Building Research Collaboration in Global Environments

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Underwritten by:

SPRINGER NATURE
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Today’s Speakers

Rebecca Cooney
Chief Editor
Nature Mental Health

Simon Baker
Chief Editor
Nature Index
Research collaboration trends:
What the data tell us
Global trends in research collaboration

- The average number of authors per publication has been steadily increasing across all disciplines since the 1980s (https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0149504)
- A Nature analysis of the Dimensions database found that between 2001 and 2020, international collaborations rose by 10%, from 14% to 24% of all papers (https://www.nature.com/articles/d41586-021-01570-2)
- By 2021, collaborations involving three or more nations accounted for 30% of international collaborations and 7% of all articles.
- The Covid pandemic also appeared to drive an uptick in academia-industry collaboration.
- Between 2019 and 2021, articles published including authors from both an academic institution and a corporation rose by 8,837 (17%), although there was a fall back in 2022.
Growing tendency towards hyperauthorship

- Trend has been most pronounced in physical sciences. One Higgs boson paper, for instance, in 2015 had 5,154 authors on a single article (https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.114.191803).
- Data in the Nature Index back this trend up. In medical and health sciences, the number of papers with 50 or more authors rose from 58 in 2015 to 203 in 2021.
- But Physical sciences is still the most common field of research for these multi-authored papers in the Index, with 335 articles in 2021, an 18% increase on 2015.
Collaboration data are key analysis tool for global research trends

- The United States’ most productive research partnership is with China, however their collaborative output has dropped by 15% since 2020.
But the Index can look beyond country-level collaboration too...

- Institutional collaboration, both domestic and international
- Institutional collaboration (between types of institution: academic, government, healthcare, corporate)
- City-level collaboration
- Collaboration for the UN SDGs
- Global North-South collaboration
The leading five institutional pairs in cancer-related research for 2018 to 2022

Leading global collaborating institutions
- Harvard University–Massachusetts Institute of Technology, United States
- University of the Chinese Academy of Science–Chinese Academy of Sciences, China
- Memorial Sloan Kettering Cancer Center–Cornell University, United States
- French National Centre for Scientific Research–National Institute for Health and Medical Research, France
- Chinese Academy of Sciences–Peking University, China
Leading country collaborations for SDGs 12 to 15 (Climate and conservation)

CLIMATE CONNECTIONS
Among the leading six country collaborations for climate and conservation-related output in the Nature Index, the two strongest partnerships — China–United States and United Kingdom–United States — have been on very different trajectories since 2020, the year the COVID-19 pandemic started.
City collaborations in China and the United States
Global North-South collaboration: a new approach for the Index

- Highlights difficulties with definitions/categories for Global North and South
- Raises questions about selectivity in publishing
- Data may also be skewed by disciplines that lean towards more hyperauthorship
- But rich data source nonetheless with fascinating trends...
Overall trend in North-South collaborative articles in the Index
But comparison with overall article volume shows distance left to travel...
Even within collaborations, contributions still dominated by the North

![Bar chart showing share of contributions from the North and South from 2015 to 2022. The North consistently has a higher share than the South.]
China growing rapidly in North-South papers

leading 10 countries/territories 2015–22
India an important partner among leading North-South collaborations
Other types of collaboration still difficult to track with (Nature Index) data

- Community engagement
- Collaboration with government/policymakers
- The involvement of support staff in research
- Complex collaboration networks involving multiple organizations/individuals
- Collaboration relating to career stage or background
Case study: urban-rural collaboration

● Theme of forthcoming “Science Cities” supplement
● Articles focus on three examples in US and China
● In US, there are instances of urban-based researchers making a real difference to remote communities (UoC in California, Harvard in Alaska)
● But Index can only track this superficially: impact of UoC system on city collaborations for instance
Thank you

Simon Baker, chief editor Nature Index
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Research Collaboration: an editorial perspective
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Nature Mental Health

• The multidisciplinary nexus for high-quality, high-impact original research and commissioned work on mental health and disorders of mental health
• Launched in Jan 2023; monthly, online-only, hybrid
• Visit our website www.nature.com/natmentalhealth
• Follow us on X/Twitter @NatMentHealth
Nature Mental Health – Aims and Scope

• Expansive view of the relationship between mental health and human health
• **Mental health a human right** and essential to an individual’s wellbeing...also a crucial component for the positive functioning and flourishing of families, communities and societies.
• Committed to promoting scholarly research, increasing discourse and reinforcing connections among the members of the mental health community around the world
• **Core mission of advancing equity** — racial and ethnic, gender, social, global
Research collaboration

• Where do the issues lie → what are the benefits?
• Facilitating research collaboration from an editorial perspective
• How can librarians and information managers support researchers?
Low representation in academia

Status quo academic publishing system disadvantages minorities (gender and sexuality; race and ethnicity; people with disabilities; intersectionality)

Less funding and opportunity for advancement and promotion

Less participation as authors, peer reviewers, and editors

Fewer publications
Disrupting the cycle in academic publishing

- Improving data collection and best practices across publishers
- Publisher-level mandates, commitments, and priority setting
- Make benchmarks and progress transparent
Focus on specific practices to avoid

• Helicopter/parachute/colonial research – exclusion or exploitative involvement research conducted in LMIC

• “Ethics dumping”- unethical research practices conducted in LMICs; exploitation of loopholes
Supporting ethical, inclusive collaboration

- **Raising awareness**: Nature Portfolio will encourage authors to consider the Global Code when developing, conducting and communicating their study.
- **Creating transparency**: Authors will be encouraged to provide an optional ‘Inclusion and Ethics’ disclosure statement during peer review and in the published paper.
- **Citation diversity**: They will also be asked to consider citation diversity specifically for local and regional research.
- **Inclusive peer review**: Internal standard will be set to involve local and regional experts in peer review.
Supporting ethical, inclusive collaboration

- Active consultative engagement with communities/stakeholders
- Providing reviewer training
- Identifying where barriers to accepting invitation to review exist (e.g., time constraints; language)
- Outlining internal equity guidelines and goals
- Assessing personal biases (e.g., homophily, regional differences)
- Transparency in the publishing process and expectations
- Acknowledge the heterogeneity of the academic publishing ecosphere (e.g., discipline and domain specific differences)
- Provide recognition and promotion beyond publications
A cross-sectional epidemiological study of non-suicidal self-injury prevalence in Chinese psychiatric patients

Non-suicidal self-injury (NSSI) is a common behaviour among psychiatric patients that is often overlooked and often bears serious consequences.

Prevalence and predictors of mental health problems in refugee children living in informal settlements in Lebanon

Millions of people are currently displaced. About 80% of them are children who are at increased risk of mental health problems. While some risk factors such as war exposure are well established, less is known regarding the effects of the local refugee environment. Here we show that the prevalence and comorbidity of mental health problems in Syrian refugee children living in settlements in Lebanon are high. We assessed individual, familial and...
Supporting ethical, inclusive collaboration

- **SDG literacy** – health and allied fields’ research agendas for LMICs (and for many HICs) are often tied to specific progress on SDGs → North-South and South-South

- **Agenda setting** – as knowledge partners, librarians and info managers can help frame institutional and departmental agendas; identify capacities and gaps in research frameworks; focus research questions and strategies

- **Open Science champions** – open science goes beyond Open Access papers (open data/protocols/manuals/code)
Thank you!

“There is no thing as a single-issue struggle because we do not live single-issue lives.”

— Audre Lorde