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Researchers have found that sharing experiences of mental-health struggles reduces stigma.

MENTAL-HEALTH CRISIS PLAGUES PHDS — THESE INITIATIVES COULD HELP

Communities of researchers worldwide are taking on toxic research cultures.

By Fred Schwaller

In 2019, at a conference in Germany, Wendy Ingram spoke about a grass-roots project aimed at raising awareness of mental-health issues among US researchers. Talking to other attendees, she realized that the problems were "systemic in academia: in every field, in every country".

Studies of researchers globally suggest there is a mental-health crisis in academia. Depression and anxiety are particularly acute for early-career researchers, who uproot their lives every few years, have few long-term job prospects, and must cope with the relentless pressures of science's 'publish or perish' culture.

Driven by a lack of support at their institutions, graduate students and postdocs have begun building their own movements to find solutions. Now, many research centres offer evidence-based mental-health services to assist researchers, often through workshops and providing access to clinical support. Importantly, say researchers, initiatives are beginning to challenge the fundamental structures that reinforce what many call the toxic culture of research.

"Not only are there evidence-based tactics that work, but they are being deployed, and everyone can take advantage of them," says Ingram, the founder and chief executive of Dragonfly Mental Health, a global non-profit advocacy group based in Bradenton, Florida.

"Culture change is the big challenge, and the question is how we move away from the narrative of surviving in academia to one of thriving. The only way it will happen is from the collective actions of many," says Karin Jensen, a researcher in engineering education who conducts research to support faculty members' mental health and well-being at the University of Michigan in Ann Arbor.

Connecting efforts

At the 2019 conference, Ingram realized that grass-roots initiatives trying to help were disconnected. "Engineers and cell biologists were trying to muddle their way through the psychology research. They were constantly reinventing the wheel," she says.

So Ingram co-founded Dragonfly to join "wisdom from all the grass-roots things going on in siloed institutes" into formalized structures.

The organization has grown into a coalition of more than 450 volunteer academics worldwide who offer workshops, training schemes and campaigns to raise awareness of mental-health provisions in academia. It has delivered more than 375 programmes to some 60,000 academics in 32 countries — "with 96% of participants recommending our programmes to colleagues", says Ingram.

The efforts focus on five areas: reducing stigma, improving mental-health literacy, improving supportive skills, encouraging peer-support networks, and creating structures across the research enterprise to take responsibility for mental health.

In addition to working with individual research centres such as the University of California (UC), Berkeley, Dragonfly has delivered workshops to fellows of science-funding agencies such as the Alfred P. Sloan Foundation in New York City and the Pew Charitable Trusts in Philadelphia, Pennsylvania.

Grounded in research

Dragonfly's programmes are evidence-led, says Ingram. "We have studies; nothing handwavy or surface level. We provide actions that can and should be taken." And where evidence is lacking, the organization collaborates on research to investigate solutions. Ingram co-published a 2024 study that found viewing a short film about mental-health challenges in academia reduced stigma around the topic for 92% of the 149 academics who participated (A. R. Devendorf *et al. Psychol. Serv.* https://doi.org/pgtt; 2024).

The film shows senior faculty members talking about their experiences of mental-health conditions or neurodiversity. Kevin Mark, who watched the film during his postdoc at UC Berkeley, says it was the first time he'd seen senior researchers disclose their personal struggles.

Mark, now a cell biologist at the University of Texas Southwestern Medical Center in Dallas, says watching the film helped him learn how to be a scientific mentor. "Dragonfly helps encourage academic trainees to seek advice from faculty members and feel camaraderie with them on similar challenges they may have faced."

Peter Hinshaw, a psychologist at UC Berkeley, says the evidence shows that simply raising awareness of mental-health challenges helps to break a "vicious cycle of stigma and non-recovery", not just individually, but in the community.

Cultural change

But to make true progress, toxic research culture needs to change, says Zoë Ayres, an analytical chemist and co-founder of Voices of Academia, a hub for academics to share experiences of wellness. Some of the problematic factors that need reform are out of academics' direct control, she says, such as the publish-or-perish culture and a "lack of willingness by some universities to hold superstar academics to account" for harassment.

To help to achieve systemic change,

Dragonfly is working to establish structures in "every single unit of academia like scientific journals and funders" to take responsibility for mental health.

Dragonfly board member Michael Eisen was editor-in-chief of the journal *eLife* when it made academics' mental health a core part of its review process. That was one of the drivers for the journal moving from the 'accept-reject' model for papers to a system that publishes submissions alongside reviewer comments; *eLife* described the move as freeing authors from "the sword of Damocles" hanging over their heads when interacting with reviewers.

Despite progress, structural changes will not be easy, because "we lack an understanding of how to sustain these efforts and embed them more systematically into the fabric of academia", say Jennifer Bekki, who researches well-being in science, technology, engineering and mathematics (STEM) at Arizona State University in Tempe, and Kerrie Wilkins, a mental-health researcher at University of Massachusetts Boston, who co-lead a US programme called the National Convening on the State of Mental Health in STEM.

It aims to raise awareness of well-being in research nationally, focusing on faculty members and administrators as having the power to dismantle practices that contribute to problematic cultures. "We are at a place where power brokers within academia are more open to considerations of mental health," Bekki and Wilkins say.

OBESITY-DRUG PIONEERS WIN BREAKTHROUGH PRIZE

Large Hadron Collider experiments were also recognized by science's most-lucrative awards.

By Zeeya Merali

Five scientists who contributed to the development of the blockbuster weight-loss drugs Ozempic and Wegovy have picked up one of this year's US$3-million Breakthrough prizes – the most lucrative awards in science.

Originally developed to treat diabetes, these drugs work by mimicking a hormone called glucagon-like peptide 1 (GLP-1) that controls blood sugar levels and helps to curb appetite. "This class of drugs truly saves lives, changes lives and brings joy back to people's lives," says Ziyad Al-Aly, a physician-scientist at the Veterans Affairs St. Louis Health Care System in Missouri, who recently led a massive study analysing data from almost two million people to evaluate the effects of such medication[1].

This life-sciences prize is shared between the four researchers who discovered and characterized GLP-1 – endocrinologist Daniel Drucker at the University of Toronto, Canada; physician-researchers Joel Habener at Harvard Medical School in Boston, Massachusetts and Jens Juul Holst at the University of Copenhagen; and chemist Svetlana Mojsov at The Rockefeller University in New York City – along with Lotte Bjerre Knudsen of pharmaceutical company Novo Nordisk in Bagsværd, Denmark, who spearheaded the development of drugs based on these discoveries[2,3].

In the 1990s, Drucker and his colleagues realized that GLP-1 caused animals to eat less and lose weight. Knudsen stabilized the drug by adding fatty-acid chains, enabling it to bind to proteins in the blood, which prevents it from breaking down rapidly once injected. "It's a tremendous honour to receive this prestigious award," says Drucker. "But the most amazing gratification is when someone comes to my office and says, 'I lost 40 pounds [18 kg] and I feel healthy'."

Everyone's a winner

The award is one of six Breakthrough prizes to be awarded this year in life sciences, physics and mathematics.

Unusually for a major award, one of the fundamental-physics prizes was awarded to a grand total of 13,508 physicists spanning four collaborations at CERN, Europe's particle physics laboratory near Geneva, Switzerland. Through experiments using the Large Hadron Collider (LHC), these researchers have taken multiple precision measurements over the past decade to probe, and so far confirm, the standard model of particle physics. "We're honoured the award was made to the entire collaboration because without all those people we could not have made these advances," says Patricia McBride, a spokesperson for CERN's CMS collaboration. The prize money will be used to fund international students to visit CERN, she adds.

The award is deserved, says Brian Rebel, a particle physicist at the University of Wisconsin–Madison. "Finding the Higgs [boson] in 2012 was a once-in-lifetime event, but it was only the first step," Rebel says. Since then, LHC scientists have been pinning down the mass of the Higgs and its interactions, as well as discovering 72 new particles, investigating antimatter and probing the nature of the 'quark–gluon plasma' that existed soon after the Big Bang. "It takes a small army to create the tools to test and validate these results," says Rebel.

Another Breakthrough prize in fundamental physics was awarded to one of the architects

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CERN's prizewinning Compact Muon Solenoid detector.