CAREERS

COLUMN Mentorship must evolve in interdisciplinary programmes **p.301**

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MENTAL HEALTH

Under a cloud

Depression is rife among graduate students and postdocs. Universities are working to get them the help they need.

BY VIRGINIA GEWIN

Lauren was always a top student, but the pressures of her first year studying for a PhD in atmospheric chemistry at a UK university sent her spiralling into depression. At best, she couldn't focus on academic tasks, feeling as if her brain was "scrambled"; at worst, she couldn't get out of bed.

She developed a crippling fear of presenting her research. "Doing a PhD is such a personal thing, one that you've invested so much time in, that any criticism can feel like a direct reflection of yourself," says Lauren.

But she did something that many postgraduates do not: she got help. With counselling and medication, Lauren — a pseudonym that she uses on a blog detailing her experience (see

go.nature.com/4ta9fo) — is entering the final year of her PhD. Hers is one of more than 50 stories highlighted on the website Students Against Depression, funded by the Charlie Waller Memorial Trust in Thatcham, UK. "The website aims to raise awareness that depression isn't a personal failing or weakness; it's a serious condition that requires treatment," says psychologist Denise Meyer, the website's project manager.

For early-career scientists, competing academic demands simmer in a stew of isolation, high expectations and sleeplessness that can boil over into debilitating depression, agonizing bouts of anxiety or even suicide attempts. Even if students feel that they can handle the isolation and stress of a graduate programme, extra stresses, such as problems in a relationship with an adviser or a partner, can tip them over the edge. It is important to understand the signs of depression and anxiety, know what resources are available on and off campus, and have an idea of what to expect from counselling.

RECOGNIZING THE PROBLEM

Statistics specific to graduate students are hard to come by, but surveys¹ suggest that rates of depression have doubled among all US college students over the past 15 years, and incidence of suicidal behaviour has tripled. The best estimates are that about 10% of US college students², and 4% of all UK university students³, seek treatment. And the vast majority of mental-health disorders, from schizophrenia to bipolar disorder, manifest during the teens and twenties: the college and postgraduate years.

It can be difficult for graduate students to recognize that they need help. Stress is normal — especially during training. But changes in personality or behaviour can signal problems in need of attention (see 'Signs to heed').

"Depression can have cognitive impacts that interfere with concentration and learning — things that go to the heart of being a student — making it more difficult to recognize this as depression," says Gordon Strauss, director of student mental-health services at the University of Louisville in Kentucky. "Students trying to assess whether they are depressed should ask themselves if they are able to perform research, be productive and derive satisfaction from their research."

These changes are especially tough for ►

STRESS AND RESILIENCE

The links between adversity and mental illness. nature.com/stress

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► students who, like Lauren, have previously been high achievers. “I’ve seen graduate students, who have been academically successful all their lives, get to graduate school and experience academic failure for the first time — which can come as quite a shock and fuel feelings of anxiety,” says Karen Peterson, director of the office of scientific career development at the Fred Hutchinson Cancer Research Center in Seattle, Washington.

Perhaps not surprisingly, one of the main concerns for graduate students is whether they come to believe that they have chosen to specialize in the wrong field. “We see lots of students who have this concern yet can’t imagine switching fields because they are so far along,” says

Ronald Albucher, director of counselling and psychological services at Stanford University in California. “These are legitimate concerns that we recommend talking through with friends, family or counsellors.”

“If there is a long wait for treatment, people tend not to follow through.”

Ronald Albucher

SEEKING HELP

Getting help can prove challenging. Stigma remains an issue, although more in some cultures than in others. “In Italy, very few graduate students ask for psychological help, because of the judgement that goes along with it,” says Paolo Valerio, coordinator of the Naples University Centre of Psychological Consultation, part of a campus populated by more than 90,000 students. But there are other barriers, too. “Students have competing priorities, from academic deadlines to social activities, that make it easy to put off caring for yourself — whether consciously or unconsciously,” says Daniel Eisenberg, a health-policy researcher at University of Michigan in Ann Arbor.

Students will be better prepared if they know what services are available. “When a student moves to a new place, it’s a prudent idea to figure out how to get all kinds of health care — including mental-health support,” says Victor Schwartz, medical director of the Jed Foundation, a non-profit group in New York that aims to promote emotional health and prevent suicide among students. Graduate students often have access to undergraduate services; postdocs may be able to use staff resources. However, the most recent postdoc survey⁴ by Sigma Xi, a scientific-research society based in Research Triangle Park, North Carolina, suggests that almost 40% of postdocs don’t know whether counselling is available at their university.

“In times of crisis, it’s hard to think straight,”

says Julie Gold, a professional-development coach with the Office of Intramural Training and Education at the US National Institutes of Health (NIH) in Bethesda, Maryland. “I encourage incoming trainees to call the counselling centre to find out the hours and how to get an appointment.” Gold also suggests that programme directors discuss mental-health resources with students when they start and throughout the semester.

Most US and UK universities have some mental-health support on campus, but it is usually aimed at undergraduates. In mainland Europe, services are spottier: one-third of higher-education institutions don’t offer counselling. And the quality of services can differ widely. “If you’ve seen one campus mental-health programme, you’ve only seen one campus mental-health programme; it’s extraordinarily variable,” says Jerald Kay, chair of psychiatry at Wright State University School of Medicine in Dayton, Ohio.

COST MATTERS

In the United States, where treatment can be expensive, a student’s decision to seek mental-health help “boils down to an issue of funding priorities,” says Kay. In 2006, the University of Louisville imposed a surcharge on tuition fees to expand the student health service and make psychiatric help available to more than 20,000 students. “The psychiatric services I provide are covered by the health fee so neither insurance nor parents are billed,” says Strauss.

Similarly, Roger Chalkley, an associate dean for education at Vanderbilt University in Nashville, Tennessee, has created a free, confidential service for his university’s 1,100 biomedical postgraduate students.

Seeking help earlier rather than later is a good approach, say counsellors — particularly because many medications can take weeks or months to become effective. Stanford University has increased services for its 8,500 full-time graduate students and 7,000

undergraduates to ensure that people are seen more quickly. “If there is a long wait, people tend to not follow through,” says Albucher.

One-third of US university mental-health centres place limits on the number of counselling sessions allowed. And as demand increases among UK students, university counselling services have also started offering a set number of sessions, says Patti Wallace, lead adviser for university and college counselling with the British Association for Counselling and Psychotherapy, based in Lutterworth. Once the limit is reached, counsellors will usually refer students who still need treatment to other local services.

When campus centres are overbooked or inadequate, outside services can prove useful (see ‘Where to get help’). This year, the US National Graduate Student Crisis Line (800-472-3457) has received 1,140 calls: triple the total in 2011. The rise has been fuelled in part by a mention in *The Chronicle of Higher Education* in August. “The hotline exists because of the concern that graduates students may not want to seek help locally for fear of appearing weak,” says Nick Repak, executive director of Grad Resources in Plano, Texas, which contracts and trains the Boys Town National Hotline to run the service.

COUNSELLING EXPECTATIONS

Students may be unclear on what counselling sessions will entail. Some are surprised to learn that many issues can be resolved quickly. “Many of the students I see come for only one session to talk through difficulties and receive suggestions on how better to manage stress,” says Wallace. “We aim to get people functioning effectively as quickly as possible.” Wallace focuses on offering pragmatic strategies to deal with depression, anxiety and relationship problems, but she says that each situation is unique, and it is often difficult to work out to what extent troubles are attributable to academic work or personal life.

A greater concern might be confidentiality, which is a top priority at counselling centres. “Everything students tell me is private and confidential — even if they were referred to me by an adviser or member of the faculty,” says Strauss. Counsellors will break confidence only if they feel that a patient presents imminent harm to themselves or others.

“It’s important for students to understand that the counsellors offering treatment are not the agents of the university — they are there at the behest of the student’s welfare,” says Kay.

However, Albucher points out that there can be a loophole: if students are still using a parent or guardian’s health insurance, an explanation of services charged to the student might be sent home by the insurance company, inadvertently breaking the news about the treatment.

Postgraduates often grapple with whether to disclose mental-health issues to their advisers. “You have to be realistic that some supervisors are not necessarily the person to discuss

SYMPTOMS

Signs to heed

There are many signs of depression and anxiety — the two most common mental-health disorders among postgraduates. Anyone who experiences one or more of the following symptoms should consider seeking help:

- Inability to attend class or do research
- Difficulty concentrating
- Decreased motivation
- Increased irritability
- Sleep disturbances — insomnia, or sleep is no longer restorative
- Changes in appetite or energy levels
- Increased social withdrawal **V.G.**

RESOURCES

Where to get help

In the United States:

- Grad Resources
www.gradresources.org
- The Jed Foundation
www.jedfoundation.org
- ULifeline
www.ulifeline.org
- Campus Mind Works
www.campusmindworks.org

In the United Kingdom:

- Mental Wealth
www.mentalwealthuk.com
- Student Counselling
www.student.counselling.co.uk
- Students Against Depression
www.studentsagainstdespression.org

your worries with,” says Sharon Milgram, director of the NIH Office of Intramural Training and Education. Wallace suggests that postgraduates talk to a university-based counsellor about what can be gained by confiding, and what level of detail is appropriate. “If a postgraduate feels some level of disclosure would help their adviser understand their recent behaviour, it may suffice to simply say, ‘I’ve been having problems and I’m getting help for it,’” says Wallace.

Data from the United States and the United Kingdom suggest that counselling helps the vast majority of students to get past personal problems and excel. To be successful, people must take care of themselves, notes Milgram. “Getting help,” she says, “is a sign of strength, not weakness.” ■

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1. Radison, K. & DiGeronimo, T. F. *College of the Overwhelmed* (Jossey-Bass, 2005).
2. Gallagher, R. P. *National Survey of Counseling Center Directors 2011* (International Assoc. of Counseling Services, 2011).
3. Royal College of Psychiatrists *Mental health of students in higher education* College Report CR166 (2011).
4. Davis, G. *Am. Scientist* **93**, (3) Supplement <http://postdoc.sigmaxi.org/results/> (2005).

CORRECTION

The story ‘A voice for the voiceless’ (*Nature* **489**, 461–463; 2012) incorrectly stated that the US National Postdoctoral Association (NPA) is working with the Association of Public Land-grant Universities to develop a certification programme. The NPA is developing the programme on its own but will seek support and input from the university association.

COLUMN

Advising on the edge

Interdisciplinary mentorship must evolve to keep pace with innovative programmes, argues **Katherine Mackey**.

More than ever, scientists are working across disciplines. Addressing and analysing climate change, sustainable development and genomic data requires unusual and interdisciplinary approaches. As problems and solutions co-evolve in unexpected ways, skill sets must evolve too — as must mentorship. Mentors should work to bring early-career scholars up to speed on issues such as funding structures and communication styles tailored to interdisciplinary efforts — and protégés should be proactive.

Interdisciplinary work often takes root in an established department. Scholars must function in the existing framework, even when the goals, timelines and deliverables of the research differ. So when the research grows into its own programme, the first scholars to seek tenure in it will have no mentors who have navigated the same process. As early-career researchers attempt to break new ground, they must seek the few interdisciplinary mentors who can help them to find their bearings.

Young scholars should cast a wide net. Mentors from other disciplines may provide fresh perspectives, and their enthusiasm for collaborating can build an early-career researcher's confidence. But interdisciplinary scholars still need strong mentors in their own programmes, who are sensitive to extra-departmental obligations and can help them to keep pace with deadlines and degree or tenure requirements.

To ensure that their protégés get used to the culture of multiple disciplines, mentors should help students to identify and forge collaborations with other experts. This might include arranging training in different laboratories or universities, to build networks from which interdisciplinary progress can grow.

SPECIAL CHALLENGES

Logistics set interdisciplinary mentorship apart. For students, the need for course work and training in both a disciplinary department and an interdisciplinary programme can double early-stage time commitments and delay dissertation projects. It is essential for advisers and committee members to communicate with the student and each other to prioritize training objectives.

Early-career researchers on the tenure track face more serious challenges: owing to lack of precedent, institutional variability and multidisciplinary tenure committees, expectations

S. ELFORD

may not be well established. How many first-authored papers should be written per year? By when should the first grant be funded? How many courses should be developed and/or taught each year? All of these milestones can vary between disciplines.

Committee or department chairs should issue annual progress reports to ensure that a scientist's research goals mesh with the department's needs. This gives the scholar a chance to adapt their research early on, to include angles or activities that the department values.

The challenge isn't just about understanding benchmarks, but also about finding ways to receive credit for unusual, difficult-to-evaluate work such as science-policy statements, decision-support systems and outreach tools. And it may not be clear whether or how extra-departmental courses, multi-authored projects or shared graduate students (who gets credit for mentoring them?) will count towards tenure requirements.

Mentors can clarify how these achievements will be 'scored' during the tenure process. And they should strive to help protégés to understand the opinions and expectations of committee members by, for example, facilitating discussions about how progress is charted.

As interdisciplinary scholars look for innovative solutions, their mentors must also develop innovative approaches. This will help the protégés to enrich their education and earn useful degrees — and chart a course towards a successful career. ■

Katherine Mackey is a US National Science Foundation biology fellow at the Woods Hole Oceanographic Institution and the Marine Biological Laboratory in Woods Hole, Massachusetts.