

# Collaboration and big science

**Editorial** Catherine Armitage, Gemma Conroy, Bec Crew, David Payne, Rebecca Dargie **Analysis** Bo Wu, Willem Sijp, Catherine Cheung **Art & design** Tanner Maxwell, Madeline Hutchinson, Alisdair MacDonald, Denis Mallet, Wojtek Urbanek **Production** Kay Lewis, Ian Pope, Nick Bruni, Bob Edenbach, Joern Ishikawa **Marketing & PR** Stacy Best Ruel, Angelica Sarne, Elizabeth Hawkins, **Sales & partner content** Nicole Yu, Stella Yan, Pinky Zhang, Alex Yu, Sicong Wang, Kara Urbanek **Publishing** Rebecca Jones, Richard Hughes, David Swinbanks

## Nature Index 2019 Collaboration and big science

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### Nature editorial offices

The Campus, 4 Crinan Street,  
London N1 9XW, UK  
Tel: +44 (0)20 7833 4000  
Fax: +44 (0)20 7843 4596/7

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**P**olitical instability and escalating trade tensions have dominated 2019. As US–China relations deteriorate and the uncertain consequences of the United Kingdom’s planned departure from the European Union loom, science cannot escape the fray. In the United Kingdom, cross-border funding programmes with Europe are increasingly vulnerable, and in the United States, a government-led crackdown to root out alleged espionage is complicating joint efforts between American and Chinese researchers.

The full extent of any damage to research output is not yet clear, but early signs in UK and EU collaborative science are worrying. Between 2015 and 2018, the United Kingdom’s annual share of EU research funding fell by €430 million (US\$473 million), largely owing to a reduction in grant applications. The number of UK–EU collaborative articles published in journals tracked by the Nature Index grew by just 1.3% from 2016 to 2018, although the stagnation seems unlikely to have been caused by the Brexit vote given the long lead times for research publication. By contrast, US–China collaborative articles jumped by 32% during the same period.

“There shouldn’t be any barriers,” says US-based neuroscientist, Hongkui Zeng, who relies on imaging expertise in China to investigate brain functioning. The stories of international partnerships you’ll read about in this supplement are illustrative of resilience against political pressure. They are stories of mutual admiration, not animosity, and a desire for openness, not secrecy. And there is a lot at stake. In the journals covered by the Nature Index, the number of internationally collaborative articles across the four broad subject areas has risen by between 21% (physical sciences) and 48% (chemistry) since 2012. Publications with thousands of authors are becoming more common in fields known for conducting big science projects, such as high-energy physics, genetics and oncology, as highlighted in this supplement.

This rise in collaborative research has been driven by necessity. As global challenges become increasingly complex, the most valuable teams are those with interdisciplinary skill sets and diverse perspectives. For research, the truism that great things are seldom done alone, has never been more accurate.

### Bec Crew

Senior editor



### On the cover

Researchers overcome geopolitical obstacles to maintain connections.  
Illustration by Roberto Cigna

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