

RESEARCHERS' WELL-BEING AND CAREER DEVELOPMENT

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WHAT IS ECOOM?

Expertise Centre for Research & Development
Monitoring



WHAT IS ECOOM?

Expertise Centre for Research & Development

Monitoring

Policy-oriented research

Jo Brouns

Vlaams minister
van Werk,
Economie,
Innovatie &
Landbouw



DEPARTEMENT
ECONOMIE
WETENSCHAP &
INNOVATIE



Vlaamse
overheid



PHD HOLDERS' CAREERS



Academic



Non-academic

EMPLOYMENT IN ACADEMIA



Bachelor



Masters



PhD



Postdoc

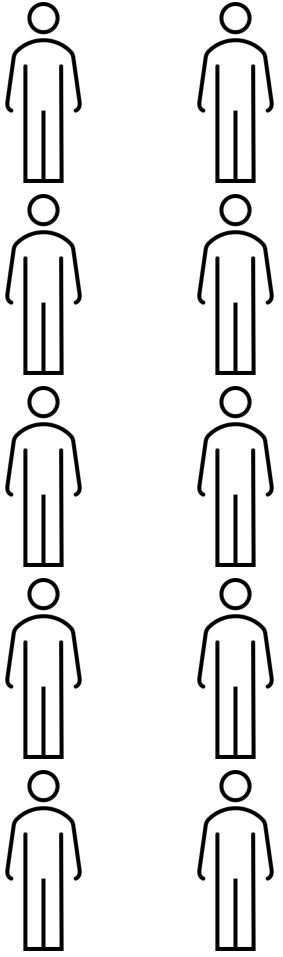


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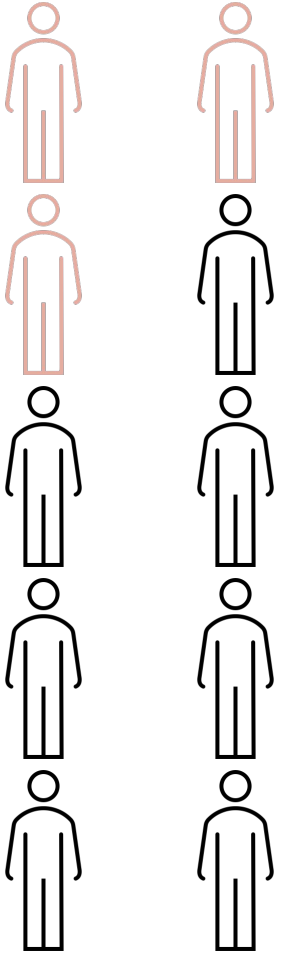


EmeritusProf

EMPLOYMENT IN ACADEMIA



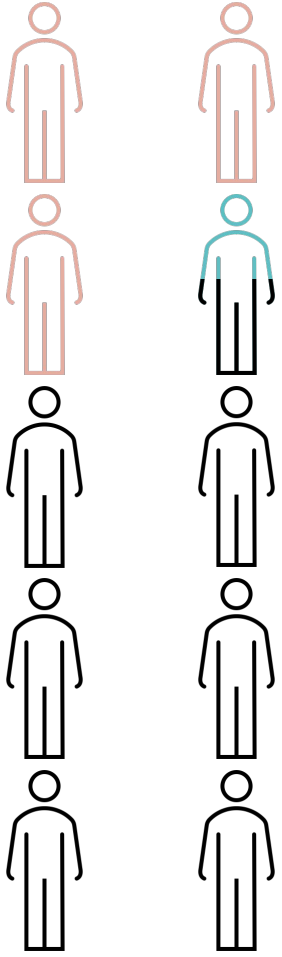
EMPLOYMENT IN ACADEMIA



33%

**immediately has a
postdoctoral
position**

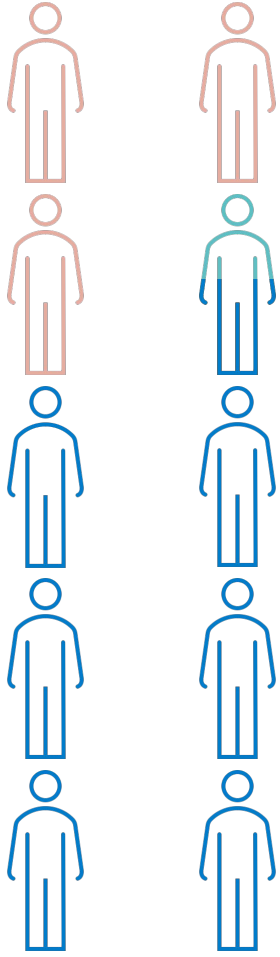
EMPLOYMENT IN ACADEMIA



4%

**immediately
has a professor
position**

EMPLOYMENT IN ACADEMIA



64%

**immediately
leaves academia
in Flanders**

EMPLOYMENT OUTSIDE ACADEMIA

CAREER NEWS | 07 March
Science Panel Study
A science doctorate holder's career path
Chris Woolston
Twitter Facebook Email
[OECD Home](#)
OECD

nacaps
National Academic Career Panel Study

PHD CAREERS IN FLANDERS
Where do people with a PhD degree from the five Flemish universities end up? Who are they and what do they do? The study included the careers of 2982 PhD holders.

Nacaps, the National Academic Career Panel Study, is a longitudinal study of doctoral candidates and doctorate holders. This is the first study to systematically collect data on career paths of highly qualified academics in Germany – for the use of researchers, HEIs and academic policy makers.

Adapted from Getty

RESEARCHERS' CAREERS - PRECARIOUSNESS

Advice, technology and tools

Work

Your
story

Send your careers story
to: naturecareerseditor@nature.com



ILLUSTRATION BY MICHEL MONAGE

THE PRECARIETY OF POSTDOCS

The second article in a series on *Nature's* survey of postdocs worldwide uncovers a sense of instability and disenchantment. **By Chris Woolston**

RESEARCHERS' CAREERS - PRECARIOUSNESS

**FIXED
CONTRACT**

87% NON-ACADEMIC

9% POSTDOC

67% PROFESSOR

RESEARCHERS' CAREERS – UNCERTAIN CAREER PROSPECTS

Advice, technology and tools

Work

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WHEEL OF FORTUNE: UNCERTAIN PROSPECTS FOR POSTDOCS

Nature's first survey of this key segment of the scientific workforce uncovers anxiety and doubt about their professional pathway. **By Chris Woolston**

RESEARCHERS' CAREERS – UNCERTAIN CAREER PROSPECTS

**SATISFACTION
WITH CAREER
OPPORTUN
ITIES**

30%

ACADEMIC

42%

NON-

ACADEMIC

RESEARCHERS' CAREERS – WORKLOAD

Advice, technology and tools

Work

Your story
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Burnout is a syndrome that can occur in any workplace where there is long-term stress — including academic science.

PANDEMIC BURNOUT IS RAMPANT IN ACADEMIA

Remote working, research delays and childcare are taking their toll on staff, causing stress and anxiety. **By Virginia Gewin**

A year into the coronavirus pandemic, many in the academic scientific workforce are experiencing a state of chronic exhaustion known as burnout. Although it is not a medical condition and can occur in any workplace where there is stress, burnout is recognized by the World Health Organization as a syndrome. Its symptoms are physical and emotional, and include feelings of energy depletion or exhaustion; increased mental distance from and feelings of negativity or cynicism towards one's

job; and a reduced ability to do one's work. At its core, burnout is caused by work that demands continuous, long-term physical, cognitive or emotional effort. Indicators of the syndrome have risen sharply in some higher-education institutions over the past year, according to surveys in the United States and Europe. In a poll of 1,122 US faculty members that focused on the effects of the pandemic, almost 70% of respondents said they felt stressed in 2020, more than double the number in 2019 (32%). The survey,

conducted last October by *The Chronicle of Higher Education* and financial-services firm Fidelity Investments in Boston, Massachusetts, also found that more than two-thirds of respondents felt fatigued, compared with less than one-third in 2019. During 2020, 33% felt angry, whereas just 12% said that in 2019. The results were released last month. More than half of people surveyed said they were seriously considering changing their career or retiring early. Emotional and other effects of pandemic-related burnout

RESEARCHERS' CAREERS – WORKLOAD

70% NON-ACADEMIC

66% POSTDOC

39% PROFESSOR

RESEARCHERS' CAREERS – WORK-LIFE BALANCE

76% NON-ACADEMIC

68% POSTDOC

46% PROFESSOR

HOW IS THIS RELATED TO THE PHD TRACK?

nature

Explore content

LSE

☰

Cassie M Hazell
Clio Berry
January 12th, 2022

LSE

☰

nature > editorial

EDITORIAL | 13 N

The mental health of postgraduate researchers needs more attention



53 Shares

David Watson

February 1st, 2022

What can universities do to support the well-being and mental health of postgraduate researchers?

2 comments | 32 shares

Estimated reading time: 6 minutes



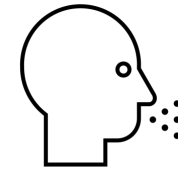
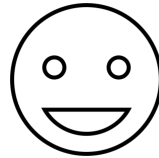
As highlighted in a recent LSE Impact blogpost, there is evidence to show that postgraduate researchers face particular risks in relation to poor mental health and well-being. Reporting on a recent review of interventions carried out by universities and higher education institutions, David Watson, outlines four areas in which universities can develop initiatives to support the well-being of postgraduate researchers.

Anxiety and depression in graduate students is worsening. The health of the next generation of researchers needs systemic change to research cultures.

ABOUT WELLBEING



JOB OUTCOMES



HEALTH OUTCOMES

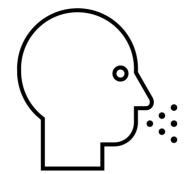
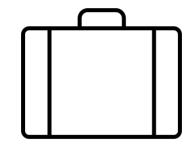
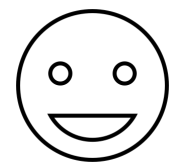


ASSUMPTION 1: highly

CO



JOB OUTCOMES



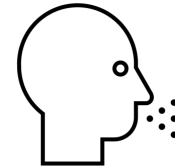
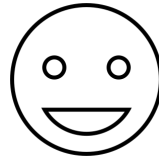
HEALTH OUTCOMES



ASSUMPTION 2: spill-over



JOB OUTCOMES



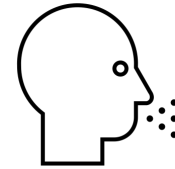
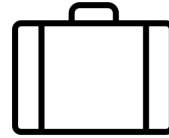
HEALTH OUTCOMES



ASSUMPTION 2: spill-over



JOB OUTCOMES



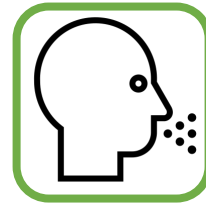
HEALTH OUTCOMES



ASSUMPTION 2: spill-over



JOB OUTCOMES



HEALTH OUTCOMES



HOWEVER...

Predictive model, all PhD students 2018	Mental health	Job satisfaction	Turnover intentions
WORK CONTEXT			
Job demands			
Job control			
Inspirational leadership style			
Much interest in an academic career			
Perception of high chance of an academic career			
Positive perception of career outside academia			
Science cluster			
Type of appointment			
PhD phase			
ORGANIZATIONAL CONTEXT			
Closed decision-making in the team			
Family-work conflict			
Work-family conflict			
SOCIODEMOGRAPHICS			
Woman			
Age			
Partner			
Children			
R²			

1=execution vs. starting

2=finishing vs. starting

Predictive model, all PhD students 2018	Mental health	Job satisfaction	Turnover intentions
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Work-family conflict			
SOCIODEMOGRAPHICS			
Woman			
Age			
Partner			
Children			
R²	0.201		

1=execution vs. starting

2=finishing vs. starting

Predictive model, all PhD students 2018	Mental health	Job satisfaction	Turnover intentions
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ORGANIZATIONAL CONTEXT			
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Family-work conflict			
Work-family conflict			
SOCIODEMOGRAPHICS			
Woman			
Age			
Partner			
Children			
R²	0.201	0.379	

1=execution vs. starting

2=finishing vs. starting

Predictive model, all PhD students 2018	Mental health	Job satisfaction	Turnover intentions
WORK CONTEXT			
Job demands	Red	Red	Red
Job control	Green	Green	Green
Inspirational leadership style	Green	Green	Green
Much interest in an academic career	Green	Green	Green
Perception of high chance of an academic career	Light Grey	Light Grey	Light Grey
Positive perception of career outside academia	Green	Green	Green
Science cluster	Light Grey	Light Grey	Light Grey
Type of appointment	Light Grey	Light Grey	Light Grey
PhD phase	Green	Red	Green
ORGANIZATIONAL CONTEXT			
Closed decision-making in the team	Red	Red	Light Grey
Family-work conflict	Red	Light Grey	Light Grey
Work-family conflict	Red	Red	Red
SOCIODEMOGRAPHICS			
Woman	Red	Light Grey	Light Grey
Age	Light Grey	Red	Light Grey
Partner	Light Grey	Green	Light Grey
Children	Green	Light Grey	Light Grey
R²	0.201	0.379	0.231

1=execution vs. starting

2=finishing vs. starting

PhD training is no longer fit for purpose – it needs reform now

If researchers are to meet society's expectations, their training and mentoring must escape the nineteenth century.

These days, there's barely a world leader who doesn't talk up science. Prime Minister Narendra Modi was the star turn at the annual Indian Science Congress, held this month in Nagpur, where he exhorted the nation's researchers to do the science needed to make India self-reliant. At last October's landmark Communist Party congress, Chinese Premier Xi Jinping set out his vision of how science and innovation could drive growth. And last August, US President Joe Biden signed the CHIPS and Science Act, which unlocks US\$13.2 billion for semiconductor research and workforce development, in a bid to maintain the country's technological primacy.

In each case, the message to researchers is crystal clear: leaders see science as essential to national prosperity, well-being and, of course, competitiveness. So, is research fit for the challenge of advancing, refining or critiquing these goals? Not exactly. And it won't be until there is fundamental reform to the gateway to a research career: PhD training.

Training in trouble

As *Nature* and other publications have reported persistently, PhD training worldwide has been in trouble for some



“In most places, a candidate's work is still evaluated using a single-authored dissertation.”

sometimes called a viva voce ('with living voice' in Latin), a nod to its nineteenth-century origins. And in many countries, candidates must publish in a journal before they get a PhD, something that critics say could fuel predatory publishing.

The system's strains have become more obvious because the number of people doing PhD training has been rising sharply. According to the 2022 book *Towards a Global Core Value System in Doctoral Education* – available as an open-access PDF; see go.nature.com/3zihyuk – the number of PhDs awarded in China more than doubled from 23,400 in 2004 to 55,011 in 2016 (and reached around 60,000 in 2019). India's numbers increased from 17,850 in 2004 to 25,095 in 2016; US figures climbed from 48,500 to 69,525 over the same period.

The doctorate updated

Too often, PhD training is still, at least conceptually, organized as it was after its development in and subsequent export from mid-nineteenth-century Germany. At that time, young scholars were attached to individual professors in a master–apprentice relationship, with the objective of safeguarding and advancing knowledge in individual disciplines.

That cannot continue if the next generation of scholars is to meet society's demands. There needs to be a revolution in the organization and funding of PhD training. And it must be on a similar scale to the shake-up that took place when school and university education stopped being a privilege enjoyed by relatively small numbers of people – those with wealth, or those training for occupations such as politics, religion or teaching. As education expanded to be open to everyone (at least in theory), it was no longer feasible to offer tuition in small groups where one person did most of the teaching, with little or no training. Countries introduced subject specialists as teachers; they limited class sizes, experimented with new educational technologies, collaborated on quality-assurance measures and drew on educational research to understand how students learn in different ways.

TAKE HOME MESSAGES



The grass is greener



Different components



Think before acting

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