



Theo (Chelsea) Newbold is doing a PhD in plant pathology, focusing on maize (corn).

THE STING OF SIZEISM AT WORK

Researchers of size say weight bias is harming their careers and well-being. Workplace changes can reduce the stigma. **By Carrie Arnold**

Theo (Chelsea) Newbold's first chemistry assignment should have been easy: buy a white laboratory coat. But they couldn't find one that fitted at the campus shop, which stocked only up to a size XL. Newbold needed a 3XL. Without a lab coat, they couldn't start their chemistry class. "It felt very exclusionary," Newbold says. "These are relatively small things that demonstrate that you belong there."

The shop offered to order the larger size for

Newbold, but it would take time – time that they didn't have, and which their classmates didn't have to worry about. It was Newbold's first introduction to science's size bias.

"People don't take me as seriously as a bigger person," says Newbold, who is now a PhD candidate in plant pathology at Pennsylvania State University in University Park.

Stigma against fatness is everywhere, and science is no exception. In a world overflowing with messages about the dangers of

obesity and never-ending lists of ways to lose weight, it should be no surprise that weight bias is as prominent in science as in every other field, said Cat Pausé, a sociologist and fat activist who was at Massey University in Palmerston North, New Zealand. (Pausé was interviewed for this article before her sudden death in March.)

Yet weight bias – defined as prejudice towards people with higher body weight – has received little attention. Whereas searching for Twitter hashtags such as #queerinSTEM and #blackinSTEM reveals thousands of tweets, #fatinSTEM and #fatinacademia each yield only a single message – a sign that even those researchers who are comfortable with their size face significant stigma.

The fact that weight bias hasn't received much consideration is no shock to Kate Tyrol, a cyberpsychologist at the New Jersey Institute of Technology in Newark. "Academics love to pay lip service to [other types of] diversity, less so to size diversity," Tyrol says. What's more, many of her colleagues justify their bias using such reasoning as 'obesity is unhealthy'.

Tyrol, Pausé and others have been working as part of a small but lively movement to encourage scientists to welcome people of all body sizes. Misperceptions that body size is a matter of willpower help to fuel bias against overweight people, a pervasive but harmful view that damages not only careers and productivity, but also mental and physical health.

Making adjustments to workplace attitudes and using set-ups that would improve a researcher's everyday life and productivity are not huge asks, Newbold says (see 'Welcoming all weights to workspaces'). Such changes would also help to make science accessible to everyone.

Bias against bigger bodies

Many societies around the world are steeped in bias and stigma against fatness. Psychologists found that children in New Zealand had developed a preference for thinner or 'average-sized' bodies even before they turned three years old'. And this preference doesn't change as they get older, say Tyrol and other scientists who identify as fat. Many say that weight-based teasing and bullying were a part of their daily lives from primary school onwards.

The effects of weight bias can be even worse in adults. More than 80% of Americans have a body mass index (BMI) that is above 25 (defined as 'overweight' by the US National Institutes of Health) and more than 50% have a

Welcoming all weights to workspaces

Actions by colleagues can make people of all sizes feel included.

Creating a workplace that is accepting of all body sizes is straightforward, says Robert Rosencrans, a neuroendocrinology MD–PhD student at the University of Alabama at Birmingham — by bucking the narrative around weight, health and morality. He makes a point never to compliment weight loss or comment on another person's body. He also refuses to pass judgement on food choices or eating habits. As a result, he's managed to decrease the amount of talk about food and bodies in his environment — a change that also benefits those with food sensitivities and eating disorders.

Other aspects include changes to the physical environment. The more a person weighs, the more strain their joints are under, Rosencrans says, which mean knees and ankles can tire quickly. Padded or gel-filled floor mats can help, and increase comfort for anyone standing for hours at a fume hood or laboratory bench. Rosencrans says that some of his colleagues hesitate to ask for such accommodations because they fear that people in the department — and even their principal investigator — will blame them for their fatness. They often think it's easier to suffer in silence, he says.

Group leaders should ensure that lab ergonomic designs suit all body shapes and sizes by asking members what furniture they would like. Provide chairs that can support larger bodies and that don't have arm rests, and leave space around tables and chairs so that everyone can navigate with ease and not feel cramped.

Similarly, provide personal protective equipment and field clothing that fits larger bodies. In a Facebook group for ecologists, one frequent question is where to find plus-size field gear. Although plus-size fashion has improved in the past two decades, options such as cargo trousers, waders and jackets for women over a US size 14–16 (European size 44–46) remain hard to find. Theo (Chelsea) Newbold, a plant pathology PhD student at Pennsylvania State University in University Park, says that otherwise, the entire process of sourcing larger-sized lab wear sends the clear message that “you aren't welcome here”.

BMI above 30 (defined as 'obese'). Despite this, weight discrimination is rampant throughout US society: in one study, nearly 60% of adults reported experiencing stigma as a result of their body size².

This isn't just a US phenomenon, either. Average BMIs in many parts of the world have increased over the past few decades. What has also changed in the United States and a handful of other nations, including Australia, New Zealand and the United Kingdom, is greater recognition that weight bias is a problem, and many are taking nascent steps to address it.

To Robert Rosencrans, an MD–PhD student studying neuroendocrinology at the University of Alabama at Birmingham, the problem begins with the language used to discuss the issue. It's commonly referred to as the obesity epidemic, yet, Rosencrans says, the issue doesn't meet the true definition of an epidemic. He doesn't deny that average body weights around the world have risen, but “there's never been exponential growth in the number of people with a BMI over some arbitrary cut-off point”, Rosencrans says. Yet calling it an epidemic frames larger people as inherently diseased and a menace, he says.

The way in which public-health interventions address obesity is also problematic. Many prescribe education to help people lose weight, teaching them how to select lower-calorie items from menus or to bake dishes instead of frying them. Tyrol says that this framework probably explains why so many of her friends tend to view fat people as being somehow not bright enough to maintain a lower BMI.

“It's not thoughtful or kind to suggest that you can tell from someone's body composition what they know,” she says.

Adding to the problem is the misperception that everyone can control their weight. By this flawed logic, if someone is larger, it must be because they eat too much and exercise too little. By extension, then, many assume that losing weight should simply be a matter of eating less and exercising more. Mads Tang-Christensen is familiar with this line of thinking. Before leaving his role as scientific vice-president at Novo Nordisk in Copenhagen last month, he had spent several decades working in obesity research to understand the neurobiology of appetite regulation. And as someone diagnosed with obesity, he's all too aware that he, like many overweight individuals, can follow medical directions to the letter and yet remain heavy.

Tang-Christensen says he's never personally experienced weight stigma while at work, where his colleagues are on the cutting edge of obesity research. Studies are uncovering the complicated nature of appetite (how hungry or satiated someone feels) and metabolism (how the body uses the food that has been eaten). Interactions between these two processes help

to control body size³ — and so it is much more complex than just balancing ‘calories in’ with ‘calories out’.

“I've been living with obesity my whole life,” he says. “It gives me some legitimacy when I talk to a crowd” about the company's research.

Even a wealth of research demonstrating the genetic and environmental factors that influence body size hasn't stopped weight bias in the workplace. People who are overweight are often viewed as lacking willpower⁴ and less employable⁵ than their thinner counterparts. As a result, they are less likely than slimmer colleagues to be called back for an interview, to be offered a position and to be paid similarly⁶. All of this hampers people's ability to advance in their careers.

Another study found that negative stereotypes about fatness made workplace training less effective for larger individuals⁷. The bias persists at management levels, too — researchers have shown that a larger waist circumference in business executives was associated with negative reviews of leadership skills and personality traits⁸. Weight discrimination is also inextricably linked to a person's gender. One study found that women were 16 times more likely than men to experience weight-based discrimination at work⁹. (Although gender is neither binary nor fixed, the study tracked only these two identities.)

Academia is no exception when it comes to workplace weight stigma, yet the bias rarely factors in promotion discussions. For example, although the American Sociology Association has argued that relying on student evaluations of teaching for decisions about tenure is discriminatory when it comes to race, ethnicity, sex and gender, weight does not get a mention. Because overweight individuals don't fit the stereotype of what a professor looks like¹⁰, weight bias might affect students' evaluation scores of their teachers.

Weight bias takes a toll

The impacts of implicit bias on factors such as hiring, firing, tenure, promotion and salary decisions are well documented. However, other, more subtle, practices make science less welcoming to fat people.

Pausé recounted a subtle but pervasive undertone of bias at morning tea breaks, when thinner colleagues would discuss wanting to lose weight in her presence, and referenced being “naughty” if they ate cake, and so on. Pausé sensed the message to her was clear: ‘We don't want to look like you, and we will jump through an infinite number of hoops to keep that from happening’. Feeling unwelcome, Pausé stopped attending. Missing out on such informal networking opportunities can have a ripple effect throughout a scientist's career, because they lose out on building bonds with co-workers and hearing about



Mads Tang-Christensen, who has an obesity diagnosis, studied the neurobiology of appetite.

new opportunities. As a result, she said, “The number of us that actually make it all the way through to finish our PhDs and become scientists is quite small.”

Not all weight bias is subtle. In 2013, a Twitterstorm erupted when Geoffrey Miller, a psychologist at the University of New Mexico in Albuquerque, tweeted that if obese people didn’t have the willpower to give up carbohydrates, they would never have the willpower to finish their PhD dissertation. Pausé was infuriated, but not surprised.

“It was a lovely overt demonstration of the stigma that people face in [academia],” she said. “While he was the one saying it out loud, he wasn’t saying something that’s very different from what most people think.” Miller, who apologized and deleted the tweet, was formally censured by the university.

Weight stigma from health-care providers can also affect scientists’ working lives. As a bioethicist at the University of Texas in Houston, Keisha Ray spends her professional life addressing how racial biases influence the health of Black Americans. Although her career gives her a unique insight into these biases, Ray says that she and her colleagues experience an added stigma: because they work in health care and science, they ‘shouldn’t’ be fat because they ‘know better’. When she consulted her physician in 2019 about an unexplained weight gain of more than 6 kilograms, the doctor suspected that it was due to poor eating habits – despite Ray’s assertions to the contrary.

“I’ve had to work harder to be an advocate for my own care as a patient because I am fat and Black and a woman,” she says.

The physician’s response only compounded Ray’s distress about her weight gain and made it hard for her to focus. All she could think about, Ray says, was what she might have done wrong. The stress from ongoing weight bias can have a multitude of physical and

“There was no one fat in my part of the tech world except for me.”

psychological effects, including increases in the stress hormone cortisol, metabolic problems such as diabetes, physical mobility issues and depression and anxiety¹¹.

Such discrimination against and hatred of fatness creates a self-fulfilling prophecy for larger-bodied individuals seeking higher education and job promotion, Ray says. With so few role models, people of size begin to think that achievements such as a PhD or an executive position are out of reach. This lack of diversity then implies to their thinner counterparts that, in fact, larger individuals really don’t have what it takes, says Ray. To help counter this narrative, Pausé started a Tumblr blog in 2013 called Fuck Yeah! Fat PhDs. The blog includes more than 150 photos of PhD candidates or holders who identify as fat. Pausé said that such a resource, filled with

role models for aspiring scholars, provides pushback against the idea that a person can be successful only once they lose weight.

Issues and solutions

The challenges a larger person faces intersect with many of their other identities. As a Black woman, Ray’s experiences are different from those of Tang-Christensen, who is a white man, and from those of Newbold, who identifies as non-binary and queer. Ray also points out that she has a certain amount of financial and educational privilege that helps to shield her from some of the weight bias experienced by others.

As a young computer programmer, Tyrol had come straight from her undergraduate studies to work at a small, private company. She soon realized that the professional world showed a distinct preference for bodies that conformed to various social rules: they had light skin, they were thin (but not too thin), they styled their hair a certain way and wore the ‘right’ clothes. Tyrol didn’t fit in with those norms – and didn’t feel that she should.

“If I had been a male programmer, I don’t think my weight would have mattered at all,” Tyrol says. But, she says, as an overweight woman, she had the impression that her colleagues didn’t value her presence, and the experience was one factor that ultimately led her to pursue a PhD. “There was no one fat in my part of the tech world except for me.”

When other identity-based biases combine with the public’s fat-shaming attitudes, it can make overweight scientists feel like outsiders. But, researchers of size say, colleagues can do small things to act as allies and be inclusive of larger peers, such as adjusting the work environment or avoiding making personal remarks. To Tyrol, just hiring more people of size isn’t enough. Even seemingly innocuous comments by colleagues about ‘naughty’ dessert-eating or well-meaning encouragements to exercise allow weight bias to persist.

“What’s going to fix the problems of representation in our country is people looking deep and hard inside themselves and seeing what they are doing that’s perpetuating sizeism,” she says.

Carrie Arnold is a freelance writer based near Richmond, Virginia.

- Ruffman, T., O’Brien, K. S., Taumoepeau, M., Latner, J. D. & Hunter, J. A. *J. Exp. Child Psychol.* **142**, 195–202 (2016).
- Prunty, A., Clark, M. K., Hahn, A., Edmonds, S. & O’Shea, A. *Obes. Res. Clin. Pract.* **14**, 421–427 (2020).
- Montégut, L., Lopez-Otin, C., Magnan, C. & Kroemer, G. *Trends Endocrinol. Metab.* **32**, 264–294 (2021).
- Puhl, R. et al. *Int. J. Obes.* **39**, 1166–1173 (2015).
- Flint, S. W. et al. *Front. Psychol.* **7**, 647 (2016).
- Giel, K. E., Thiel, A., Teufel, M., Mayer, J. & Zipfel, S. *Obes. Facts* **3**, 33–40 (2010).
- Shapiro, J. R., King, E. B. & Quiñones, M. A. *J. Appl. Psychol.* **92**, 239–249 (2007).
- King, E. B. et al. *Hum. Res. Manage.* **55**, 283–300 (2016).
- Roehling, M. V., Roehling, P. V. & Pichler, S. *J. Vocat. Behav.* **71**, 300–318 (2007).
- Fisahnick, C. *Feminist Teach.* **17**, 237–255 (2007).
- Tomiyama, A. J. et al. *BMC Med.* **16**, 123 (2018).