

# Comment



MAMUNUR RASHID/NURPHOTO/GETTY

Libraries in many institutions in low- and middle-income countries cannot finance a broad range of journal subscriptions.

## The Cape Town Statement on fairness, equity and diversity in research

Lyn Horn, Sandra Alba, Gowri Gopalakrishna, Sabine Kleinert, Francis Kombe, James V. Lavery & Retha G. Visagie

The benefits of scientific collaboration are too often skewed towards wealthier countries. Bioethicists and others present guidance on how stakeholders such as researchers can change this.

**A**s awareness has grown about fraud and misconduct in science, the World Conferences on Research Integrity have become a leading forum for the discussion and study of ways to promote responsible behaviour in research. Since the first meeting in 2007, which was held in Lisbon, the events have helped to establish an academic field focused on research integrity.

Meetings have typically concentrated on issues such as research misconduct, responsible behaviour around data collection, analysis, authorship and publication, and the importance of reproducibility. But last May,

attendees to the 7th World Conference on Research Integrity, held in Cape Town, South Africa, took a significant step. They added the myriad ways in which research programmes and practices disadvantage those living in low- and middle-income countries (LMICs) to the suite of issues that threaten the integrity of science.

Three of the six previous world conferences have led to the publication of guidelines or principles. We are part of a working group (including bioethicists, researchers, institutional leaders and journal editors) that now presents the Cape Town Statement on

Fostering Research Integrity Through the Promotion of Fairness, Equity, and Diversity. (See Supplementary information for a list of working-group members.)

This statement entails 20 recommendations, drawn from discussions involving around 300 people from an estimated 50 countries, including 16 African nations and 5 South American ones (see [go.nature.com/3fk96er](https://go.nature.com/3fk96er)). The discussions were held over 18 months – before, during and after the Cape Town conference – the theme for which was ‘fostering research integrity in an unequal world’.

The Cape Town Statement is essentially a call to action that we hope will help to turn the global conversation on inequity and unfairness in research into changes in practice by all stakeholders. Here, we lay out the motivation for the statement, and its broad goals.

### Layers of injustice

The reasons for the statement are clear. Much too often, researchers and institutions from high-income countries reap greater benefits from global collaborations than do LMIC collaborators – whether in relation to numbers of papers published, authorship, career progression, setting priorities for research or the ownership of samples and data<sup>1</sup>.

As an indication of this, a look at the authorship of papers about COVID-19 from the 10 top medical and global-health journals (according to impact ratings), containing content related to Africa or any African country, and published during the first 9 months of 2020, reveals that 66% of the authors were not from Africa<sup>2</sup>. One in five articles had no author from Africa at all. What’s more, of those papers with African authorship, 59% of first authors and 81% of last authors were not from Africa, and only 14% of papers had both an African first and last author.

Often, what happens is that after securing a grant for a project, a research team from a high-income country looks for local researchers in the low- or middle-income country of interest to collaborate with. Local researchers might be offered some grant money and co-authorship on a paper (usually with their name appearing in the middle of the list). Invariably, the lead research team conducts the analyses, with the local researchers only reviewing manuscripts, often to ensure that they are culturally and politically acceptable<sup>3</sup>.

Even the push towards openness and transparency in science publishing – which many have argued is a way to foster greater integrity in research – has created more barriers for investigators in low-resource environments.



Scientists in Kenya work on a malaria vaccine at the KEMRI-Wellcome trust laboratories in Kilifi.

Sharing data, for example, requires having enough institutional infrastructure and resources to first curate, manage, store and (in the case of data relating to people) encrypt the data – and to deal with requests to access them. Also, the pressure placed on researchers of LMICs by high-income-country funders to share their data as quickly as possible frequently relegates them to the role of data collectors for better-resourced teams. With

**“Establish long-term relationships with people that extend beyond the life of a single project.”**

enough time, all sorts of locally relevant questions that were not part of the original project could be investigated by local researchers. But, well-resourced investigators in high-income countries – who were not part of the original project – are often better placed to conduct secondary analyses.

Unforeseen difficulties are arising around publishing, too. Currently, the costs to publish an article in gold open-access journals (which typically range from US\$500–\$3,000) are prohibitive for most researchers and institutions in LMICs. The University of Cape Town, for example, which produces around 3,300 articles each year, has an annual budget of \$180,000 for article-processing costs. This covers only about 120 articles per year.

Because of this, researchers in these countries frequently publish their papers in

subscription-based journals. But scientists working in similar contexts can’t access such journals because the libraries in their institutions are unable to finance subscriptions to a wide range of journals. All this makes it even harder for researchers to build on locally relevant science.

Such imbalances in global research collaborations – which stem from a complex mix of racial discrimination, systemic bias and major disparities in funding and resources – impact the integrity of research in numerous ways.

As recently as 2019, a group of students and their professor at a university in South Africa drew racist conclusions from their study of the cognitive abilities of Coloured South African women (Coloured is a recognized racial classification in South Africa). Their findings have since been debunked, and an investigation concluded that there was no deliberate intention to cause harm. A lack of diversity among the researchers, and possibly among the reviewers and editors, might have contributed to the publication of this research, which has now been retracted by the journal involved.

Power imbalances also skew research priorities, with investigators pursuing goals that frequently overlook the needs of local people.

### Improve fairness and equity

The Cape Town Statement is not the first guideline on research fairness and equity, particularly in collaborations. Indeed, various documents informed our discussions, including the guiding principles of the Commission for Research Partnerships



PAULA BRONSTEIN/GETTY

A volunteer has blood withdrawn for testing as part of an HIV vaccine trial in Bangkok.

with Developing Countries (KFPE), which focuses on collaborations involving Swiss institutions; the Global Code of Conduct for Research in Resource-Poor Settings, a resource for those striving to ensure that science is carried out ethically in lower-income settings; and the BRIDGE guidelines, which aim to foster fairness and integrity in global-health epidemiology.

Furthermore, a tool for evaluating practices, called the Research Fairness Initiative, has already been developed by the Council on Health Research for Development, an international non-governmental organization that aims to support health research, particularly in LMICs. By providing questionnaires and guidance, the Research Fairness Initiative enables institutions, individual researchers and funders to evaluate their current practices, and if necessary, improve them.

The Cape Town Statement differs from these other guidelines and tools, however, in that it recognizes that unfair practices can harm the integrity of all research, no matter the discipline or context. Specifically, it focuses on the following four broad actions.

### Increase diversity and inclusivity

More funders from high-income countries must include diversity stipulations in their calls for grant applicants. In 2020, for example, the second European and Developing Countries

Clinical Trials Partnership programme (EDCTP2) in conjunction with the UK Department of Health and Social Care, asked applicants to apply for funding for projects specifically aimed at “addressing gender and diversity gaps in clinical research capacity” in sub-Saharan Africa. (The EDCTP is a partnership between countries in Europe and sub-Saharan Africa, supported by the European Union.)

Researchers in high-income countries must also work harder to collaborate in more meaningful ways with people from different disciplinary, geographical and cultural backgrounds. One way to do this is to establish long-term relationships with people that extend beyond the life of a single project.

Research institutions – be they universities, non-governmental organizations, or national or transnational science councils – should develop and implement policies, structures and processes that support and promote diversity and inclusivity in research.

The London School of Hygiene and Tropical Medicine has been a major player in global-health research for many decades. Since 2019, a volunteer group of staff and students at the university has been trying to address the fact that the organization’s members have often held unacknowledged positions of advantage through its Decolonising Global Health initiative. So

far, this has involved various undertakings, including a series of educational lectures.

### Encourage fair practice in research

All stakeholders, from researchers, institutions and funders, to journal editors and publishers, must take steps to ensure that they are not exacerbating power imbalances in research collaborations, but instead helping to remove them.

Funders from high-income countries should discourage parachute or helicopter research – in which well-resourced researchers conduct studies in lower-income settings or with groups who have been marginalized historically, but fail to involve local researchers or communities in all stages of the research. Funders can do this by including diversity stipulations in their calls for grant applicants, but also by funding local researchers directly.

Although many need to follow suit, some funders are making progress on this front. Currently, about 60% of the grants awarded by the EDCTP go directly to institutions in sub-Saharan Africa. Similarly, in 2021 the US National Institutes of Health (NIH), launched a \$74.5 million five-year project called Data Science for Health Discovery and Innovation in Africa (DS-I Africa). This is being led by African scientists, and is creating a pan-African data network designed to address African research priorities<sup>4</sup>.

As well as requiring that researchers from

LMICs lead collaborations, funders (and research institutions) should insist that projects involving multiple countries begin with a period of discussion involving all potential stakeholders. Before any research is conducted, the roles of each team member, and how they will receive recognition, should be defined and agreed on. Moreover, requiring that projects be fully and transparently budgeted, with the costs of maintaining already existing infrastructure included, would help to ensure that better resourced institutions shoulder a fairer share of project costs.

Publishers and journal editors must question submissions from authors if data have been collected in a low- or middle-income country, but the lead and collaborating authors are from high-income countries.

Some are already taking steps in this direction. *The Lancet* has started rejecting papers that are submitted by researchers from outside Africa, with data collected from Africa, but with no mention or acknowledgement of a single African collaborator. Similarly, Nature journals now encourage authors to make various disclosures on inclusion and ethics when submitting manuscripts.

The obstacles that make it harder for researchers working in low-resource settings to participate in ‘open science’ need to be identified and addressed by publishers, and other national and global stakeholders, such as science councils and funders.

Wherever possible, funders should allow data collected by researchers in LMICs to be embargoed for two years, for example, to give investigators time to conduct secondary analyses and to share their data with collaborators at their discretion. Meanwhile, journals and publishers should adjust article processing costs for authors in low-resourced regions.

Over the past 20 years, more than 200 publishers have partnered with Research4Life, a platform established in 2002 dedicated to making some peer-reviewed content available to students and researchers in LMICs. But many of the countries that are major contributors to research, such as South Africa, Brazil, Argentina and India, do not meet the criteria for accessing knowledge through this platform, or for fee waivers or reductions in cost for open-access publishing.

### Provide infrastructure

Researchers in LMICs are often disadvantaged because their institutions have underdeveloped research management and financial systems. With scant or no assistance from lawyers, administrative assistants, financial managers and project-management staff, they struggle to meet the ‘due diligence’ requirements of some funders in high-income countries. (Frequently this involves answering hundreds of questions in multi-page documents about institutional and research

governance processes and policies.)

Both funders and collaborating institutions must take steps to enable the development of research-support systems in LMICs. This could mean paying for computing infrastructure, mentorship programmes, open-access publishing, or the training and salaries of project and financial managers, for example.

Several controversies in research ethics, which occurred as a result of HIV research projects undergoing ethical scrutiny during the height of the HIV epidemic in the 1980s and early 1990s, prompted the Fogarty International Center at the NIH to launch the International Bioethics Education and Career Development Award in 1999. The aim was to ensure that there were strong research ethics committees in LMIC institutions, with adequately trained members, to review studies and meet international ethics and regulatory standards required by US funders. Thanks to this and subsequent efforts, hundreds of people in Africa and Asia have been trained in research ethics and continue to serve on review boards.

Many more initiatives like this – that invest in infrastructure and training over the long term – are needed.

The governments of LMICs also need to

## “Funders from high-income countries should discourage parachute or helicopter research.”

recognize the value of funding research, both to address locally relevant priorities and to reduce their nations’ reliance on funders from high-income countries. Matched funding schemes could help, whereby governments commit to give institutions the same amount of funds as those obtained from other sources for nationally identified high-priority research. Launched in 2015, the Science Granting Councils Initiative aims to strengthen the management of research grant funding in 17 countries throughout Africa. Achieving its goal of bringing more support for and control of scientific research into the continent will require governments of African countries to prioritize research funding.

### Recognize Indigenous knowledge

During the 2000s, researchers from the United Kingdom and other high-income countries obtained blood samples from people of the San community in Namibia for genetic research without always adequately explaining what those samples would be used for, or reaching any benefit-sharing agreements with the community.

The San people have since developed their own code of ethics – a value-based set of principles that researchers must adhere to before trying to obtain samples or information

from them (see [go.nature.com/3yz7ash](https://go.nature.com/3yz7ash)). In principle, this code could be used by researchers working with other Indigenous communities, if codes specific to a particular community don’t yet exist.

Ensuring that community members or knowledge-holders, who might not have formal qualifications, are included in research teams – with their contributions being adequately valued – is another way in which local knowledge can be incorporated equitably<sup>5</sup>.

### Global equity for global problems

Many of the greatest challenges facing humanity – climate change among them – are disproportionately affecting people living in LMICs. And many of these challenges have arisen largely because of a long history of colonial exploitation and inequitable use of Earth’s resources. Yet last year, reports of systemic bias and the contributions of researchers from LMICs being sidelined were made, even in the Intergovernmental Panel on Climate Change.

Unfairness, inequity and a lack of diversity must no longer prevent the global research enterprise from maximizing scientific integrity and from realizing the ultimate societal value and benefits of research.

### The authors

**Lyn Horn** is a bioethicist and director of the Office of Research Integrity at the University of Cape Town, South Africa. **Sandra Alba** is an epidemiologist at KIT Royal Tropical Institute, Amsterdam. **Gowri Gopalakrishna** is an epidemiologist and policy scientist at Maastricht University, the Netherlands. **Sabine Kleinert** is a senior executive editor at *The Lancet*, Munich, Germany. **Francis Kombe** is a founding member of the African Research Integrity Network and a Wellcome Trust research fellow in Nairobi. **James V. Lavery** is the Conrad N. Hilton Chair in Global Health Ethics, professor in the Hubert Department of Global Health in Rollins School of Public Health, and faculty of the Center for Ethics at Emory University, Atlanta, Georgia, USA. **Retha G. Visagie** is the manager of the Office of Research Integrity at the University of South Africa, Pretoria, South Africa. A full list of working-group members accompanies this Comment online (see [go.nature.com/42ns3sw](https://go.nature.com/42ns3sw)) e-mail: [lyn.horn@uct.ac.za](mailto:lyn.horn@uct.ac.za)

1. Parker, M. & Kingori, P. *PLoS ONE* **11**, e0163579 (2016).
2. Naidoo, A. V., Hodkinson, P., Lai King, L. & Wallis, L. A. *BMJ Glob. Health* **6**, e004612 (2021).
3. Odjidja, E. N. *Lancet* **9**, E1365 (2021).
4. Haberer, J. E. & Boum II, Y. N. *Engl. J. Med.* **388**, 387–390 (2023).
5. Schroeder, D., Chennells, R., Louw, C., Snyders, L. & Hodges, T. *Camb. Q. Healthc. Ethics* **29**, 285–301 (2020).

The authors declare no competing interests.