CAREERS

POSTDOCS Better pay and benefits still needed, says advocacy group **p.369**

BLOG Personal stories and careers counsel **http://blogs.nature.com/naturejobs**

NATUREJOBS For the latest career listings and advice **www.naturejobs.com**

ILLUSTRATIONS BY SALLY ELFORD/GETTY

HUMAN BEHAVIOUR

A kinder kind of science

Many researchers are calling for an end to the dominant winner–takes–all approach.

Scientists in New Zealand held the first 'Kindness in Science' workshop in December 2017 at the University of Auckland, hoping to kick-start a movement that will offer a kinder, gentler and more inclusive scientific culture. The group's mantra is "Everyone here is smart and kind — don't distinguish yourself by being otherwise."

At a time of great global divisiveness, moves are afoot to make the research culture more welcoming, respectful and responsible. Kindness, the workshop participants argue, should apply to the tone of peer review, to conference behaviour and to laboratory etiquette, among other areas. The winner-takes-all model is not the only way to make big breakthroughs in research, they suggest.

The group's working definition of kindness in science is "an inclusive approach that fosters diversity, respect, well-being and openness, leading to better science outcomes".

Nature interviewed seven researchers at various career stages to ask what such a culture shift might mean for them.

TAMMY STEEVES

Harness the power of the collective

A leader of the New Zealand Kindness in Science movement and a conservation geneticist at the University of Canterbury in Christchurch.

The idea for the movement came when three of us were reflecting on an essay about kindness in science, written in September 2016 by Emily Bernhardt, who at the time was president of the Society for Freshwater Science. Responding in part to sexist comments made to female junior researchers in her field, she urged colleagues to "rack up acts of intentional scientific kindness".

For me, as a mentor, this is about making space at the science table, creating an inclusive place for early-career scientists. Why does it matter? I believe that the inclusion of diverse perspectives is critical because it brings fresh approaches to tough scientific problems.

About a month after I read the essay, I noticed an opinion piece in *Nature* (T. Serio, *Nature* **532,** 415; 2016) on subtly sexist remarks towards women in science. The feedback it generated — towards a scientist who was talking about her own experience — was vile. Many commenters dismissed her examples of microaggression as misunderstandings. One accused her of being an "oversensitive damsel". I thought, "We have something positive to contribute here."

My colleagues and I want to get a global movement going by starting local. We envisage a diverse collective of scientists leading a culture shift that embeds kindness in how scientists work and how science is conducted. I see it as a shift away from empire building towards village growing. Currently, the vast majority of the science pie rewards the building of empires — that is, the model that has scientists clambering over one another to reach the top. That model can lead to amazing science, but it ▶

leaves only a sliver for people who approach and do their science in a very different way.

My intent is not to convince empire builders not to build empires, but rather to show the science community that there is another way. And I'm not talking about growing villages where everyone's singing 'Kumbaya' and holding hands. Rather, I mean harnessing the power of the collective to achieve better science outcomes. Collective efforts are rarely rewarded. That needs to change.

For my own research group, it works for us to run it as a collective. Our meetings allow students and postdocs to say what they want to achieve, to be in control of what they do and to take ownership of their research. Also, when things aren't going to plan, the collective response isn't, "You're doing it wrong", but "How can we help?" We have really high standards, and we meet these as a group by helping one another to meet them individually. If I want to foster a community of smart and kind scientists, I've got to give them the space to be just that.

I believe that kindness in science will lead to better science outcomes. With more scientists working in a truly inclusive way, we will achieve more.

JAMES ATARIA
Collaboration is crucial

Ecotoxicologist at the Bio-Protection Research Centre, Lincoln University, Christchurch, New Zealand; deputy director, Ngā Pae o te Māramatanga, New Zealand's Māori Centre of Research Excellence in Auckland.

Science is a cut-throat enterprise. But I've always been of the view that we get so much more done working together than against each other. From a cultural perspective, as a Maori researcher, I'm all about collaboration and working together. So I really see the notion of kindness in science as being a positive thing for bringing more emerging Maori researchers into science.

There's room in science for being more collaborative. In New Zealand, our government-funded Crown Research Institutes are expected to turn a profit. In a system where financial viability is all-important, science can take a backseat in some instances. Such a system also creates an environment in which competition runs rife.

But I see benefits in a more collaborative environment, with better outcomes across the board. For example, working on a Mataura River project in a southern region of New Zealand, at the outset we decided to involve local Maori organizations, as well as representatives of regional and

central government, to address their concerns about the river ecosystem.

In the past, researchers might have just put their heads down, done their research and published it or put out a report. But our research was much more embedded in the community.

We decided to sleep, eat and work in the headquarters of the local *rūnanga*, or Maori governance organization. We had opportunities to engage with parts of the community that we wouldn't normally have any reason to associate with, and they asked us to explain what we were doing. When researchers have a really strong social or community connection, they can see why they are doing the research.

Kindness is quite an evocative term, but I see it come through when researchers experience how their work is changing a community. Likewise, from the community's perspective, being at the decision-making table and co-generating research is empowering, and is a form of kindness. We've got these concerns, you've got expertise: how can we pair them together? Collaboration with communities can both create conditions for kind science and produce good scientific outcomes.

JAMES DOTY
Sympathy lets creativity flourish

Neurosurgeon, and founder and director of the Center for Compassion and Altruism Research and Education at Stanford University School of Medicine in Palo Alto, California.

There's an increasing body of evidence that how we behave towards others matters. Unfortunately, what is required to succeed in academic science is antithetical to being kind.

A lot of people will refer to Darwin, saying it's dog-eat-dog and that only the strongest survive. But what Darwin really said is, it's the survival of the most sympathetic (go.nature.com/2lsloz6). In every society, it's the efforts of those who are most sympathetic and caring that result in the long-term survival of the species.

When you care, or demonstrate caring behaviours, the hormone oxytocin is released and gives the brain a sense of calmness and connection. When you feel threatened, the fight-or-freeze system is activated instead, and the executive control function and creativity areas of your brain shut down. As a result, you don't often pick the best behaviour — you pick one that you think will allow you to survive that moment.

In the hypercompetitive environments of academia and business, every step involves ruthlessness. The competitiveness never ends. But people's stress response is always engaged. This has a huge negative effect on their health.

We know that when the work environment of a business becomes kind, compassionate and thoughtful, it reduces stress in employees and results in people being more open, more discerning and less judgemental. The same should apply in academia, enabling more creative, thoughtful research and making researchers more productive.

DAVID COLQUHOUN
'Publish or perish' is a foolish fetish

Biophysicist at University College London, UK.

Excessive competition between individuals, journals and universities has reached levels where it's endangering the reputation of science and hurting people. Several years ago, I heard a BBC morning news programme in which the host asked a researcher, "Is this a real breakthrough or are you applying for a new grant, or are you starting a spin-out company?" That's a terrible reputation for science to have.

Pressure to publish, whether there's anything to say or not, is an incentive to cut corners, and occasionally to be outright dishonest. It is common to have big labs headed by people who can only be described as jerks. Graduate students and postdocs are often used as slaves, working for the glorification of their lab head and their university. It's not unknown for junior people to be bullied by lab heads to get a particular result. The 'publish or perish' obsession reduces the quality of published work, and can even lead to suicides. And the real tragedy is that it's based on metrics that are nonsense. Citations don't measure the quality of research, and rankings don't measure the quality of universities.

The main problem is that there are too many people doing science now. There is bound to be bad behaviour when the available funding

doesn't match the number of people who want it. Funding isn't likely to increase, so what can be done? We need to reduce the number of institutions doing research. That would free up money for the later stages of research and lower the numbers of people applying for grants. However, it's not a very politically viable option.

But we do need a change in culture. There are two reasons to stop the incentives that encourage the jerks: it would increase the quality of research, and it would contribute to the sum of human happiness.

EMILY BERNHARDT
Tone down the criticisms

Ecologist at Duke University in Durham, North Carolina, and author of an essay on kindness in science.

When I began drafting my essay (go.nature.com/2czt3pc), I intended to write a scathing one. But then I realized we needed something more positive. We all need to be more attentive to being kind. The low-level racism and sexism that exist in science do real harm.

Senior people should be calling out bad behaviour: "I think that's a little over the top or unkind." That will make people step back. And saying "Can you back up that statement?" can be quite effective among peers.

Unkindness is rife in the review process, and journal editors can do a lot to help by asking reviewers to tone down their criticisms. I've seen students destroyed by a mean review that insults their intelligence or writing, rather than focusing on the science. First papers are such important things for young scientists, and that first review feels like a statement on their abilities as a human being and a scholar.

There's this idea that it's OK to be an awful person as long as you are brilliant. But there are tons of people who are generous with their time or positive energy and who make academia work better.

BINYAM MOGESSIE
Make mentoring matter

Cell biologist, University of Bristol, UK.

As a new principal investigator, the most important thing for me is to be a member of the lab and not 'the boss'. A lab should be a place for the growth and development of everyone who joins it. If someone needs my support, not just for trouble-shooting experiments but because science is very challenging and demotivating at times, I will tell them, "You should take a week away, go to a conference or give a seminar, and get excited about the science again." As a principal investigator, you need to acknowledge that you have a responsibility for every person you hire.

When you move from a PhD to a postdoc or academic position, no matter how hard you work, you still need a lot of mentoring. The person you are working for must think about your career progression and the things you should be doing — even if that means just taking 10 minutes to sit down with you and find out what you are interested in doing.

Nothing is definite in this business. You can't have an edge on people competing for the same job if you do not know what to expect at the next level. That's when an adviser or a mentor has to step up. If someone is willing to share that information with you, it is really kind.

STEPHANIE GALLA
Build bridges, don't burn them

PhD student in biology, University of Canterbury, Christchurch, New Zealand, and a founder of the Kindness in Science movement.

Being an early-career scientist is a cool time. It's when you get to explore what kind of science you want to study and what kind of scientist you want to be. It sets up the trajectory of your career.

But some things make me ask, do I really fit in here? There are long-lived lab rivalries that affect the quality of the science. That's disheartening. I've also met people who are more possessive about their science and not willing to share their research wisdom, data or code.

Overall, I've been fortunate to work with very kind scientists. I've just come from a meeting with government agriculture researchers who invited me to their lab group to talk about bioinformatics, and they were willing to share their hard-earned wisdom with me.

This helped me to make leaps and bounds in my own research and also led to mutually beneficial conversations on how to best approach shared research questions.

I think kindness is the path forward. I don't want to be a bridge burner, but a bridge builder. That's going to lead to better science.

INTERVIEWS BY KENDALL POWELL

Interviews were edited for clarity and length.

POSTDOCS

Support slowly grows

Academic institutions in the United States have helped to improve life for postdoctoral researchers but changes are still needed, according to a 3 January report from the National Postdoctoral Association (NPA) in Rockville, Maryland, which represents postdocs in the United States and Canada.

Supporting the Needs of Postdocs recommends that postdocs receive higher compensation, equal benefits regardless of how a researcher is classified or funded, and more-generous parental leave.

The report collated results from a 2016 survey completed by 102 of the 190 institutional NPA members that maintain a postdoctoral office on campus. The survey results, published in partnership with Sigma Xi, a researcher association in Research Triangle Park, North Carolina, indicate that 94% of member institutions require that new postdocs and other recruits learn about appointment policies and resources, and that 85% of institutions have an orientation programme that outlines services and amenities available to postdocs.

Postdoc pay rates, however, are less consistent across member institutions, despite federal legislation passed in 2016 that compels employers to either raise the minimum salary for all US hourly workers to US$47,476 a year or offer overtime pay. Survey responses indicate that 77% of institutions pay that rate or are raising their minimum compensation to that level. Just 36% of institutions require annual stipend increases, 43% recommend it and 21% have no policy on the matter, the report says.

Most postdocs receive health-insurance benefits and paid time off, but postdocs who have their own funding often lose access to institutional benefits. This is a continuing point of contention, and the NPA urges institutions to address it.

The report recommends that institutions determine postdoc needs more effectively by gathering information on diversity, disability and disadvantaged backgrounds. It also calls for universities to maintain contact with postdocs after they leave, so as to develop a comprehensive alumni network and to track career pathways. Currently, 45% of institutions carry out exit surveys, and 28% track their postdocs after they leave the institution.

Since 2000, various societies and organizations have published reports on the importance of postdoctoral researchers to the US scientific enterprise and how postdoctoral training can be improved.