The troubling legacy of Francis Galton

Few figures stand taller in the history of statistics than Sir Francis Galton. But can we separate Galton's achievements in statistical science from his views on race and his association with eugenics? By **Robert Langkjær-Bain**

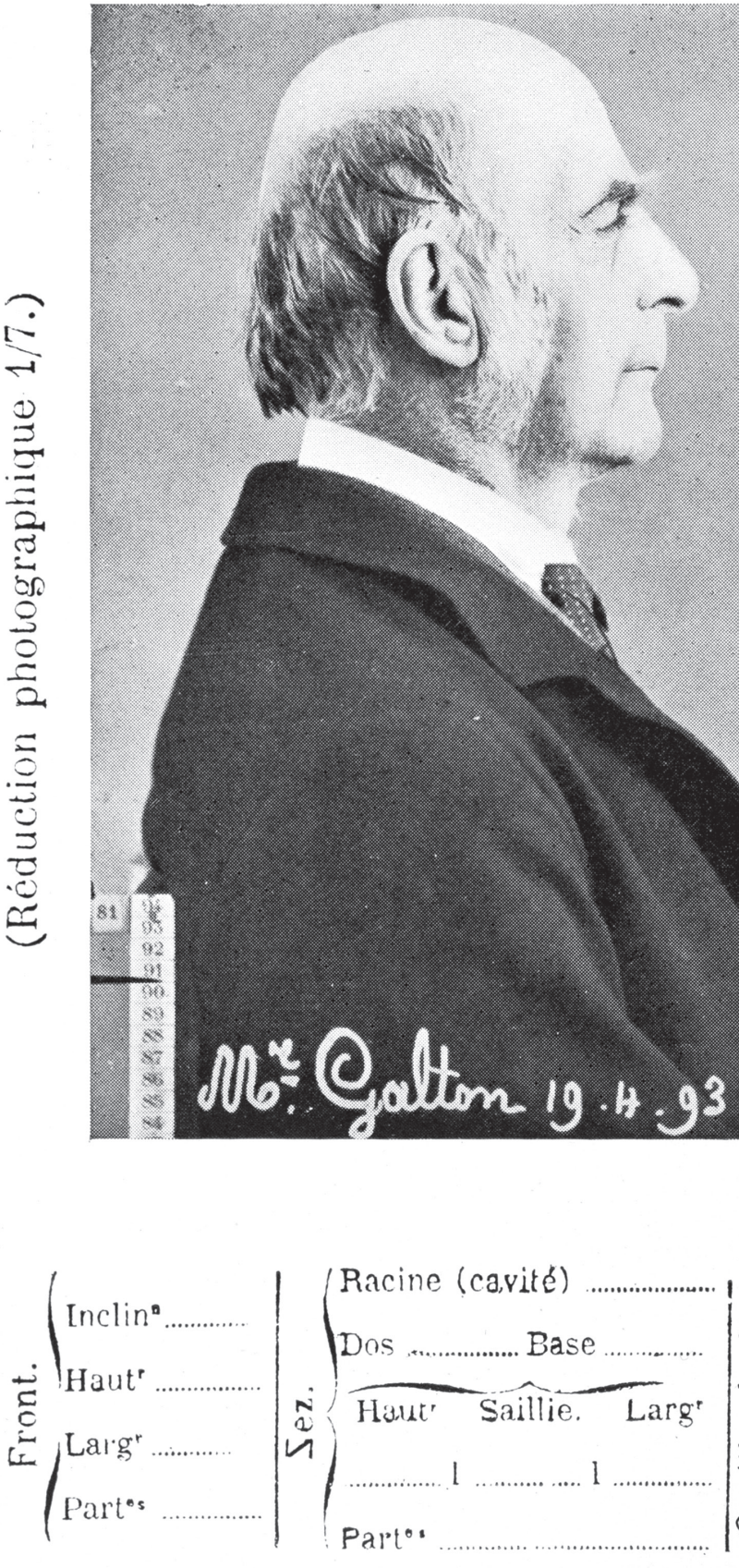
Sir Francis Galton may have died over a century ago, but for staff and students in the statistics department of University College London (UCL), his memory is ever present.

The Victorian polymath endowed the university with his personal collection and archive, and funded the creation of the Galton Chair of Genetics (formerly the Galton Chair of Eugenics).

Students of statistics at UCL cannot avoid him: they spend a lot of their time in the Galton Lecture Theatre. But that may be about to change as Galton's legacy comes back into the spotlight.

A towering figure

In the world of statistics, Galton (1822–1911) is regarded as a towering figure. His developments and discoveries were fuelled in large part by his fascination with the science of heredity. Galton was wrestling with the unanswered question of how different traits stayed stable in a population over generations, building on the work of his cousin Charles Darwin, who had published *On the Origin of Species* in 1859.



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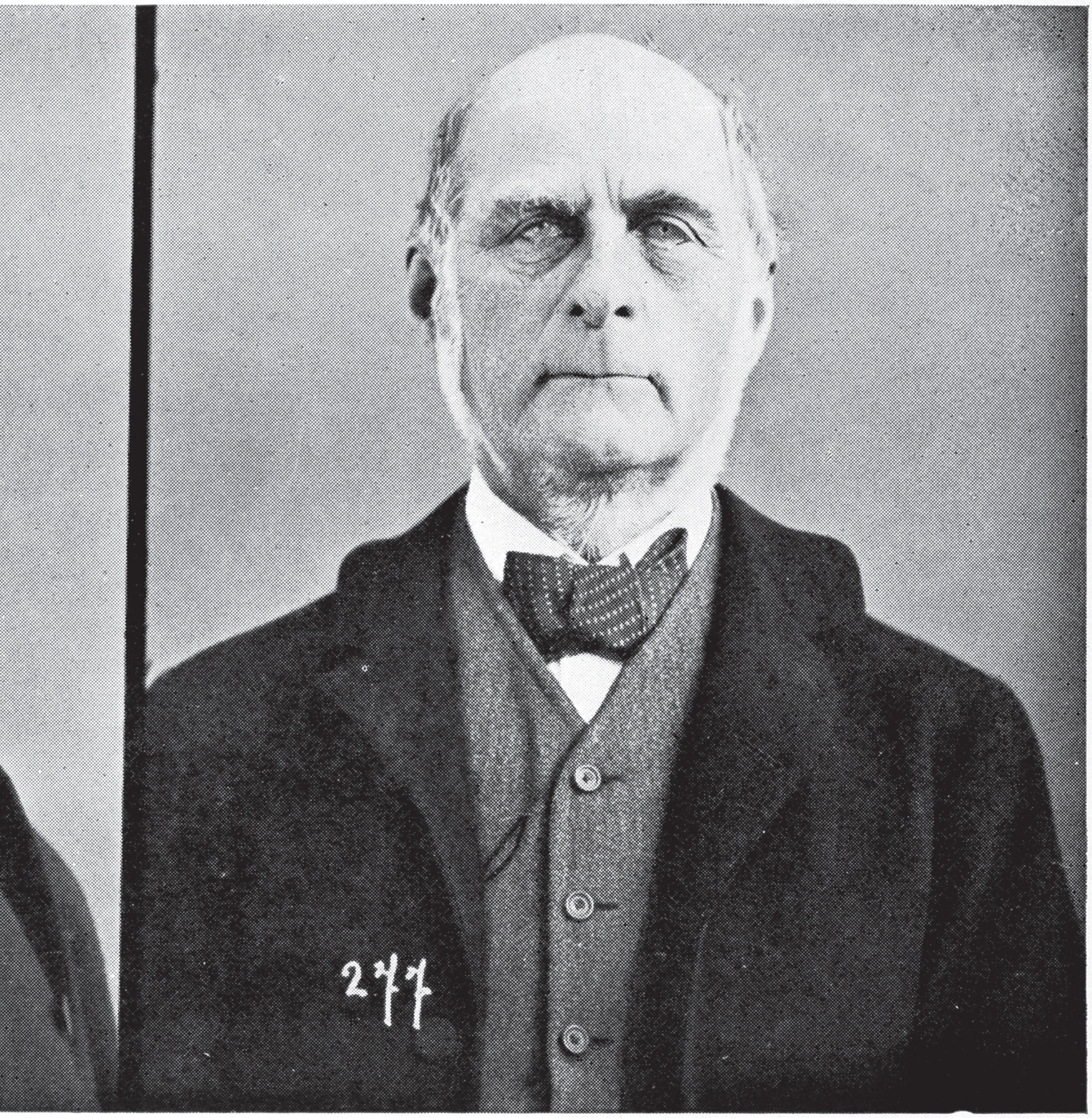

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LEFT
An anthropometry photograph of Francis Galton at age 71, taken during a visit to Alphonse Bertillon's Criminal Identification Laboratory in Paris in 1893. Bertillon originated the criminal identification programme of face-on and profile photographs together with key biometric measurements. Galton, meanwhile, studied fingerprints and published two major works on the subject.
Picture credit: Paul D. Steward/Science Photo Library

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It was this conundrum that led Galton to discover the phenomenon of regression towards the mean, observing how it applied to the size of sweet pea seeds in successive generations. This is the origin of the statistical term "regression", which originally described the pattern he observed, rather than the technique he used to get there. Galton also developed the concept of correlation (although he was not the first to discover it), and showed how it applied to real-world data.

Galton's achievements spanned other fields too: he came up with the first weather maps, pioneered fingerprinting for crime detection, and wrote hugely popular travel guides based on his explorations in Africa. But there is another side to Galton's story: his role in the rise of eugenics.

Galton was convinced that the new science of heredity could help humanity better itself through breeding. It was he who coined the term "eugenics" (bit.ly/2KnKPBd) – from the Greek *eugenes*, meaning "well-born" – and who served as founding president of the British Eugenics Society.

Underlying this were Galton's views on race. His writings include sweeping judgements of different ethnic groups, with the Anglo-Saxons predictably perceived as superior to all others.

Sadly, such views were not unusual for the period. Nor was Galton the only statistician drawn to the nascent field of eugenics – Karl Pearson and R. A. Fisher were also advocates (as, for that matter, were Winston Churchill, Marie Stopes and John Maynard Keynes).

In fact, the views of Pearson and Fisher were arguably more shocking than those of Galton. Pearson made the case that a "struggle of race with race" was necessary to the progress of civilisation (bit.ly/2KpJ2eP), and Fisher was still arguing for innate intellectual differences between ethnic groups as late as the 1950s (bit.ly/2KlC7mP). Yet Galton occupies a special place in our memory as the supposed "father" of the eugenics movement.

Galton died before the appalling impact of eugenics was felt in official policies around the world. In the United States it was used to justify involuntary sterilisation of

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An antique photograph of University College London, date unknown.

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tens of thousands of people considered "feeble-minded" and fuelled racist immigration policies (bit.ly/2KoveBy). In Europe, eugenics helped set the scene for the Holocaust (bit.ly/2KpL66z). As well as murdering millions of Jews, the Nazis also forcibly sterilised or killed hundreds of thousands of convicts, homosexuals, and people with disabilities and mental illnesses.

Policies of sterilisation (forced or otherwise) persisted in parts of the world beyond 1945: in Sweden, for example, a "racial purity" programme was approved by the state until 1976 (bit.ly/2KlCTjJ); in Japan, a law to prevent the birth of "inferior children" was not abolished until 1996 (bit.ly/2KpMtlJ).

The shadow of Galton

The term "eugenics" is now shunned, and the modern science of genetics keeps well away from any association with it. But, recently, a campaign by UCL students to "decolonise" the university (bit.ly/2KqaPkk) has been pushing for the Galton Lecture Theatre to be renamed, along with the Pearson Building and the Petrie Museum (named after the archaeologist Flinders Petrie). "Buildings all over our campus are named after eugenicists who today we would call white supremacists," the campaign says.

And it is not just students who want the theatre renamed. Professor Joe Cain, head of UCL's department of science and technology studies, has told the university he will not lecture in the theatre as long as Galton's name is on it (bit.ly/2KlFQ3N). He points to a letter Galton wrote to *The Times* in 1873, proposing the idea that the Chinese colonise East Africa. Galton wrote of the "inferior Negro race", which he described as "lazy, palavering savages", in contrast to the "industrious, order-loving Chinese" (bit.ly/2KlGf6j).

A UCL student campaign has been pushing for the Galton Lecture Theatre to be renamed

These comments, Cain says, are enough to "disqualify a person from honoured status". "UCL must associate itself with leaders in the struggle for equality," Cain argues. "By any metric, Galton was not one of those leaders."

Arguing about the context of the time in which Galton lived is to miss the point, says Cain – because it is also about sending a clear message. "I don't want my university to be ambiguous on this symbolism", he says. And given the multitude of other names UCL could celebrate, "it's time for someone else to get a turn".

These debates about UCL's past have been going on for a few years, but recent developments have shown how the past continues to influence the present. Last year it was reported that the university had unwittingly played host for a number of years to a secret, invitation-only conference that discussed eugenics and other controversial aspects of the study of human intelligence (bit.ly/2KpPVgh).

In the light of this revelation, and the ongoing student campaign, the university launched an inquiry into the history of eugenics at UCL, led by Professor Iyiola Solanke of the University of Leeds (bit.ly/2KlGUEP). The inquiry will issue its report this summer, making recommendations for the university's policies, including whether any premises should be renamed. UCL has also responded to calls from students to establish a new Centre for the Study of Race and Racism, which will employ a professor and three further staff, and run a master's programme (bit.ly/2KyI2aG).

Representatives of the university declined to comment for this article while the inquiry is under way.

Mahmud Rahman, democracy, operations and community officer for the university's student union, has welcomed the inquiry, saying that "UCL's history in relation to eugenics is deeply troubling for us and our members".

A painful past

UCL is not the only institution that has had to come to terms with Galton's opinions and beliefs. The Galton Institute is the successor of the British Eugenics Society, and its current president, the geneticist Veronica van Heyningen (who is also an honorary UCL professor), says she has spent "a lot of time thinking about how to right historical wrongs".

Van Heyningen says the Institute, whose work still focuses on human heredity, vets new members, and expects existing members to uphold its current values. She calls Galton "a fantastically important father of genetics and biometry", adding: "We feel that you can't just brush the achievements of a person like that totally under the carpet because of the coining of the term eugenics and being – as were many, many people in those days – in favour of eugenics. I think it's well accepted that he was a racist, but again, a lot of people in those days were racists."

The Nazis certainly used ideas from eugenics to further their own ends, says Van Heyningen, but this was only one example of the Nazis adopting theories and nomenclature that served their purpose. "I don't know if we can fully lay that at Galton's door."

Professor Stephen Stigler of the University of Chicago's Department of Statistics is fascinated by Galton's life and work. "I think he's one of the most important statistical scientists of that century," says Stigler, "and I've even ventured to suggest that he was as important and influential as his cousin Charles Darwin."

Stigler says the change in perspective that Galton brought about with his discoveries is comparable to how Einstein turned Newtonian physics on its head with his theory of relativity.

People's abhorrence for eugenics is quite right, says Stigler, but "the question is, where does Galton stand in this? And if you look at his work you find a number of things that are really quite surprising."

Stigler argues that for Galton, the key principle at the heart of eugenics was that "smart people should marry smart people and have lots of children", an ideal to be achieved first and foremost through education, encouragement and incentives (although Galton also argued for segregation of the "feeble-minded"; bit.ly/2Kpsns5).

Galton was also frustrated, Stigler says, by fellow eugenicists who lacked the patience or rigour to follow the evidence. In *Essays in Eugenics* (1909), Galton urged eugenics advocates not to overstate its benefits or move too fast in its application. "A great deal of investigation is still needed to show the limit of practical eugenics," he wrote (bit.ly/2KxC6N4).

"He keeps coming back in his writing on eugenics to, we need more information, we need more research," Stigler says. "He's consciously trying to put a brake on things. Going forward in eugenics required research and care, and you should not do anything unless you were absolutely certain scientifically and you had established broad popular support.

"Had he seen it was going to go off in the direction it went?" asks Stigler. "I don't think so, but he was certainly conscious of some need to get people a little less carried away."

We are being challenged to think harder about what we commemorate and why

Nor was Galton blinded by ideology, Stigler argues. When his hypotheses turned out to be false (for example, when he wondered if African fingerprints might be somehow less sophisticated than European ones), he saw it in the evidence. When his methods were limited and flawed (for example, when he tried to study the inheritance of scientific ability in family trees), he accepted and openly discussed it.

In fact, much of Galton's views on genetics were underpinned with a concern for social justice. He argued that wealth should ideally be earned, not inherited, and saw hereditary peerages as "valueless" (bit.ly/2KbszHW). Yet at the same time he encouraged "the pride of race" and advocated celibacy for "the weak". As for immigrants, they should be welcomed, he said – provided they were "the better sort" of immigrants.

Although Galton was clearly a man of his time, Stigler believes he was one with an open mind, willing to go where the science led him, and his writing shows a recognition of individual variation, a sensitivity to how economic and cultural conditions affect people's achievements, and a willingness to continually adapt his view. "If UCL is looking for names to take off of buildings," says Stigler, "I wouldn't even put Galton in the top 75 or 80 per cent."

The Royal Statistical Society's president, Deborah Ashby, has written to UCL's inquiry to call for it to take a balanced view of Galton, urging that there be no "blanket condemnation of the whole man". Furthermore, his views on eugenics should not be linked to the statistical techniques he developed, Ashby argues. "One hundred years ago, almost the entire population used to hold views on race, gender and sexuality that would be thought abhorrent now, and if everything associated with supporters of eugenics were going to be rebranded, there would be a lot of work to do," says Ashby (bit.ly/2Kp1ILY).

History reassessed

The debate over Galton's name is just one of many controversies about how we remember the past. Our everyday lives are filled with memorials – statues, plaques, and names immortalised on buildings, road signs or lecture theatres. But, increasingly, we are being challenged to think harder about what we commemorate and why, instead of just walking on by.

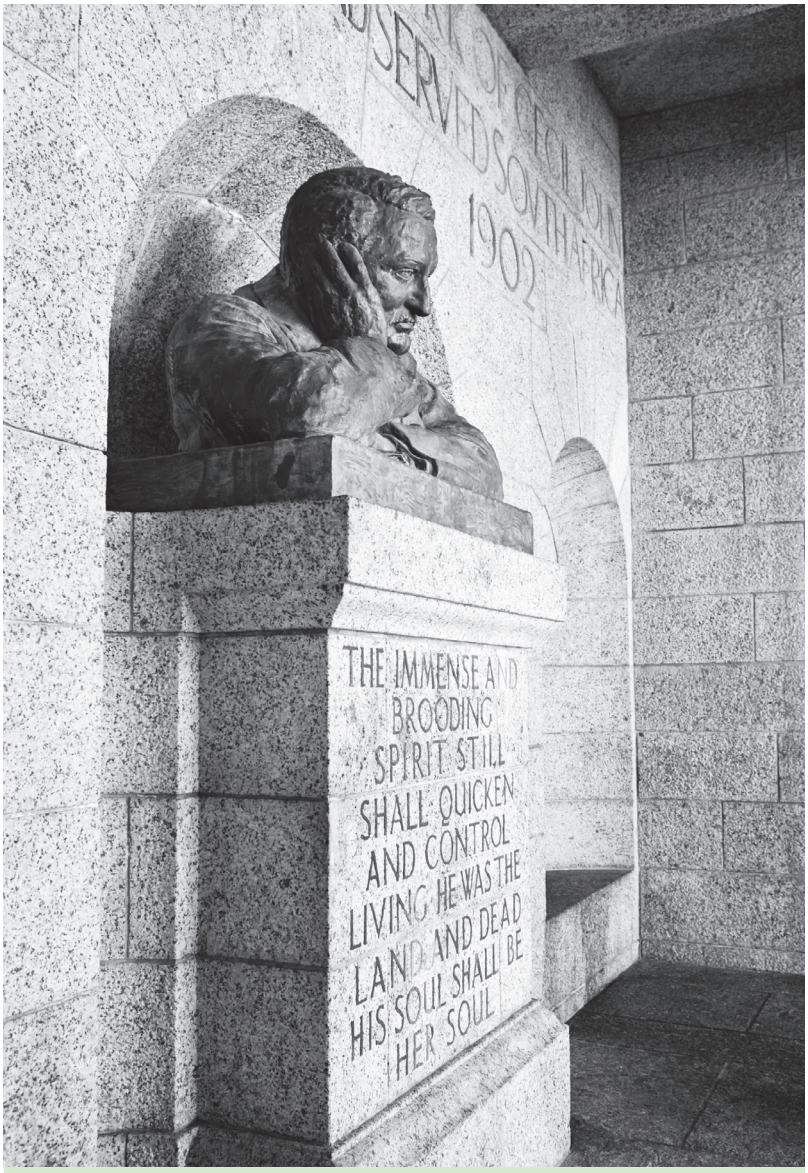
Professor Jerome de Groot of the University of Manchester specialises in the way history is represented in the present day. Public commemorations tend to be of important, influential individuals, often philanthropists or war heroes, and almost always male. De Groot says: "We commemorate a particular type of achievement and that makes us, I think, have to reflect on why we remember in certain ways. We all have a responsibility to our collective memory, whether we're scientists or historians or statisticians or whatever."

Taking a step back to see our own biases is hard – especially for scientists who like to see themselves as impartial. "Science is quite bad generally as a community at perceiving of the consequences of its work," says De Groot. "It's important for science to realise that you [scientists] are part of culture and society and your work is not objective. It's a debate about recognising one's own historical situation and one's biases and concerns."

In other words, those who judge Galton may be judged just as harshly in future. "In 50 years people may look back at us and say, I can't believe they worked on that stuff," says De Groot. "To understand your historical specificity, to be self-conscious about that, is an astonishingly difficult thing to do."

Another vital consideration for organisations such as UCL, which are custodians of history, is to recognise the role of privilege in these discussions. If one is in a position of privilege, then it is easy to dismiss concerns about the way history is commemorated as "not important or easily mitigated", De Groot warns. The legacy of eugenics, for instance, will look very different depending on whether you are a member of an ethnic minority or another group that eugenicists discriminated against. Some universities, De Groot says, have demonstrated a "tone deafness" in their failure to recognise that position of privilege when responding to these debates.

While it may be difficult to judge the past, De Groot says: "You can try to educate people about it. That has to be a long-term process and collaboration with students and to recognise that there will be people who will be upset and angry about it, and people who would say, just leave it.



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The pedestals we put people on

All around us, the way we remember and celebrate history is being reassessed, often with a critical eye to the wrongdoings of past generations.

In Bristol, England, campaigners have pushed for the name of slave trader Edward Colston to be removed from buildings and streets. In Cape Town, South Africa, and Oxford, England, students tried to get statues of the colonialist Cecil Rhodes removed. (The bust shown above is from the Rhodes Memorial in Cape Town.) And the proposed removal of a statue of General Lee in Charlottesville, Virginia, in 2017 sparked the anger of white supremacists.

In other cases, marginalised historical figures have come to the fore, such as Alan Turing. After helping crack the Enigma code and creating modern computing, Turing was prosecuted for homosexual acts and forced to undergo chemical castration. He died, possibly from suicide, and was overlooked for decades.

Only in the twenty-first century – when views on homosexuality have moved on, and the huge significance of Turing's work in computing has become clear – has Turing been honoured with a statue at Bletchley Park, another memorial in Manchester, an official apology, a pardon, and an institute of data science and artificial intelligence named after him. In fact, this year Turing was chosen in a BBC poll as the single greatest "icon" of the twentieth century.

These commemorations are there to tell stories about the past – but they cannot help but tell stories about the present at the same time.

"There's no easy way or template for addressing these things, but just doing the addressing is the beginning – and you can't do it on your own. It has to be outward-facing, collaborative, and draw in as many voices as possible to demonstrate you're serious about changing something. Not necessarily the name, but something."

Living with the past

So how to get it right? Should Galton's name stay or go? Stigler says that if having the name on a lecture theatre is hurtful to people, "I'm not going to tell them what to do." But, he says, "going along looking for names on buildings is a pretty weak thing to be doing. Trying to pretend the past didn't exist is less productive than acknowledging it and coming to terms with it."

Van Heyningen says: "I have no problem with them renaming the Galton Lecture Theatre or the Pearson Building for that matter, or whatever, but I don't think it solves the problem. It doesn't help keep the disturbing aspects of history in our sight. We mustn't forget this history. I think it would be better if they put up a plaque explaining the history, and owning the history. I don't think we should forget that people thought differently, as far as eugenics and so on are concerned."

Subhadra Das, who curates UCL's Galton Collection, has done much to bring the university's history of eugenics to life, including through a podcast that guides listeners on a walking tour around university buildings that carry the names of eugenicists (bit.ly/2UJqXfT). It is a way of showing how the buildings can provide a starting point to understand the history, and a chance to turn a challenging legacy into something positive.

Meanwhile, the Galton Institute has called on the university to set up a prominent and permanent exhibition about Galton's life and activities, as a way of "owning" the history and encouraging as wide an audience as possible to engage with it.

UCL's inquiry is yet to conclude (as *Significance* went to press), but the establishment of the Centre for the Study of Race and Racism suggests a willingness to face the issues, and an openness to new perspectives. Van Heyningen welcomes the move as a "great thing", because "they're redressing the balance and bringing to the fore voices that have not been heard sufficiently".

Inevitably, different people will have different views on what we commemorate – and how. If we remember a name, do we glorify it? If we remove a name, do we risk forgetting the lesson that went with it? Answering these questions is something that we all – whether as citizens of a country, residents of a town, or staff or students of a university – must do together.

But it is never easy to confront the past, says Stigler. "I get told all the time that it's good to bring the history of statistics into the classroom because people will identify with it and be more inspired when they find that humans did all this. Problem is, they discover humans are human." ■