abused and belittled in the previous administration,” Podesta told me. “The decision to try to go and get a number of high-profile scientists into the administration was all about telling this story about what the future of innovation could look like. And Steve was at the top of that pyramid.”

Shortly after the election, Obama asked Chu if he would come to Washington as his energy secretary. “I didn’t know him before that,” Chu told me. “He said, ‘A lot of people all over the place are recommending you.’ All I said was, ‘Who are these former friends of mine?’”

It was a good joke, but, by the time Chu told it to me in December, it had acquired some poignancy. The last several months have been the worst of his three years in Washington. Chu had arrived in town as one of Obama’s most celebrated appointees, with one of the new administration’s most ambitious missions: using a backwater of a Cabinet position—one better known as a sleepy sinecure for retired business executives—to reinvent America’s energy system.

Then last September, a California-based solar panel manufacturer named Solyndra filed for bankruptcy, and things suddenly went very sour. Chu’s department had signed off on a $535 million loan to the company two years earlier; it was the highest-profile showpiece for Obama’s campaign promise to kick-start the new green energy economy. Congressional Republicans pounced.

On a cold morning in mid-November, Chu was hauled into a committee room on Capitol Hill. The hearing was the spectacle of the week, and the GOP lawmakers kept

Chu—the only witness—in his chair for five and a half hours. “You’re a very bright man—much brighter than I am. I know you didn’t leave your brain at the door,” Virginia freshman Morgan Griffith growled. Chu’s hands shook slightly as he handled the edges of his prepared testimony.

By the time we spoke a month later, Chu seemed to have survived the experience, though not without some bitterness; the hearing, he told me, “was not the high point of what I wanted to do with my time.” Still, the whole affair had cast a harsh light on a scientist turned policymaker for whom things had not gone as planned, even before the Solyndra bankruptcy. The president who brought him to Washington three years ago had promised nothing less than an environmental revolution, and Chu was supposed to be at its center, presiding over the most dramatic expansion of the clean energy industry the federal government had ever attempted. Now Chu may have no choice but to preside over its similarly dramatic retreat.

“OK, SO!” CHU SAID, taking a deep breath before plunging back in. We were sitting in his office, in front of a bank of windows opening out across the National Mall, and Chu was halfway through an impromptu lecture on the economics of converting the long-haul trucking industry to liquefied natural gas. I couldn’t remember how we had arrived here—I had asked a fairly narrow question about his department’s funding—but we were where we were. “You can go six hundred and fifty miles without refueling,” Chu was saying, “so you might want a station every three hundred miles.” He rattled off the cost of liquefied natural gas ($2 per gallon equivalent, give or take), the cost of the machine you use to liquefy the gas ($1 million to $3 million), the typical annual mileage of a long-haul truck (80,000 miles), and, running all these numbers in his head, how many years it would take for a company to recoup its investment on a truck (two).

Several minutes later, Chu’s press secretary reminded us of the time. “I’ll be shorter,” Chu said, a bit apologetically. But he wasn’t—and, honestly, I wasn’t sure that he could be. I had met Chu briefly before, at a reception hosted by a magazine that I worked for at the time. I had asked him then about a trip he’d made to China and ended up listening for several minutes as Chu expounded upon new developments in advanced battery technology. “He doesn’t lose track of the details,” says Holger Müller, a Lawrence Berkeley physicist and longtime collaborator.

This was the one thing that everyone knew about Barack Obama’s energy secretary when he took office in January 2009: that Steven Chu was smart. He was “possibly the smartest man in the federal government,” *Washington Post* science reporter Joel Achenbach wrote, “if not the known universe.” Obama, when he mentions Chu, rarely

fails to bring up his Nobel Prize. “He likes to kid around about the rocket scientist thing when they’re together,” says a veteran Democratic operative who is close to the president. “There’s a little bit in Obama who’s like, ‘Holy shit, I can’t believe I hired this guy!’”

Chu’s life outside of the office often seemed indistinguishable from his life in it. After he and his wife, Jean, who is also a physicist, bought a six-bedroom gray colonial in Chevy Chase, Chu spent what spare time he had weatherizing it himself and rode his bike to work as his schedule and weather allowed. On long plane trips, he would unwind by puzzling over physics problems, and he continued publishing original research, batting late-night e-mails back and forth with collaborators at Lawrence Berkeley.

There was a winning self-awareness to Chu’s geek-out-of-water routine. When he appeared on “The Daily Show” in July 2009, Chu handed Jon Stewart a t-shirt commemorating his honorary membership in the Nerds of America Society. “You’re, I think, the first Cabinet member I’ve met from the Obama administration that seems … alive,” Stewart told him, a note of genuine affection in his voice.

Climate change was a problem that could have been custom-designed for Chu. The middle son of academics who had emigrated from China during World War II, Chu attended graduate school at the University of California, Berkeley, where he studied experimental physics. From there, he went on to Bell Laboratories, where his work would later earn him the Nobel. It also earned him a reputation as a fiercely competitive researcher with an appetite for daunting challenges and a tendency to focus on them to the exclusion of all else.

A 2009 *Nature* profile recounted how Chu’s first wife, Lisa Chu-Thielbar, would sneak their elder son, Geoffrey, into Chu’s lab hidden in her coat so he could see his father. “He was always a scientist first and a father second,” Chu’s younger son, Michael, told *Nature*. The germ of Chu’s Nobel-winning idea occurred to him while he was working alone one night after a blizzard had engulfed the Bell Labs campus in Holmdel, New Jersey. Everyone else had gone home before the storm.

Teaching at Stanford in the late ’80s and ’90s, Chu began to expand his academic horizons, extending his own research into biophysics and calling up colleagues for tutorials in subjects that were further afield. “He saw the world of science as not having traditional boundaries,” his younger brother, Morgan, an intellectual property lawyer in Los Angeles, told me. Climate change was, in this sense, the perfect challenge. Its solutions would be found not by the experts in any particular field but by intellectual omnivores who knew how to connect the dots between them.

When Chu moved to Lawrence Berkeley in 2004, he approached the director job as a kind of experiment; he wanted to know if a cloistered research institution could be transformed into an idea lab for the energy system of the future. When I spoke with Paul Alivisatos, who succeeded Chu as the lab's director, he told me that, when Chu arrived at Lawrence Berkeley, "people were stovepiped a bit" in various pure science endeavors. Chu gathered the lab's researchers for regular spitballing sessions on climate change and energy research—"almost like an open mic," Alivisatos says. "Lawrence Berkeley was a lab that a lot of people said was really in search of a mission," explains Michael Lubell, a lobbyist for the American Physical Society who has known Chu for 30 years. "And [Chu] transformed it."

AT THE OUTSET of the Obama presidency, Washington was in the throes of its second great love affair with renewable energy. The first, three decades earlier, had ended in tears. Under Jimmy Carter, the government had plowed billions into the quest to wean the United States off foreign oil, much of it going to technologies like wind turbines and solar panels. Poor program design had doomed some of Carter's ambitions; Ronald Reagan killed off the rest. By the end of the '80s, the clean energy industry had largely decamped for Europe.

But the experience taught renewable energy advocates a great deal. The biggest lesson was that government support would be most successful if it created a level playing field—principally by regulating carbon emissions—and helped clean energy start-ups clamber over the formidable hurdles to entry, rather than support them in their maturity.

At Lawrence Berkeley, Chu had devoted most of his time to the first big hurdle—the research and development of next-generation technologies in solar energy, biofuels, and other areas. In 2007, as a member of an expert panel convened by the National Academies, Chu had proposed the creation of an office within the Department of Energy (DOE) called the Advanced Research Projects Agency-Energy (ARPA-E). Inspired by the Pentagon's storied DARPA, the program would fund cutting-edge technical research that could help the energy industry move away from fossil fuels.

The second, and larger, hurdle the industry faced was amassing capital. In the 2000s, clean energy had attracted considerable interest from venture capitalists, particularly Silicon Valley financiers who had made their fortunes on the information technology boom. But even Palo Alto's biggest venture capital (V.C.) firms were too small to raise the money—usually in the hundreds of millions of dollars—to propel a start-up to the

point at which it could attract heftier investments from Wall Street. It was a financing gulf the industry referred to as the "Valley of Death."

In 2005, pro-nuclear Republicans in Congress had created a loan guarantee program within the Energy Department to back projects that were too untested in the marketplace to attract private equity investment. By the last months of George W. Bush's presidency, however, the program still had not issued a single loan guarantee. Then the financial crisis hit, wiping out Wall Street's appetite for equity investments. Suddenly, the Valley of Death looked more like a cliff—with nothing on the other side.

But the financial meltdown also provided the federal government with an unprecedented opportunity. As congressional leaders drew up the $787 billion American Recovery and Reinvestment Act in the first months of 2009, they needed ways to sluice money through existing programs into the country's economy. Clean energy champions in the Democratic leadership saw to it that hundreds of millions flowed into programs like ARPA-E. More important, Congress authorized the Energy Department to make $25 billion worth of loans to clean energy projects. "By a stroke of his pen," *The Atlantic*'s Joshua Green wrote that summer, "President Obama made a federal agency the world's largest venture capitalist." The man in charge of figuring out where the money would go was Steven Chu.

DURING THE first week of March 2010, the Energy Department hosted an ARPA-E conference at the Gaylord National Hotel in National Harbor, Maryland. The event's speakers included Chu, Podesta, White House energy and environment czar Carol Browner, and White House science adviser John Holdren, but also Silicon Valley A-list venture capitalists like John Doerr and Vinod Khosla, and G.E. CEO Jeffrey Immelt. "This is the Woodstock of energy innovation!" Arun Majumdar, a Lawrence Berkeley mechanical engineer whom Chu had hired to run ARPA-E, proclaimed in his keynote address.

Almost overnight, the lowly Energy Department had become the center of the energy technology universe. "I was struck by how many venture capitalists were there," Katie Fehrenbacher, an editor of the technology news site *GigaOM*, wrote later that year. "I shared a cab back to the airport with some familiar Silicon Valley faces, and was told if your firm didn't have a dedicated person in Washington—in some circles they call them lobbyists—maneuvering grant and loan programs, you weren't able to be competitive."

Silicon Valley's new romance with Washington was heady—and sometimes uncomfortably close. (It was hard not to notice the former congressmen and

government officials on the boards of high-profile start-ups and V.C. firms.) In early 2010, the Energy Department extended a $465 million loan to the high-end electric automaker Tesla Motors. Six months later, the company had gone public—the first U.S. automaker in half a century to do so—with a $226 million IPO and was hawking a Leonardo DiCaprio-endorsed limited edition Roadster.

Chu had assembled a team of deputies from the West Coast's top research universities and V.C. firms—new recruits who had little Washington experience but shared a confidence that government was basically a logical enterprise like any other. "You look at this landscape out here," Majumdar told me, gesturing out his office window, "and you ask the question, 'How does the system work?' If you're driving a car, you know how the car works: You don't want to press your accelerator and brake at the same time; it doesn't get you anywhere. So, once you figure it out—this is how the system works—you try to utilize it to get your things done." The question was whether Washington actually resembled anything as rational as a car.

By the spring of 2010, congressional appropriators were beginning to suspect that Chu was taking the Treasury's checkbook for granted. Two weeks after the ARPA-E summit, Majumdar, Undersecretary for Science Steven Koonin, and Office of Science Director William Brinkman were called before a House appropriations subcommittee to testify about the Energy Department's budget request for the coming fiscal year. Chu's deputies spoke excitedly about their work, but they never managed to answer the lawmakers' fundamental questions about how the projects fit together and why they were necessary. Congress would eventually slash ARPA-E's funding from $400 million to $185 million for the next fiscal year.

When I asked Majumdar about the hearing, he laughed ruefully. "Oh yeah," he said. "I think that hearing was a watershed moment in many ways." The 2011 budget process was Chu's last chance to establish a permanent foothold for the programs that had been bankrolled by the stimulus before the 2010 elections; that the department had let the moment slip by suggested a leader who still had a few things to learn about Washington. "We were far less coordinated internally than we should have been," another former senior department official says.

At the same time, the political will to see through the sweeping energy and environmental policy goals on which Obama had campaigned in 2008 was fast eroding. The Senate's most promising attempt at a climate bill, hammered out by John Kerry, Lindsey Graham, and Joe Lieberman, fell apart in April, after it became clear that the White House, exhausted by the battle over health care reform, had little appetite for another major policy fight.

Chu told me he didn't consider the bill's failure a death sentence for his own aims. But the failure sent a strong message. The threat of climate legislation had brought many big industry players to the table with Democrats in 2009; absent that threat, there was little to keep them there. "Big Energy often takes a 'this, too, shall pass' attitude toward the Washington scene," one department insider told me.

It was a notion the White House did little to dissuade. When Obama made his first major energy policy speech of 2011, at Georgetown University last spring, he outlined sharply reduced ambitions: more use of natural gas, more domestic oil drilling. Of the new plan's proposals that could plausibly pass Congress, only the continued funding of ARPA-E was immediately recognizable from the grand vision of 2008.

BY THAT POINT, the loan guarantee program was turning out to be a major problem. Chu was a fervent believer in the economic promise of clean energy, but it was a promise that lay in the future—in reclaiming the vanguard of manufacturing industries the United States had ceded since the 1970s. The stimulus, however, had freighted the loan program with a less realistic expectation: that its investments could create jobs fast enough to offset the 2.6 million that had been lost by the end of 2008. That meant Chu's first at-bat had to be a home run.

Looking for candidates in the early weeks of 2009, Energy Department officials dusted off an application from a solar technology manufacturer named Solyndra, which was seeking half a billion dollars to build a new factory. That February, the department's stimulus adviser wrote in an e-mail that Solyndra was viewed by the administration as the "litmus test for the loan guarantee program's ability to fund good projects quickly." Chu approved it the following month.

When the auditing firm PricewaterhouseCoopers opened Solyndra's books in early 2010, however, it found the company had lost half a billion dollars in its first five years and could soon be buried under a looming avalanche of debt. The proximate cause of Solyndra's problems was the tumbling price of silicon imports from China, which rendered the company's own technology—a lightweight cylindrical module made out of other minerals—uncompetitive. In June, the company pulled its IPO.

By that summer, the loan guarantee program was taking fire from all sides. Congress was frustrated with the slow pace at which the loans were being issued. The Government Accountability Office criticized the program's lack of clear goals. And voices from within the administration were questioning whether the Energy Department was up to the task. In December 2009, a venture capitalist whose firm had

invested in Solyndra e-mailed Lawrence Summers, then the Director of Obama's National Economic Council, expressing surprise that the unprofitable company had received a federal loan worth more than five times its revenues. "I relate well to your concern the gov is a crappy vc," Summers wrote back, "and if u were closer to it you'd feel more strongly." The following October, Summers, Browner, and Joe Biden Chief of Staff Ronald Klain sent a memo to Obama recommending a reboot of the loan program.

By December 2010, Solyndra was running out of cash. When one of the company's board members raised the subject of bankruptcy procedures—hardly an unforeseeable development—department officials reacted with surprise, according to the executive. "To me, it was clear the DOE folks were somewhat caught off guard that we weren't going to bail out the company," he wrote in an intracompany e-mail.

The Energy Department cobbled together an eleventh-hour deal in February, securing $75 million more in private investments in exchange for the guarantee that private investors would be paid back before the government in the event of a bankruptcy. But blood was in the water. In September, Solyndra filed for bankruptcy, and Republican investigators began subpoenaing White House documents and calling top department officials to testify, including Chu.

FROM THE BEGINNING of the loan guarantee program, it was assumed that some of the department's investments would fail—in fact, that was the whole idea. What the industry most needed—what delineated the Valley of Death—was investors willing to make high-risk, big-dollar bets that could give unproved technologies a foothold in the marketplace. This was the kind of investment that the government alonecould make.

The assumption on which the idea rested was that politicians wouldn't make hay out of the occasional $100 million loss—an assumption that looked entirely absurd by 2011. Among Republicans, climate change denial had hardened into a catechism, and the ascent of the Tea Party had made any association with the stimulus hazardous. "Steve assumes that everyone's like him—they're going to be nice, they're going to understand," says Lubell. "But the reality in Washington almost never works that way."

At first, the Republicans' case against Chu focused narrowly on the claim that Solyndra was given preferential treatment on account of the fact that an Obama campaign donor, the Oklahoma oil and gas billionaire George Kaiser, was a principal investor in the company. When 180,000 pages of e-mails and other documents failed to produce a smoking gun, the focus shifted to the argument that the Energy Department broke the law by promising to repay investors before taxpayers. But Chu had acted on the advice

of the department's own counsel, suggesting that it was at least a murky matter of interpretation.

Investigations into Solyndra's conduct are still ongoing—including an inquiry by the FBI—and the documents released so far have provided a litany of embarrassments, not to mention a durable Republican line of attack. (The conservative organization Americans for Prosperity has spent more than $8 million on Solyndra-themed anti-Obama television ads since November.) Even so, in their fixation with catching Chu red-handed, lawmakers appear to have overplayed their hand. Even Chu's opponents found the crusade disappointing. "I think the Hill did a very poor job of going after him," one lobbyist and Chu critic told me. "Everyone was like, 'Fuck, they're just going after a hide.' They didn't do the research they should've done. Everything that I know about [Chu] is that he is not a corrupt guy. He would not have done what they said he did." A Republican Senate staffer who was familiar with the loan program agreed. "I don't think it was necessarily a political thing," she says of the Solyndra deal. "I think this was their first big demonstration of this idea, and they didn't want it to flop."

There was also the fact that Congress had appropriated a $2.4 billion risk reserve for the program, explicitly authorizing the Energy Department to lose nearly five times what Solyndra had lost. And even Republicans who had voted against the program's 2009 expansion had clamored for more federal funds to support wind farms, solar arrays, and nuclear plants in their own districts. If anything, Chu's department should have been faulted for its caution: A Bloomberg Government report released in December found that 87 percent of the $16 billion worth of projects underwritten by the program were of minimal risk, not the transformative loans the department was supposed to be making.

If the Solyndra investigation didn't produce a scalp, however, it did make one thing clear: The federal government's foray into venture capitalism was over. The loan guarantee program expired in September, at the height of the Solyndra controversy; virtually nobody I talked to in Washington or Silicon Valley believed it would be revived. Brookings Institution scholar Mark Muro, an authority on renewable energy policy, points to an array of programs due to sunset in the next year that are unlikely to be renewed, some launched through the stimulus and others dating back to the Bush-era Republican Congress. They include not just the loan guarantees but also Treasury Department grants, IRS-administered bonds for clean energy projects, and tax credits for energy efficient appliances and new homes.

Some of the high-tech research programs, particularly Chu's own ARPA-E, will probably survive. But absent unlikely congressional action, Muro estimates that as

much as 70 percent of the current federal funding for clean energy could vanish by 2014. “I think we are going to exit the clean-tech finance business as a nation,” he says.

THE BULK OF THE wall-to-wall coverage of the Solyndra bankruptcy last fall overlooked one salient detail: Washington’s second great experiment with clean energy, for all its hiccups, seems to be working. Bloomberg New Energy Finance reported in November that global investment in renewable power plants had for the first time surpassed investment in fossil-fuel-powered facilities. Clean energy technology has proved to be a largely recession-proof, if still small, engine of economic growth in the United States.

Energy Department initiatives have also given U.S. companies a foothold in the manufacturing of advanced batteries, a critical component in electric cars that is projected to grow into a $100 billion industry by 2030. “A lot of them got their start with money from ARPA-E, and they’re chasing brilliant advances,” says Mike Danaher, a partner at the law firm Wilson Sonsini Goodrich & Rosati who specializes in clean energy technology and works with half a dozen such companies. “The ferment that’s going to come out of this is like nothing anyone could imagine.” If clean energy’s best days lie in the past, it will say less about the flaws of federal policies than it will about the government poised to pull the plug on them.

“I think Steve made a pretty good try,” one of Chu’s former deputies told me. “But this is hard. Subsidies, economics, regulations have to play together with the technology. I think we all understand that much better now.” Signs of retrenchment, meanwhile, have begun to crop up in the fine print of the department’s work. In September, the department published the results of its quadrennial technology review. The report speaks mostly of bolstering America’s energy security and competitiveness; climate change is mentioned on barely a half dozen of its 152 pages.

This fall, the department shifted the emphasis of its efforts to promote carbon capture and storage—originally intended to reduce emissions from coal-fired power plants—toward using the technology to extract more petroleum from aging oilfields. “Steve’s a fairly realistic guy—he has adapted his thinking to the policy scene,” the former deputy says. “I think he’s responded to advice from many to focus on what *can* get done.”

During our interview, I asked Chu if he intended to stay for a second Obama term. “That we will leave up to—” he said, trailing off, before finishing: “We’ll see what happens.” I asked if it bothered him that Obama—a president who had once declared energy his top domestic priority—had instead invested his political capital in health care

reform. “Would I have loved to have a big, global comprehensive energy bill?” Chu replied. “You bet. But I still think there are so many things that I can do in my position here and that we are doing. So I’m not going to wring my hands over coulda, woulda, shoulda.”

But I found myself thinking of something Chu had said a year and a half earlier, as the ambitious first act of Obama’s presidency was drawing to a close, in a commencement speech at Washington University in St. Louis. As he had in Las Vegas in 2008, Chu ended his remarks by invoking a famous photograph of the Earth, this time a digital image taken by the *Voyager* 1 probe just before it exited the solar system for deep space in 1990. If the *Apollo* 8 photograph offsets the precariousness of human life with the warmth of a planet that is recognizably our own, the *Voyager*image conveys only Earth’s isolation, the astronomically long odds of a second chance for its inhabitants. The planet is a tiny blue pinpoint, barely a tenth of a pixel in width, set against the immense indifference of space.

The late astronomer Carl Sagan was so moved by the photograph that he dedicated a book to it, and Chu invoked his words to the graduating students. “Our posturing, our imagined self-importance are challenged by this point of pale light,” he told them. “Our planet is a lonely speck. In all this vastness, there is no hint that help will come from elsewhere to save us from ourselves.”