



Caltech Hall (formerly the Robert A. Millikan Memorial Library) is a prominent campus feature.

# CONFRONTING A RACIST PAST

With a push from students and alumni, the California Institute of Technology faced its legacy of support for eugenics. As it renames buildings and programmes, can its story serve as a model for others? **By Nidhi Subbaraman**

**A**fter a few hours leafing through documents in the basement of a research building, Jane Panangaden was shaking with rage. It was 2017 and she was reading case records for hundreds of people who had been sterilized, usually without their consent, in the 1920s and 1930s. The physician reports had been collected to support the eugenics movement, a racist, pseudo-scientific ideology with a history, Panangaden now realized, that was deeply entwined with that of her university, the California Institute of Technology – or Caltech – in Pasadena.

She was a first-year graduate student in mathematics at the time, but had always been interested in how people have co-opted or twisted science to support unjust policies. She knew a little about eugenics, but had only just learnt of the Human Betterment Foundation (HBF), one of the most prominent eugenics groups of its time, begun in Pasadena in the same decade that Caltech transformed from a sleepy small-town technical school into a science and engineering powerhouse. When Panangaden found out – through the university's own library website – that hundreds of records from the group were neatly preserved on campus, she had to see them for herself.

"It was really upsetting," she remembers. She told everyone she knew, anyone who would listen, that Caltech's past was linked to this group. "I could talk about nothing else for days and days afterward," she says.

In June 2020, shortly after the killing of George Floyd by police in Minneapolis, Minnesota, student groups including the Socialists of Caltech, a group to which Panangaden belongs, put the spotlight on Caltech's most famous former president – Nobel-prize-winning physicist Robert Millikan – and his involvement with the Human Betterment Foundation as a trustee.

The students wanted name changes for several campus buildings, professorships and programmes that memorialize people linked to the eugenics movement. This included the imposing nine-storey library named after Millikan. "It seems very straightforward: we shouldn't be idolizing people with horrible views of the world," says Daniel Mukasa, a graduate student who is currently the president of Black Scientists and Engineers of Caltech (BSEC), the student group that led the call for change. "Then we're setting a horrible standard for all society."

The students were eventually joined by faculty members and alumni, prompting Caltech administrators to reconsider the people it venerates.

Caltech is not alone. Across the United States and around the world, administrations at wealthy institutions have been peeling away name plates and putting statues into storage. In June 2020, the University of Mons in Belgium removed a bust of King Leopold II, who in the

late 1800s established a bloody colonial rule in what is now the Democratic Republic of the Congo. Princeton University in New Jersey had decided in 2016 to preserve the name of former US president Woodrow Wilson for a residential college and a public-affairs school – despite his support of segregation in the federal government. It reversed course last June, announcing that it would rename the buildings. Last month, a group commissioned by Imperial College London recommended removing the names of scientists who supported eugenics and of university benefactors who became wealthy through arms sales or mining in colonized territories. The university's administrators are consulting with staff and students while they consider their next steps.

Many others are conducting excavations of their histories. At the Universities Studying Slavery (USS) project, based at the University of Virginia in Charlottesville, historians and administrators from dozens of institutions around the world are sharing best practices for researching their pasts. Each is looking for ways to reconcile previous injustices with present-day ideals of inclusion and equality.

At Caltech, events progressed quickly last year. The institute assigned a committee to investigate its links to eugenics advocacy. And after a months-long process that sometimes pitted students against administrators, leaders decided in January to remove Millikan's name and several others from prominence on campus. This week, they announced some of the names that will replace them.

It's a meaningful move for Panangaden, who identifies as multiracial and disabled. "I find it important to rename the buildings just because I don't want to have that constant reminder that the people who built this institution didn't want me to be there, and didn't even want me to exist."

But she says it would be a hollow effort without further steps to address the institution's diversity gaps. Many US universities that focus on science and engineering acknowledge that Black, Hispanic, Native American and Native Hawaiian students are under-represented. At Caltech, the figures have been especially stark: only 1.2% of the graduate-student body in 2020–21 identified as Black.

Others agree that investigating the past is just part of the process. "If we're going to acknowledge this history and atone for it, we're then going to have to tilt to something that involves repair," says Kirt von Daacke, a historian at the University of Virginia who heads the USS project. "That's where the real hard work begins."

## Lore and legacy

Caltech alumnus Michael Chwe first learnt about Millikan in 1981, in the big undergraduate seminar for physics students.

Millikan gained fame for his 'oil drop' experiment, which helped to measure the



Graduate student Jane Panangaden was horrified to learn about Caltech's links to eugenics.

magnitude of an electron's charge. Chwe, now a political scientist at the University of California, Los Angeles, remembers following these historic experiments through the scanned pages of Millikan's own notebooks, with rows of recordings and notes in a neat, regular cursive script.

Millikan was a towering figure in US culture and politics. "With the exception of Einstein, no scientist was better known to Americans," former Caltech archivist Judith Goodstein wrote in a 2015 essay (see [go.nature.com/3mtmgbj](https://go.nature.com/3mtmgbj)). Over 30 years, he transformed the institute to a revered scientific centre with US\$40 million in private funding.

"What he did is extraordinary," Goodstein says. "In one generation, he took a school that was really just a local school, and turned it into a powerhouse."

Before 1920, it was known as Throop College of Technology. By the time Millikan arrived in 1921, it had been renamed the California Institute of Technology. When Millikan won the Nobel Prize in Physics two years later, it boosted the institute's reputation and helped him to recruit rising scientific stars and build state-of-the-art labs for electrical engineering and seismology.

When he died in 1953, the Associated Press lauded him as "a prophet of a new age, educator, humanitarian, philosopher" and "one of the world's outstanding scientists".

The links between the Human Betterment Foundation and the institute were forged in the same years that Caltech was growing into an academic heavyweight. But Chwe doesn't remember hearing about Millikan's ties to the group or to eugenics when he was a student.

He first became aware of that last June, on a Facebook thread about campus histories.

Someone had linked to Princeton University's decision to stop honouring Woodrow Wilson's name because of his support for segregation, and because he had discouraged the enrolment of Black students at the university. Someone else commented that because Millikan had supported eugenics, perhaps it was time to rethink his legacy, too.

"I thought, 'Wow, I'd never known that at all,'" Chwe says. He began googling, and the information was all easy to find, some of it in Caltech's own records.

Before the start of the Second World War, Millikan had joined the Human Betterment Foundation as a trustee, just as the group was redoubling its efforts to advocate the forced sterilization of people whom doctors deemed 'feeble-minded' and therefore unfit to have children. California was one of more than 30 states to carry out state-sanctioned sterilization, and would grow to be the most prolific in the country. More than 20,000 people, including young teenagers, underwent forced sterilization surgery in California before the law allowing it was dismantled in 1979 (A. M. Stern *Am. J. Public Health* **95**, 1128–1138; 2005). African Americans and immigrants were chosen for sterilization at rates that were higher than their proportion in the population.

Chwe was crushed. He had come to view Millikan's achievements as part of Caltech's lore. "We saw ourselves as very much a part of that scientific institutional tradition and we were proud of it," Chwe says. The revelations felt like a betrayal, as if his relatives had buried a dark family secret.

In late June 2020, as students on campus began putting together their call for Millikan's name to be removed, Chwe began circulating a petition among alumni, highlighting Caltech's

## Feature

links to the Human Betterment Foundation.

Weeks earlier, two students had written a letter explicitly calling for the removal of names. Members of BSEC drafted a petition that included a demand to rename memorials to Millikan, alongside a list of steps to diversify the student body.

Chwe's petition and BSEC's letter swiftly gathered more than 1,000 signatures each, and the calls were covered by US national and local newspapers.

### Assertive action

Within weeks, Caltech president Thomas Rosenbaum announced a slew of changes. These included funding to expand research and recruitment programmes involving students from under-represented groups. The president also pledged to provide funding for students to attend scientific conferences such as the Annual Biomedical Research Conference for Minority Students and the Society for Advancement of Chicanos/Hispanics and Native Americans in Science.

Caltech affirmed that it would share diversity data covering staff, students and faculty members; send out a survey to document the experience of students on campus; and provide unconscious-bias training for recruitment committees. "The initial interventions and areas of focus were informed by what the administration heard and learned from the community, and included a mixture of immediate and long-term measures," a Caltech spokesperson told *Nature* by e-mail.

Sarah Sam, a neurobiology graduate student then in her fifth year, and president of BSEC at the time, was pleased by the news, but wary. Since her first week on campus, when she felt like the only Black woman in her incoming graduate class, she had devoted time to speaking at graduate-student panels and recruitment events and leading BSEC to build better support for Black students on campus. It seemed, now, that the administration was listening.

"None of the ideas in the petition are new," Sam said at the time. "These things have been requested by me or other people for years, and so a lot of the changes are long overdue."

As for renaming buildings, Rosenbaum announced last July that he would convene a committee to consider the question. He asked Sam to join a 15-member group, the Committee on Naming and Recognition, that included administrators, faculty members and trustees.

Like many Black students and academics who balance efforts to increase diversity with their own career goals, Sam recognized the time and emotional cost of being part of such a group. She had already sunk hours into crafting and promoting the petition, and wasn't sure she was ready to do more. But she had assurances from Rosenbaum that it wouldn't



Sarah Sam was the only graduate student on Caltech's Committee on Naming and Recognition.

be too much of a drain. "I was there mostly to lend my perspective," Sam says.

### Past and future

The committee met weekly from July to December. Its main task was to consider the links that Millikan and six other Caltech benefactors and affiliates had to eugenics broadly, or to the Human Betterment Foundation specifically. Beyond considering whether those names were still fit to be memorialized, the group was to propose general principles for choosing names to honour in the future, to make Caltech "a destination of choice for a diverse community of exceptional scholars".

Scholars of history and racism were invited to advise the committee – including Harvard University historian Evelyn Hammonds, who researches race and science, and Daniel Kevles, an emeritus professor at Caltech and Yale University who has studied the history of the eugenics movement.

Some of the evidence was already on campus. Caltech archivist Peter Collopy combed the university's collections, including Millikan's letters to other scientists, as well as posters, pamphlets and administrative records from the Human Betterment Foundation itself. He scanned, saved and distributed electronic copies of decades-old letters,

meeting notices and memos, so the group could see the primary documents.

The group also posted a survey and invited Caltech faculty members and students to send in their views. Nicolás Wey Gómez, a Caltech historian who studies science and colonialism, joined the committee alongside Sam. He says, "One of the questions, to me, was: was not Millikan a man of his time?"

In 1909, California had become the third US state to pass a bill that authorized doctors in prisons and asylums to sterilize inmates and residents. About 15 years later, Pasadena businessman Ezra Gosney was laying the groundwork for what would eventually become the Human Betterment Foundation.

Biologist Paul Popenoe headed the research operation for the foundation, speaking at conferences and events. He also sent out surveys to thousands of doctors who had carried out the procedure. They responded, describing the people they'd operated on. Others sent observations about the practice. "I believe sterilizations should be performed more freely," one wrote. Another said she thought "sterilization is the best, if not the only, important treatment for hereditary insanity". There were a few more-sceptical responses, too: "I am not convinced that eugenics makes or mars civilization," one California doctor wrote, pointing

SAM COMEN FOR NATURE



## THESE THINGS HAVE BEEN REQUESTED BY ME OR OTHER PEOPLE FOR YEARS ... THE CHANGES ARE LONG OVERDUE."

out that the idea was still being debated, and urging "extreme caution".

Popenoe converted these medical dispatches into a series of pamphlets that advocated the sterilization policy.

These publications were "sloppy and biased research", says historian Alexandra Minna Stern, founder and co-director of the Sterilization and Social Justice Lab at the University of Michigan in Ann Arbor. Yet the efforts lent a false sheen of 'scientific' support for forced sterilization, in the United States and beyond. When California proposed extending its sterilization programme, the Human Betterment Foundation backed the bills (the legislation did not pass). In 1934, an exhibition in Pasadena

supported by the foundation praised the emerging 'racial hygiene' theory of the Third Reich in Germany. German eugenicists visited California and corresponded with the big eugenics groups in that state, looking to its laws as a model before Germany adopted a nationwide sterilization policy for people deemed to have certain conditions that were assumed to be hereditary – among them schizophrenia, chronic alcoholism and 'feeble-mindedness'.

Of the 25 founding members of the Human Betterment Foundation, several were scientists. This wasn't unusual at the time – eugenics was "a feature of the American academy in the age of segregation", says von Daacke. Its main principles grew out of older ideas of 'race science' that wrongly sought to categorize people on the basis of the colour of their skin, and falsely argued that biological differences set them apart.

Pasadena itself was deeply segregated. Rules adopted by businesses and home owners blocked people who were Jewish, Latino, Black or immigrants from living and working in the city.

The 2020 Caltech committee also saw evidence of racism and sexism in Millikan's correspondence, even before he became involved with the foundation. In a 1924 letter, he described southern California and Caltech's location as "the westernmost outpost of Nordic civilization", adding that the "problem of the relations of our race to the Asiatic races is the big race problem of the future", and that California's massive "Anglo-Saxon" population compared to that of east-coast cities such as New York made it an attractive destination. In 1936, he wrote to the president of Duke University in Durham, North Carolina, advising against recruiting a female physicist and arguing that it would be better to hire young men.

During the Second World War, as the United States began a nationwide effort to imprison civilians living in the country who had Japanese ancestry, Millikan collected the names and addresses of Japanese students who had studied at Caltech in the previous two decades and passed the list to the US military.

Millikan became a trustee of the Human Betterment Foundation in 1937. Records show that he often did not attend meetings and instead let other trustees vote on matters on his behalf. But documents also show that his support for the group persisted even when his peers had abandoned eugenics as a viable scientific ideology. "It was not inevitable in Millikan's time to espouse eugenics," Wey Gómez says. "In fact, the academic community and scientists had pronounced themselves already very strongly against eugenics. It was also not inevitable to be sexist or racist or xenophobic. So we have to be very careful what it is that we mean when we talk about contextualizing people in their own time."

The Caltech community was divided at the

start about renaming buildings, however. Of the 1,500 faculty members and students who replied to the committee's survey, only about 45% supported removing the names of people associated with the Human Betterment Foundation. And about 37% of respondents explicitly opposed the idea.

One big argument from this latter group was that the recognition of Millikan on campus was for his scientific work and "not for their social activities or wrongdoings", according to a summary included in the committee's report. There was some concern that renaming "amounts to an erasure of history", and separately that Caltech was swept up in "cancel culture", according to one community member's response quoted in the report. "If we were to 'cancel' Millikan for his views on eugenics, we should most certainly 'cancel' every scientist involved in the Manhattan Project, for their deleterious effects on life," one person wrote. Whether responders supported or opposed removing names, there was broad agreement that Caltech needed to better recognize Millikan's past defence of bigoted ideas and eugenics.

Goodstein supported preserving Millikan's name. She also says that the committee was wrong to scrutinize Millikan's private letters as public statements. "To judge him on the basis of his personal comments – I'm not sure it's fair." But she acknowledges that Millikan made a wrong call in not considering how firmly the tide had turned against eugenics and its spurious foundation in science. "He wanted the money, and he made a terrible compromise," Goodstein says.

When Gosney died in 1942, Caltech accepted the foundation's assets of about \$171,500, equivalent to about \$3 million today. The committee's report states that "the California Institute of Technology clearly distanced itself from the HBF's program" but used the money to support basic research in genetics, establishing a postdoctoral programme that was named the Gosney Research Fellowship.

The committee heard a variety of arguments. "What emerges is a very complex picture of Millikan," Wey Gómez says, "And the committee felt very strongly that we needed to continue to remember Millikan, in all of his complexity."

### Bumpy path

Sam was concerned by how things were progressing. In September last year, she announced that she was quitting the committee.

In a letter later shared online, she listed a series of grievances. Chief among them, she felt that the committee was questioning the part that racism played in the activities of the Human Betterment Foundation. Also, she was disturbed that discussion focused on the extent of Millikan's involvement with the foundation, rather than the horror in the

case reports preserved by the foundation.

When she tried to challenge the arguments from the inside, she says, she was shut down or ignored. She worried that the group would gloss over the racism in Caltech's history, and didn't want her name on such a report. So she quit. Within days, the *Los Angeles Times* covered her exit, describing it as a stumble in an otherwise swift response from the institute.

Rosenbaum sent an e-mail to the community that week, not mentioning Sam by name, but insisting that Caltech and the naming group were "committed as an institution to the open exchange of ideas as a means to discover truth".

"We were very sorry to see her leave," says Wey Gómez. But he did not elaborate on the specific criticisms Sam had outlined in her resignation letter, saying that the committee had agreed to keep deliberations confidential.

Panangaden and other student activists who had watched Sam's public exit were bracing for a fight with the administration. So what happened next came as a surprise. In December, the Committee on Naming and Recognition recommended to the Caltech president and trustees that memorials to Millikan and five other benefactors to Caltech be removed. These included *Los Angeles Times* publisher and Caltech board member Harry Chandler, HBF founder Ezra Gosney, and trustees William Munro, Henry Robinson and Albert Ruddock.

"Millikan's affiliation with eugenics and the HBF as well as his stances on gender, race, and ethnicity constitute a significant breach of Caltech's core commitments and its efforts toward diversity and inclusion," the group wrote in its final report. It also recommended that Caltech present the university's links with eugenics in a more public and open way.

Wey Gómez thinks this was the right decision – the recommendations were unanimous. "Memorialization means that you put an idea or a person in public view, as somebody who represents present values, and who represents the future that we aspire to," he says. Millikan's actions fell woefully short of that mark.

On 15 January, Rosenbaum announced that the board of trustees had agreed to all the recommendations of the group.

Some changes in the student body have occurred already. As of September, 2% of the graduate-student body identifies as Black – nearly double the proportion from the previous year. A programme to bring undergraduates from groups under-represented in science to campus for the summer has tripled, from 25 fellows in 2020 to 80 this year. And graduate record examinations, which have biases against women and people of colour, are no longer required for admission to graduate studies, following a BSEC recommendation.

This week, Caltech's Board of Trustees authorized the new names that will replace many of the contested memorializations, a process that



## WE HAVE TO BE VERY CAREFUL WHAT WE MEAN WHEN WE TALK ABOUT CONTEXTUALIZING PEOPLE."

required the university to contact descendants of donors affected by the changes, and to make legal petitions to the state. The nine-storey library will become Caltech Hall, and professorships named after Millikan now bear the name of Shirley Hufstедler, a judge, former trustee and advocate for diversity at Caltech. The Harry Chandler Dining Hall will be named after Lee Browne, who cultivated relationships between Caltech and local secondary schools. Ruddock House, a residence hall, will be named after Grant Venerable, the first Black student to graduate from the university. Departments are reconsidering fellowships and funds named after Millikan and Munro, and the Division of Biology and Biological Engineering has stopped using the Gosney name for fellowships.

### Future focus

Mukasa, who has served on a committee advising on Caltech student admissions, is hopeful about the progress so far. "Normally with these diversity efforts, you really spend your entire time trying to make these efforts happen, but then you don't really see the fruits of your labour until three, four years after you're gone," he says. "Now I still have three, maybe four, years at Caltech and I still get to actually enjoy seeing this process actually happen."

His next focus is making sure the changes have staying power, by way of securing permanent endowments for some of the expanded programmes. "So far, that has gone well, but again the most important thing is that it continues to go well."

Student activists tracking Caltech's progress are pleased, but would like to see the institute improve on some other requests. These include a requirement for diversity statements, community service and outreach by faculty members in tenure applications, and asking all departments to define clear rules on how prospective graduate students can apply for waivers to the application fees that sometimes serve as a barrier to people from disadvantaged backgrounds.

A Caltech spokesperson pointed to information on the institute's website that describes fee-waiver requirements. She adds: "The current administration has long been fully committed to doing the difficult work of creating a

more diverse and inclusive community."

Panangaden is relieved about the outcome and thinks it will make the campus more welcoming to students, but she wonders whether the institute would have enacted such change if student groups had challenged Millikan's legacy in previous years. Activists at other institutions have observed that universities were swayed by last year's groundswell of public opinion against visible symbols of bigotry, whereas a few years ago they might have been reluctant to adopt change.

Sam was similarly relieved about the outcome, but says she was "devastated" to see that the committee had credited another student, who was not a member of BSEC, with writing the petition that she had co-written with other BSEC members. Caltech corrected the error but failed, in Sam's view, to give her adequate credit for her role in the process. Sam left the university shortly thereafter. A spokesperson wrote in an e-mail to *Nature* that "Sarah's input and contributions to the Caltech community have been and will continue to be of significant value". Six months later, Sam returned to campus, and she is now looking ahead to a new cohort of students that will find a different Caltech from the one she was introduced to in 2016. "We all did this work so that people in the future wouldn't have to think about how much it takes to get there," she says.

Caltech's story might prompt change beyond its own campus. Von Daacke says that, when an elite institution such as Caltech publicly acknowledges its history and begins dealing with it, it has ripple effects with other universities. It "has to be moving the needle", he says. The USS project, which launched with just a handful of institutes in Virginia, was built on that principle, he says, and over 4 years, it snowballed to include 80 institutions across 5 countries.

It was always going to be a challenge to come to grips with Caltech's history and Millikan's towering legacy, says Shirley Malcom, a Caltech trustee who served on the renaming committee with Sam. Malcom also leads the SEA Change programme, an initiative from the American Association for the Advancement of Science that aims to make science and engineering at US higher-education institutions more diverse, equitable and inclusive.

But in striving for a more equitable future, it was essential that Caltech looked to the facts of its past. "History affects your values, your traditions, your culture," Malcom says. Scores of US universities have been built on land taken from Indigenous residents. Many were built and run by people the institutions enslaved, so there is more reckoning to come, she says. "This was not the first institution that had to confront its history, and it won't be the last."

Nidhi Subbaraman reports for *Nature* from Washington DC.