Racism in science

FIVE RESEARCHERS SHARE THEIR STORIES

For some, it is a constant hum, for others like violent blows — racism is deeply entrenched in academia, and it is driving people out.

MARTHA GILMORE
FIGHTING THE UNDERTOW

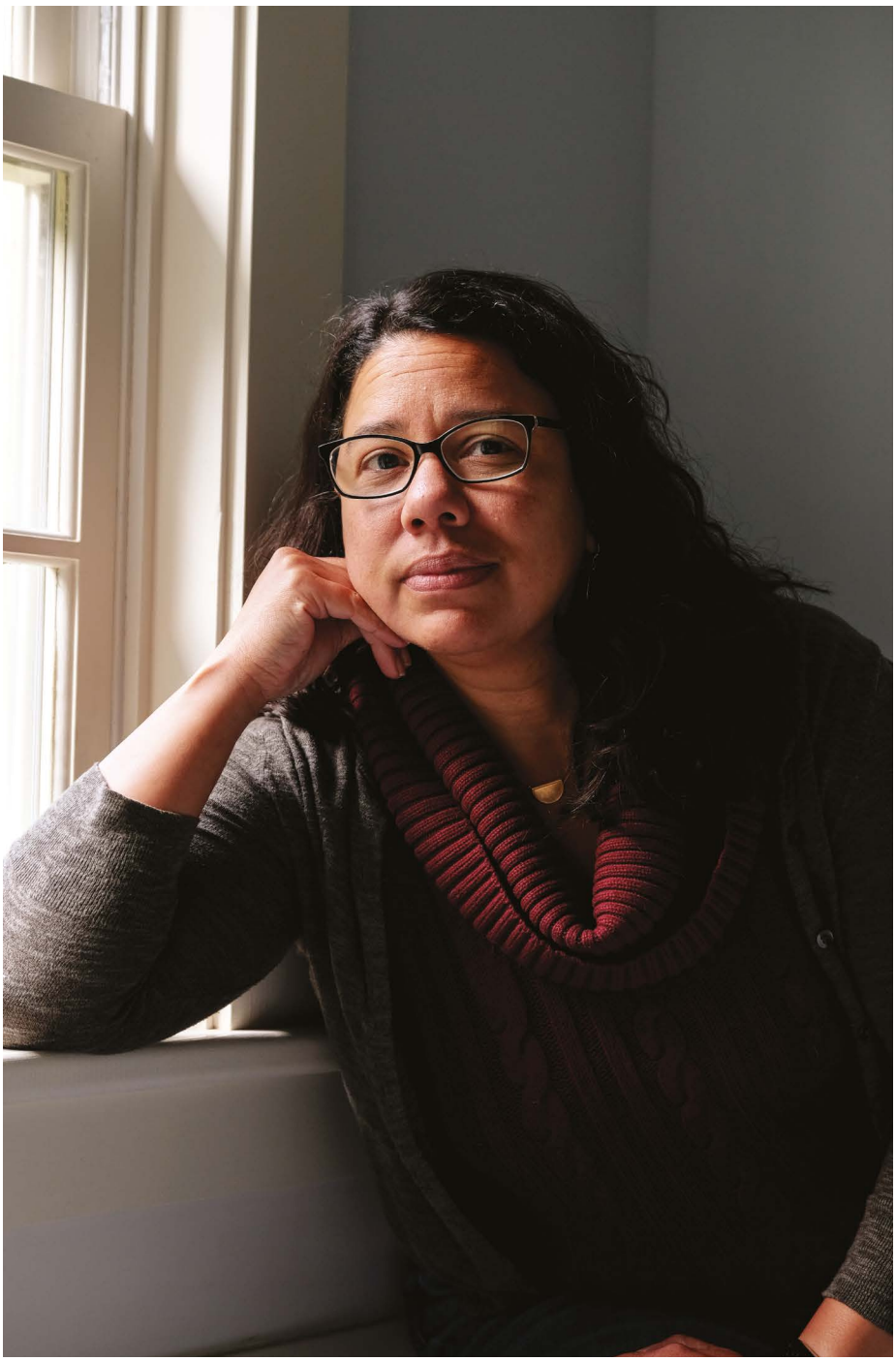
By Kendra Pierre-Louis

In March, Martha Gilmore delivered an unusually moving keynote lecture at the annual Lunar and Planetary Science Conference in Woodlands, Texas. Woven into a talk about the geology of Venus was a challenge for the mostly white, mostly male audience to think deeply about who is — or rather, who is not — doing research in this field.

According to data from the American Geosciences Institute, people from under-represented minority groups — including Black people — made up less than 6.7% of those awarded geoscience doctorates in 2019. And the proportion of those who continue in geoscience in some capacity shrank from 23% in 2010 to 19% in 2017.

"If I'm under-represented, then white folks are over-represented by definition," said Gilmore, who is Black and a professor of earth and environmental sciences at Wesleyan University in Middletown, Connecticut. "So what I'm going to ask you to do is think about, scientifically, why that's an issue."

Gilmore fell in love with geoscience as a child in the 1980s — first through watching Carl Sagan's *Cosmos* television series, and then at what she laughingly calls "nerd camp", a summer science programme for high-school students at Franklin & Marshall College in Lancaster, Pennsylvania. In those early years, she lived in what she calls her parents' protective



LAYLAH AMATULLAH BARRAYN FOR *NATURE*

Martha Gilmore studies the geology of Venus, Mars and Earth.

bubble. She knew she wanted to be a scientist, she knew she loved rocks, and nobody in her orbit deigned to tell her that she couldn't or shouldn't.

It was in graduate school, at Brown University in Providence, Rhode Island, that the bubble burst. In white spaces, racism is often characterized by the most egregious acts – shooting Black people in a supermarket, burning down historically Black churches or saying the n-word, for example. But for Gilmore, racism has been an undertow, a persistent current in everyday interactions that threatens to drag her under if she isn't careful.

It's getting on a plane to a conference, chatting to the person next to her and, after telling them what she does for a living, "they say I'm lying", says Gilmore.

It's the white colleague who asks why she's parking in the faculty lot. "I'm like, 'Really?'" Gilmore says. "Because we were just in the committee the other day, and you used to know who I am."

"The subtle racism is so persistent for me, it is a constant hum that I notice only when it eases," says Gilmore.

Racism is also the quiet isolation of going to conferences for months, years, decades and being one of the only Black people in these predominantly white spaces. The issue, says Gilmore, is not just one of comfort, but also of safety.

"There's this feeling that if you say the wrong thing, they can find ways to punish you," she says. This could be through the peer-review process, for example. And the feeling that you don't belong can itself push people out of their field.

"We're on the edge of a knife," she says. "I have had many bad days, right? And we all have. And so you need to have someone to help you through those."

For a long time, Black academics have shouldered most of that task. "Any Black professor will tell you how many students she or he counsels that are not even in their field," she says.

And the Black students who come from abroad – such as from the Caribbean – to the United States have really helped her to visualize the weight of racism and its effects.

"They come in as freshmen, and they're like, top of their class, doing their thing. And then, by the time they leave as seniors, we have given them being Black in America, we've given them that experience. And it's awful," she says. As they go on to graduate school and medical school, some of them reach out to her. "They're calling me to say, 'How do you deal with this?' And I have to tell them, tell my babies, and help them through, I mean, the most explicitly racist shit you can imagine."

For a long time, Gilmore kept fairly quiet about her frustrations around her field's racial gatekeeping, but as she has developed a reputation as an excellent scientist, she's started

> "THE SUBTLE RACISM IS SO PERSISTENT FOR ME."

speaking up – during the keynote earlier this year, and in other ways. She recently organized a colloquium and invited only Black speakers, for example. It took a while, but a colleague eventually noticed her efforts and praised her for them.

"The thing is," she says, "he could have done the same thing, too. It's not like I knew these speakers personally." For Gilmore, many white scientists are great at research, but not when it comes to diversity.

NADINE CARON
COUNTERING THE CRITICS

By McKenzie Prillaman

Nadine Caron was horrified by what she was hearing.

On a summer's day in 2017, she was on a conference call discussing a potential project to improve genetic treatments for Indigenous children in Canada. Experts from around the world phoned in to help Caron and her colleagues to refine their grant application for an initiative called the Silent Genomes project.

But during that meeting, a nameless voice cut in to say, as Caron recalls: "I don't understand why you're spending so much money and so much time applying for this grant when your people are killing themselves."

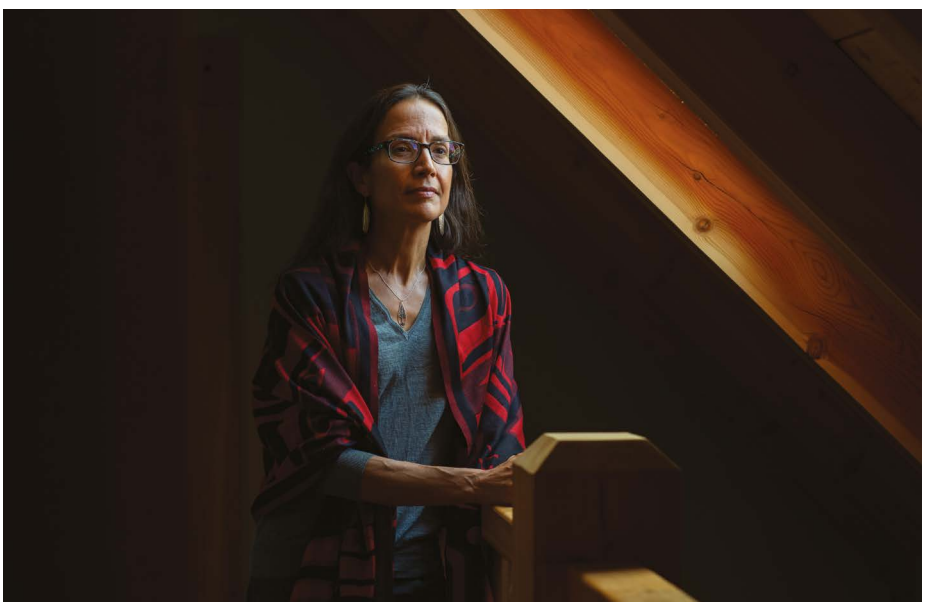
This person began rattling off health issues – such as suicide, diabetes, alcoholism and drug use – that have higher rates among Indigenous populations than in non-Indigenous people in Canada, insinuating that Indigenous peoples have too many other problems to deal with before they can think about being on the cutting edge of precision medicine.

"I was appalled; I was hurt," Caron says. "I was panicked that people in this space were thinking this."

Caron is a member of the Sagamok Anishnawbek First Nation and the first Indigenous woman to become a general surgeon in Canada. She currently practises at the University Hospital of Northern British Columbia in Prince George, Canada. As an outspoken advocate for Indigenous peoples' rights in health care and research, she's used to defending the validity of her work.

Caron has repeatedly heard physicians judge Indigenous patients, families and communities for their avoidance of the health-care system, which has, in part, led to high rates of health problems. But these medical professionals fail to acknowledge that Canada's historical mistreatment of Indigenous peoples has bred this mistrust, she says. Therefore, it's up to health-care providers to break the cycle of stereotypes, assumptions and racism.

Still, Caron was dismayed to hear the discriminatory remarks coming from a project adviser, who presumably wanted the effort to succeed.



TAEHOON KIM FOR *NATURE*

Nadine Caron wants to break the cycle of stereotypes that contribute to poor health.

Genome British Columbia (Genome BC), a Vancouver-based non-profit organization that supports genomics research, had assembled the group of advisers. Sally Greenwood, vice-president of communications and societal engagement at Genome BC, stated in an e-mail that no one reported the comment at the time, and that the organization is committed to equity, diversity and inclusion. It would have launched an investigation had it known, Greenwood says. Genome BC co-funded the project in 2018.

"The comments were harsh," says Laura Arbour, a medical geneticist at the University of Victoria in Canada, who leads the Silent Genomes project and was on the call at the time. But, she adds, "that was not the first time I've heard comments like that".

The adviser's arguments reflect a long history of non-Indigenous people telling Indigenous physicians, researchers, leaders, elders and community members what priorities they should have.

"It should be the other way around," Caron says. Academic qualifications and years spent in a scientific role can never replace actual lived experience in one of these communities, she adds.

This is one of the reasons why Caron has helped to found and now co-directs the Centre for Excellence in Indigenous Health at the University of British Columbia (UBC) in Vancouver. The centre, established in 2014, supports research into Indigenous health, prepares future medical professionals on how to provide culturally safe care and works to increase the number of Indigenous individuals in the health sciences.

Martin Schechter, an epidemiologist and founding co-director of the centre, calls Caron an amazing colleague and a "passionate advocate".

Increasing the number of Indigenous healthcare professionals is especially important to Caron, who, in 1997, became the first First Nations woman to graduate from UBC's medical school.

In Canada, only 10% of people over the age of 24 who identify as Indigenous have attained a university degree, compared with 26% of non-Indigenous people in that age range, according to a 2016 Statistics Canada census. The census also shows that fewer than 1% of specialists and general practitioners in Canada identify as Indigenous, even though the Indigenous community makes up almost 5% of the country's population.

Today, more Indigenous individuals have entered the medical field thanks to work led by Caron and others. And she envisions a future where it's the norm to have health-care providers and scientists who are First Nations, Métis and Inuit.

Reflecting on that conference call five years ago, Caron says she's curious to know who was questioning the Silent Genome project's purpose. She and Arbour can't be sure whether the anonymous adviser truly felt that way or was provoking the team to prepare them for the main review that determined the funding. But the bluntness and tone struck Caron as sincere.

Still she wonders. Perhaps if she had known the person behind that disembodied voice, she could have talked to them and redirected their views.

"Do I think I can change the world one person at a time? No," she says. "But sometimes do I try? Yes."

CHRISTOPHER JACKSON
HOLDING INSTITUTIONS TO ACCOUNT

By Tosin Thompson

Many people could look at Christopher Jackson's career and assume that racism hasn't held him back. His research projects have been awarded more than £10 million (US$11.1 million) in funding, and in 2015, at 38 years old, he became, at the time, the only Black geoscience professor in the United Kingdom. Jackson has endured racially charged slights, such as showing up to a meeting to deliver a keynote address and being mistaken for an audio-visual technician. They've made him second-guess himself, but not too much: "I'm pretty thick-skinned."

Jackson didn't grow up with dreams of being a scientist. He was born and raised in Derby, UK – a predominately white industrial city – to parents who had emigrated from the Caribbean. He had never heard of university until it was brought up in passing by teachers and career advisers. He got a degree in geology at the University of Manchester and, later, a PhD at the same institution.

Jackson gained prominence in 2017, when he co-presented *Expedition Volcano*, a BBC documentary. From there, Jackson appeared in other documentaries while he continued his research. He had also become vocal about anti-Black racism, speaking to media outlets about the structural biases that exclude and hold back Black scientists. He felt it was his responsibility. "I've got a lot more privilege and protection than those who are more junior to me," he says.

His increased exposure came with abuse and criticism, which became more charged after the murder of George Floyd in 2020. When it was announced that year that Jackson would be the first Black person to present the Royal Institution's Christmas Lectures, he received an onslaught of e-mails and direct messages saying that the decision was made 'because he's Black' and describing it as an attempt at 'woke virtue signalling'. One letter calling him "a massive disappointment on the issue of race and identity within the UK" was sent to him, along with a book extolling the 'benefits' of slavery to Black people. "I've suffered more racism for being outspoken, but I think it's absolutely worth it," says Jackson. "I think it's important to upset people for the right reasons."

Last year, Jackson was hired by the University of Manchester as chair in sustainable geoscience. He was excited: "Manchester, as a city and an institution, meant so much to me because I'd spent so much time there," he says. But he quickly began to feel a lack of support from many colleagues. A month into his job, Jackson was quoted in a BBC news story about the disproportionately low representation of Black people in UK science. He stated that UK-funded science is "definitely institutionally racist" and that senior white scientists do not recognize the ways in which racial biases permeate their institutions.

Four days later, he got an e-mail from the university's vice-president, Martin Schröder, who said he did not think the university was institutionally racist and that such language was counterproductive. The e-mail included a link to an opinion article calling institutional racism an ill-defined, unhelpful concept. Schröder copied the e-mail to several high-level colleagues.

"I was very angry and upset by the e-mail," says Jackson, who asserts that his public comments were not directed at the university. He saw the e-mail as an attempt to malign him and his views.

Hoping for support, Jackson forwarded it to his department head and close colleague, volcanologist Mike Burton – but he was disappointed by the response. During a follow-up conversation, Jackson says he got the sense that Burton viewed people at the university as too intelligent and liberal-minded to be racist.

"He seemed to think that if you're good at doing something with volcanoes or dinosaurs, then you'll have the intelligence also to think about the myriad and subtle ways in which racism manifests," says Jackson.

Burton denies saying such things: "Academics have the same unconscious biases as anyone." He says he did not initially recognize that Jackson was upset by the e-mail, because he had forwarded it with the note: "for information only, no need to reply".

Jackson eventually filed a formal grievance to the university, which launched an investigation. "I felt it was really important to do this, for both myself and other people in the future, to stress test the university's reporting procedures on racial issues," says Jackson.

According to a statement from the University of Manchester, the investigation found "no evidence of any racist behaviour". It adds that

> "I THINK IT'S IMPORTANT TO UPSET PEOPLE FOR THE RIGHT REASONS."

its policy is to keep all grievance investigations confidential. The statement asserted the University's commitment to all aspects of "Equality, Diversity, Inclusion and Access (EDIA)". As part of its strategy, it stated, "senior leaders are undergoing a full training programme on this topic with individual coaching".

The university also responded on behalf of Schröder, saying that he has never "denied the issues of racism in higher education. He has introduced many quite radical measures in his faculty to address how we attract and support talent from diverse backgrounds". The statement adds: "As soon as Professor Schröder realized that he had upset Professor Jackson he apologized to him for any unintentional upset that he may have caused."

Jackson has since left the university, and says that the incident contributed to his decision to do so. He now works for Jacobs, an engineering consultancy in Manchester.

But, he says, he still receives e-mails from the university's human-resources department accusing him of putting out a narrative on Twitter that is "not indicative of where we are, or were", and that "generated some unhelpful perspectives". In Jackson's opinion, the university could clear up any disagreements about what happened by making the findings of their investigation public.

"Instead of using energy to engage with the problem and the people in their own institution, they're spending more time trying to minimize public discussion around the incident," Jackson says. "I think that still speaks of a desire to control the narrative – to burnish their image as a progressive institute."

The University of Manchester representative refuted any claims of an attempt to discredit Jackson: "There was no attempt or intention to malign Professor Jackson or his views but rather to engage with him and secure his advice and help on EDIA which is extremely important to us. Disappointingly, Professor Jackson did not wish to do this."

Materials scientist Ben Britton, a former colleague of Jackson at Imperial College London and a close friend, says that the episode has shattered Jackson's faith in academia being a supportive environment.

He adds that for an external observer, "this is a clear example of the 'minority tax', whereby members of marginalized groups are brought in and asked to fix the problems that majority groups have created".

Jackson says there's a much better way for institutions to engage with racism. "It's to say, 'This happens in our own shop. We're not going to stand for it, and we've disciplined the people involved.' It builds confidence in the staff who are there, as well as people in the future who might want to go there."

CHRISTIAN CASSIEL FOR *NATURE*

Christopher Jackson left academia in part because of an unsupportive environment.

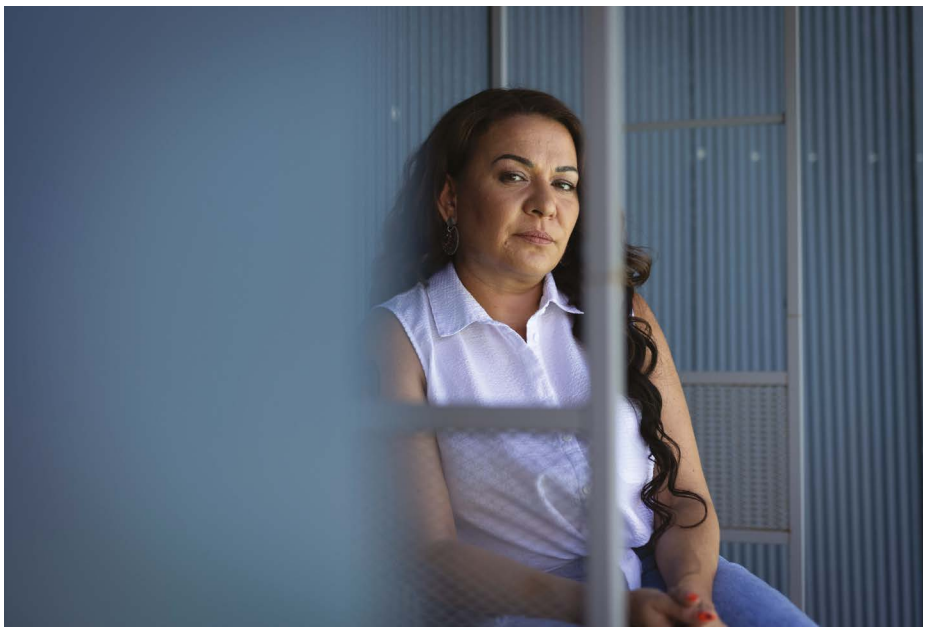
CHELSEA WATEGO
FINDING SPACE FOR GROWTH

By Smriti Mallapaty

Chelsea Watego and her team called it the bunker – a cramped workspace directly opposite the toilets at the University of Queensland in Brisbane, Australia. Up to eight members of staff would squeeze into two rooms, rat traps at their feet. A long bench running along the length of the wall provided desk space, and the printer was often jammed. Poorly insulated, the rooms that the university had assigned to them in 2018 were cold in winter and hot in summer.

Watego, an Indigenous-health researcher and Munanjahli and South Sea Islander woman, had just won a prestigious grant for early-career researchers from one of the country's major research-funding agencies, the Australian Research Council (ARC), and she would soon become an associate professor. With the funds, worth some Aus$400,000 (around US$300,000 at the time), she planned to study the role of race in Indigenous public health.

Then, in 2020, Watego won an even larger ARC grant, worth nearly Aus$1.8 million,



DAVID KELLY/*GUARDIAN*/EYEVINE

Chelsea Watego says that the fight against racism has affected her health.

> "I BOUGHT INTO THE IDEA OF ACADEMIC EXCELLENCE OFFERING SOME PROTECTION."

to establish a new field — Indigenist health humanities. She and her team moved to an old building that leaked, into an office up three flights of stairs. Her space was still nowhere near the school or the faculty to which she belonged. When a woman of colour in a neighbouring office revealed that she had previously filed a discrimination case against the university, it clarified Watego's views on the accommodation. The university, she says, was sending her a message: "There's no space for us in these institutions."

Watego says that she detailed the poor working conditions in a 2019 race- and sex-discrimination complaint against the University of Queensland, which centred on her recruitment to a leadership position. The university told *Nature* that it would not comment on individual staff matters. It outlined its initiatives to increase diversity, but acknowledged that it needed to do more to foster "opportunities for and research by Aboriginal and Torres Strait Islander peoples in a supportive environment". As of 2021, just under 1.2% of academic staff members at Australian universities have an Indigenous background — that's less than half the proportion of Indigenous people in the wider, working-age population.

Last year, Watego says she dropped the case against the University of Queensland ahead of it going to court. She says that was mostly because of a lack — in her opinion — of legal support from her union. The National Tertiary Education Union did not respond to specific questions about the case, but, in a public statement last year, it said that it disagreed with Watego's characterization and that it had given her "considered and professional advice" on her claim. Watego says she eventually quit the University of Queensland and joined Queensland University of Technology (QUT), also in Brisbane, where she feels included.

Watego's scholarship on Indigenous health gives language to the "insidious ways in which racism has an impact on our lives", says Lisa Whop, an epidemiologist and Torres Strait Islander at the Australian National University in Canberra, who is a collaborator on the 2020 ARC grant, and calls Watego a friend and sister. "She is the thought leader of our generation."

"Chelsea has, both intellectually and personally through her politics, been an exemplar of the anti-racist researcher," says David Singh, a long-time collaborator who studies race and racism in public health, also at QUT.

But by tackling racism head on, Watego says her work seems to pose a threat to the institutions that house it. And, she says, her research must address race as an intellectual project. "I have a responsibility to my own people," Watego says. Singh says that the backlash faced by researchers who "take the fight to their oppressors" can be fierce, exerting a serious toll on their physical and mental health, and can even lead to burnout.

Watego has faced strong resistance, and devising strategies around that is exhausting, she says. She is sometimes seen as a 'radical' researcher or a 'difficult' and 'antagonistic' person, and at the University of Queensland, she says she was excluded from regular staff meetings and Indigenous events, such as sashing ceremonies for graduating students. She describes several instances in which she was invited to write articles for a journal, but after peer review and legal scrutiny, the works were not published, and she had to find new venues for them.

In her writing, Watego often describes how her experience of racism in academia wore her down. "I bought into the idea of academic excellence offering some protection from racial violence in the workplace. And I would come to learn that that was not the case," she says. "That's what broke me."

The stress manifested in many ways — in weight gain, high blood pressure and a tendency to grind her teeth at night, to the point that one fell out. It has also cost her her marriage, and the separation from her husband took a toll on her five children. But, she says, those experiencing racial violence outside academic institutions have it much harder. And now, at QUT, Watego finally feels her work is valued, especially by the Indigenous leadership. She and her colleagues have their own office space, with extra desks to invite new staff members and students. "I don't feel like I'm a problem to be managed," she says. Instead, "there's proactive planning around creating space for growth".

NADIA SAM-AGUDU DEMANDING DUE RESPECT

By Abdullahi Tsanni

Nadia Sam-Agudu was 21 when she had her first direct experience of racism. She had just arrived in the United States from Ghana in 1994, with dreams of pursuing a medical career. But a roommate at the University of Virginia in Charlottesville — a white woman — barely acknowledged her presence and wouldn't let her use her computer or sit on her bed.

"I was treated as if I was dirty," says Sam-Agudu. That was just the start: she experienced racism all through her US academic and clinical training. At Mayo Medical School in Rochester, Minnesota and during a residency and fellowship at the University of Minnesota, Minneapolis, she says, some supervisors gave more time and attention to white male colleagues and "barely spoke to me". It nearly derailed her quest to improve health care for children in Africa.

She saw the difference in how she was treated compared with white colleagues. "I

was the only Black African woman, so I could tell," she says.

Sam-Agudu persevered and rose through the ranks. Now an associate professor of paediatrics at the University of Maryland School of Medicine in Baltimore, she also serves as senior technical adviser for paediatric and adolescent HIV at the Institute of Human Virology in Abuja, Nigeria.

The things that threaten to chip away at her confidence and resolve, however, have never gone away. "Racism makes you feel 'less' — like you don't belong in that space," says Sam-Agudu. It kills the motivation, passion and confidence that researchers need to pursue their careers, she says. And that's why, when someone treats her disrespectfully, Sam-Agudu wonders whether they are doing so because it's the norm in academia or because they presume a Black African to be incompetent.

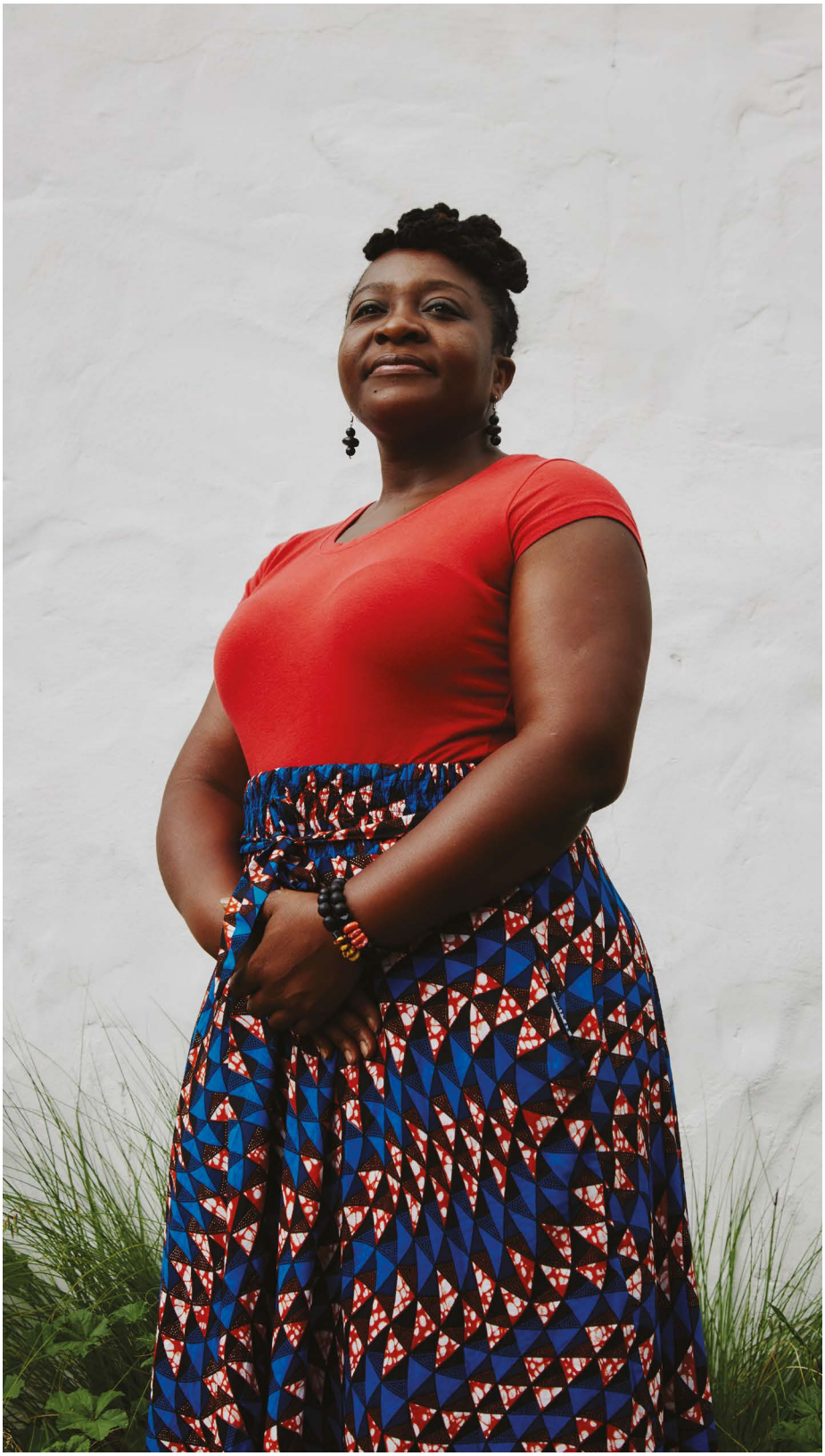
When she has been involved in implementing public-health programmes across Africa, for example, some white colleagues have doubted and talked down to her, she says, and they've ignored the perspective and suggestions she brings. Many public-health programmes in Africa are funded by foreign donors and international organizations. "The relationship becomes paternalistic," says Sam-Agudu. She often finds that people with less experience and less relevant credentials than herself are "talking to us in a way that infantilizes us — as if we are children".

One instance that sticks with her was an e-mail thread in which she discussed some unpublished research with her co-authors. Sam-Agudu raised the need for them to explain the ethics approach for consent in the manuscript. According to Sam-Agudu: "All this person had to do was confirm this and state it in the affirmative." Instead, she received a snide response that she felt belittled her. "[It] was uncalled for and disrespectful," she says. No one on the thread replied to back her up or offer support.

Sam-Agudu says that she is less likely to encounter such condescending responses when she uses her US affiliation in e-mails or when applying for research funding.

Madhukar Pai, associate director of the McGill International TB Centre in Montreal, Canada, describes Sam-Agudu as a "passionate advocate for a more just, diverse, inclusive and equitable global-health architecture". He notes that she's also reflective about her own privilege as someone with affiliations in both the United States and Africa, and is careful not to perpetrate harm against Africans in the work that she does.

African researchers can find themselves in precarious positions when they speak out about racism in encounters with funders and research institutions in the global north. But Sam-Agudu says she's not afraid to speak up.



CHRIS DE BEER-PROCTER FOR *NATURE*

Nadia Sam-Agudu dreamt of helping children in Africa.

At the same time, she admits that it can be tricky to tell the difference between constructive criticism and racist microaggressions. "It's a lot of effort to go through this," she says.

Thinking back to her first experiences of racism in academia, Sam-Agudu doesn't think that much has changed: "Racism is not gone out of science; it's still there. If you haven't experienced it, think about the privileges you might have that may shield you from these experiences," she says. "We shouldn't get comfortable — it's a systemic issue."