



## Biomedical research and capacity building: Bilateral collaboration between research institutes in South Africa and Cameroon

**To the Editor:** Collaboration is important in standardising research practice. We established a successful partnership between the Virology/Immunology Unit at the Centre for the Study and Control of Communicable Diseases, University of Yaoundé I, Cameroon, and the Division of Medical Virology, Stellenbosch University, South Africa (SA). Our research is focused on HIV, hepatitis, HPV and tuberculosis and on capacity building. We briefly highlight the challenges we have faced.

The majority of African countries are classified as low- or middle-income countries.<sup>[1]</sup> Many African countries do not have the capacity to perform much-needed basic health research. Factors that hamper progress include lack of resources, limited knowledge and the absence of financial incentives,<sup>[2]</sup> and have resulted in gaps in basic scientific knowledge. There is a strong need to strengthen African research and development.<sup>[3]</sup> Health research on the continent has focused on HIV/AIDS, malaria and tuberculosis, as these are the communicable diseases with the highest health burden.<sup>[4]</sup> There are many areas of neglected research that could be strengthened, given the necessary resources.<sup>[5]</sup> The most substantial research for the continent has come from SA, Nigeria and Kenya, contributing more than 50% of health publications.<sup>[4]</sup> Collaboration has the potential to strengthen research capacity.<sup>[6]</sup> African research institutions, however, do not collaborate with each other, but seek partnerships with the USA or Europe, in order to secure funding and insure high-quality outputs. Our study involves an African-African collaboration (middle to low income).

### Research and funding

Successful research relies on sustainable funding for laboratory reagents, equipment, salaries, students and capacity development. Most of the funding for African research comes from outside Africa, such as from the National Institutes of Health, Wellcome Trust and the European Union-Africa partnerships.<sup>[7,8]</sup> The African Union has previously committed 1% of its GDP to research, while local governments only spend a fraction of that on health research.<sup>[9]</sup> We ourselves have secured funding from the HIV Trust (UK) and SA's National Research Foundation (NRF). Student and staff mobility is generously supported by our institutional travel grants, which provide incentives to promote African collaboration. The NRF has a mandate to promote research focus areas in the country and within Africa.<sup>[10]</sup> We continue to seek for country-specific and international grants.

### Capacity building

There is no doubt that human expertise is extremely valuable. There is a general lack of researcher professionals in Africa.<sup>[2]</sup> We have engaged in research projects that facilitate capacity building. We jointly supervise postgraduate and medical students. Mobility grants have allowed a small group of students to receive training at our partner institutions, training that they would not otherwise have received. Many qualified students leave their research environment after their studies for greener pastures.<sup>[11]</sup> We have also seen that many postgraduates often do not publish their work, other than their formal thesis, as doing this holds no benefits for their immediate careers in Africa. A huge amount of completed research is therefore lost to the scientific community. If we are going to build research capacity, we need to maintain qualified researchers and create an atmosphere conducive to research.

### Cultural differences

Africa is highly diverse in its cultures. We need to consider the social, political and economic environment of each country. SA, with 11 official languages and many racial and ethnic groups, has a background of segregation and is still dealing with many sensitive

issues surrounding the topic. SA has seen a huge influx of African migrants seeking better opportunities. This includes the research sector, with many African students doing their formal training at SA institutions but not returning home after their studies.<sup>[12]</sup> Cameroon is mainly English and French speaking, and has approximately 250 ethnicities, each with its own cultural background. However, research should not be done in isolation. We can achieve much more together. Partners should agree beforehand on their joint focus areas, respecting cultural traditions while creating platforms for collaborative projects. Working with different international groups should be seen as expanding the research niche, while giving the opportunity to expand our knowledge of world cultures.

### Conclusion

We believe that an intercontinental partnership has the potential to enhance research outputs for Africa. We, as African scientists, need to prioritise and focus on key research areas.<sup>[4]</sup> There has been significant progress, with many programmes in place to promote research within Africa. These include the World Health Organization Regional Office for Africa, African Society for Laboratory Medicine, and Strengthening Laboratory Management Toward Accreditation programmes.<sup>[13]</sup> We have had several postgraduate students working on our research projects, some of whom who have already obtained their degrees. Various students also had the opportunity to visit their partner laboratories. We believe that this facilitates capacity development. Sustainable funding sources remain the biggest challenge. With the combined strength of our student, staff and research capabilities we are aiming to enhance the quality and quantity of our outputs, and we have the ability to produce significant research data that can positively influence health policies in Africa. We strongly recommend that African countries focus on building and maintaining research capacity on the continent.

**Authorship.** GBJ and GMI contributed equally to this letter. They are principal investigators at their respective institutions.

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1. World Bank data. <http://data.worldbank.org/about/country-and-lending-groups> (accessed 1 September 2016).
2. Nachege JB, Uthman OA, Ho YS, et al. Current status and future prospects of epidemiology and public health training and research in the WHO African region. *Int J Epidemiol* 2012;41(6):1829-1846. DOI:10.1093/ije/dys189
3. Nwaka S, Ilunga TB, da Silva JS, et al. Developing ANDI: A novel approach to health product R&D in Africa. *PLoS Med* 2010;7(6):e1000293. DOI:10.1371/journal.pmed.1000293
4. Uthman OA, Wiysonge CS, Ota MO, et al. Increasing the value of health research in the WHO African Region beyond 2015 – reflecting on the past, celebrating the present and building the future: A bibliometric analysis. *BMJ Open* 2015;5(3):e006340. DOI:10.1136/bmjopen-2014-006340
5. Hopkins AD. Neglected tropical diseases in Africa: A new paradigm. *Int Health* 2016;8(Suppl 1):i28-i33. DOI:10.1093/inthealth/ihv077
6. Volmink J, Dare L. Addressing inequalities in research capacity in Africa. *BMJ* 2005;331(7519):705-706. DOI:10.1136/bmj.331.7519.705
7. H3Africa consortium. Research capacity: Enabling the genomic revolution in Africa. *Science* 2014;344(6190):1346-1348. DOI:10.1126/science.1251546
8. Collins FS, Farrar J. Opinion: On 'Funding research in Africa'. 28 November 2014. *The Scientist: Exploring Life, Inspiring Innovation*. <http://www.the-scientist.com/?articles.view/articleNo/41549/title/Opinion--On--Funding-Research-in-Africa/> (accessed 7 September 2016).
9. Khan MJ. Africa's plan of action for science and technology and indicators: South African experience. *African Statistical Journal, Human Sciences Research Council* 2008;163-176. <http://www.hsra.ac.za/en/research-data/view/3863> (accessed 7 September 2016).
10. South African National Research Foundation. [www.nrf.ac.za](http://www.nrf.ac.za) (accessed 1 September 2016).
11. Adedokun BO, Olopade CO, Olopade OL. Building local capacity for genomics research in Africa: Recommendations from analysis of publications in Sub-Saharan Africa from 2004 to 2013. *Glob Health Action* 2016;9:31026. DOI:10.3402/gha.v9.31026
12. Statistics South Africa. Mid-year population estimates 2015. 31 July 2015. <https://www.statssa.gov.za/publications/P0302/P03022015.pdf> (accessed 1 June 2016).
13. Alemnji GA, Zeh C, Yao K, Fonjongo PN. Strengthening national health laboratories in sub-Saharan Africa: A decade of remarkable progress. *Trop Med Int Health* 2014;19(4):450-458. DOI:10.1111/tmi.12269

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