This is the podcast for the journal Neuropsychopharmacology, I’m Cynthia Graber.

It’s clear there are diversity issues in science, both in terms of who does or doesn’t receive research grants, as well as who is or isn’t represented at the highest levels of scientific research. When Caleb Weinreb and Daphne Sun began their PhD program at Harvard University Medical School in systems biology, they took this on as an issue. They learned from others in their department, and they eventually created a course on the topic for incoming first year PhD students.

As they worked on improving their course over the years, they saw that in science there was a focus on narrowing racial gaps by correcting for implicit bias. For example, there had been a well-known study in which resumes with stereotypically African-American names weren’t considered as seriously as those with stereotypically white names. But the two PhD students realized that efforts to overcome such implicit bias weren’t moving the needle. They recently published a perspective paper in the journal Neuropsychopharmacology called “To dismantle structural racism in science, scientists need to learn how it works.” Caleb Weinreb is now a post-doc in the neuroscience department at Harvard Medical School.

Dr. Weinreb, what was done to try to account for implicit bias, and why do you write that it wasn’t working?

CW: They did a replication of that for NIH grant review, where there's historically been this huge disparity in the reward rate rates. And they found that in that particular case, this result didn't replicate. So changing the name to be something that suggested a Black person versus a white person didn't actually affect the likelihood that the grant would get funded.

It's still unclear how much bias contributes to a lot of these disparities. But what is clear is that at least in the case of NIH grant funding, efforts to do anonymization just simply don't work. Whereas efforts to change things structurally have worked with really immediate effect.

Before we get to changing things structurally, let’s first talk about what these structural problems are. You mention one example in the paper, and it’s that fields where underrepresented minority scientists tend to be over-represented, such as studying health disparities in the US, these have historically been seriously underfunded, and that then affects how many non-white scientists receive grants. What else have you found?

CW: So another system that we discussed in the article is the way that scientific merit is judged based on a person's citations and number of papers and each index, et cetera. It's not inherently racist, you know, it's not like saying, ‘I'm going to hire someone based on their number of citations,’a like, you could just be like, ah, that's racist. But it has a kind of pernicious way of exacerbating many of the power imbalances that already exist.

So for example if we go back to the example of funding for minority health and health disparities, if you're in a field which has been systematically underfunded for decades, you'll have had fewer opportunities to get grants, that may result in fewer papers. And also the whole field is artificially small because of the restriction in funding. And so the citations on your papers may be correspondingly lower.

Another systemic issue you bring up is that often people from marginalized communities do the lions share of work in fields such as diversity, equity and inclusion mentoring, which aren’t considered for hiring or in grants, when the focus is on publications and citations.

So, if addressing implicit bias hasn’t been working, what are some interventions that have been moving the needle on these bigger more systemic issues?

CW: So one thing that's a really positive change that's happened in the last couple years is a huge surge in funding for minority health and health disparities, partly as a result of the differences that became evident in the susceptibility to severe Covid. I mean, that's generally been a really amazing thing.

However, one sort of ironic thing that's happened is that there's also been a surge of white researchers into the field of minority health and health disparities. They sort of arrived with their fancy credentials and lots of citations, and then hoover up many of the grants. Nonetheless, of course, that's been a really amazing and positive development.

So another positive thing that's happened is in general, there's broad dissatisfaction with the way that scientific merit is evaluated based on citations and fancy journals that I think goes well beyond the impact it has on racial equity. So there have been movements across the world to adopt other frameworks for judging scientists. One of the biggest examples is the San Francisco declaration on research assessment. And that includes stuff like emphasizing the quality of research over these quantitative metrics and encouraging collaboration and open science. And that started to be signed by a lot of institutions around the world.

Another issue you raise in the perspective piece is the fact that there’s a lack of structure in graduate education, and that this privileges people who understand more coded ways to communicate and get ahead. Has anything worked to combat this?

CW: Yeah, so one example of one of these interventions that was really well-studied is the UC Berkeley chemistry department. So they noticed racial disparity in the time to publish your first paper as a PhD student. And after doing a kind of deep dive into why that was happening, they uncovered that this kind of implicit knowledge of how to work the system and what was expected of a person was contributing to why certain people met that benchmark and others didn't.

So they implemented a pretty simple set of changes to the structure of the program that made those expectations explicit. So they clearly define milestones for progress in research, and they ensured that the whole community agreed on those milestones. They communicated them clearly to all the students as they came in.

When they followed up a couple years later, they saw that it basically closed the gap on the time to publish a first paper and on the number of people who met that milestone from different backgrounds.

What are some other programs you’ve found that seem to be successful at addressing structural disparities — in the paper you mention the NIH First initiative, what does that do?

CW: So that was a big program that was launched under the auspices of UNITE, which is this huge NIH effort to address racial disparity in science in the United States. And the first initiative was a grant program for universities to hire faculty who would explicitly be able to enhance diversity, equity and inclusion and contribute to the community of the university they were part of, in addition to doing excellent science. So of the faculty who have been hired, roughly two thirds were women and half were Black or Hispanic.

And also another component of that was to do cluster hiring. So you could hire multiple faculty at once, and that would create a critical mass of people who could really enhance the quality of the department and up the level of mentorship. And so that's been that's been an intervention that has really led to quantifiable changes.

There's one more program that I wanted to shout out because it's co-led by my own PI, which is the PiNBAC program at Harvard Medical School. So that's a, a post baccalaureate program that has paid research experiences for people who are, you know, out of undergrad and planning in the future to apply to PhD programs. And it brings them into a lab and so they contribute to research, but then it also has a lot of educational programming around, you know, how to program, how to do scientific computing, how to navigate, you know, the research world, how to pick a project, how to pick a mentor.

So the classes so far of PiNBAC program have been very diverse and they have gone on to at a really high rate enter PhD programs in neuroscience. That's a really amazing program that's just been really effective.

I have a kind of combined question for you, and that’s what is your goal with publishing this perspective, and what’s your goal for publishing it specifically in the journal Neuropsychopharmacology?

Look, we were so lucky to have learned from people in our department, in our program, in our university, about these different kinds of structural forces that affect who can get ahead in research. And we want other people to have that opportunity. So we're really excited for this kind of knowledge to become part of scientific training.

For neuropsychopharmacology in particular, I wanted to speak to my colleagues and future colleagues. There's also — during the review process, one of the reviewers pointed us to this helpful article that talked about many of the ways that the same kind of default of focusing on individual bias and individual effects can bias research into neuropsychopharmacology. And in particular that researchers in neuropsychopharmacology, this article argues, tend to focus on individual factors like how the individual experience of racism can cause racism-related stress and health effects. And that research often will recommend solutions that are very individual based, like, this person needs to take a drug, or this person needs to go to therapy, as opposed to taking a wider lens that institutional racism is contributing to people's mental health. And that it's only through changing those institutions that many of those problems could be fixed.

This is the podcast for the journal Neuropsychopharmacology. To read the article discussed in the podcast, go to [www.nature.com/npp](http://www.nature.com/npp). I’m Cynthia Graber.