AFRICA UNIVERSITIES' DAY CONCEPT NOTE

7-12 NOVEMBER 2022

THEME: OPEN SCIENCE - BRINGING EQUITY TO RESEARCH & PUBLISHING

INTRODUCTION

The theme of the 2022 Africa Universities' Day is "**Open Science - Bringing Equity to Research and Publishing for the African Research Community**". This theme is inspired by the need to increase the community's participation in research, visibility of African research, publication rate, and the overall number of researchers through the promotion of the accurate verification of scientific results.

Open Science can be defined as a set of practices that increase the transparency and accessibility of scientific research (van der Zee & Reich, 2018). It is an approach to the scientific process that focuses on making research more transparent by (1) sharing research data, (2) sharing methodologies including small codes, labels and categorization used to analyse data (3) involving citizens in the research process and (4) making the findings immediately accessible and freely available to everyone. These steps are achieved by combining the tools of scientific enquiry and discovery and information technologies. Thereafter the knowledge is shared by means of digital and collaborative technology, expert groups, publications, news and events, among others. Open Science aims to bolster scientific research in part by testing the reproducibility and replicability of findings (Crüwell et al., 2018).

The concept of Open Science has been proven as a potential tool for speeding up scientific enquiry and discovery for the benefit of the research and education communities. In the absence of Open Science there is prevalence of duplication in collecting, creating, transferring, and re-using scientific information and knowledge. By combining the tools of science and information technologies to promote Open Science, the African Research community stands to benefit from an equitable environment within which research and publishing are conducted.

Since the onset of the Covid-19 pandemic, the research and scholarly community has responded to the challenges posed by collaborating and sharing findings at an unprecedented rate, largely by adopting Open Science (OS) practices (Kadakia et al., 2021). These practices include sharing research data (Moorthy et al., 2020) and using preprints to disseminate research findings to peers (Fraser et al., 2021). According to Tavernier (2020), further to these

researcher-led activities, most publishers in the scholarly sector endeavored to make their Covid-19 related research freely available. It is noteworthy that these efforts were mirrored by news outlets that removed paywalls for Covid-related coverage (Retta, 2021). These were also accompanied by growing efforts in science communication by scholars, academic institutions, and journalists, resulting in increased public engagement in research, and creating the opportunity for communities around the world to learn about complex topics such as vaccines and their effectiveness. In a sense, the pandemic brought true meaning in real time to what Open Science could achieve when open research practices are imbued into the mainstream research, bringing equity to the South with respect to accessing knowledge and contributing to global scholarship.

Open Science practices are not well known among the African research community and the implementation of the Open Science concept as part of the research processes is still "foreign". Open Science is sometimes wrongly associated with only pure sciences and engineering, but on the contrary, it is inclusive of all forms of scholarship, including humanities and social sciences, as well as STEM fields. The wide spectrum of Open Science activities opens the research process to a greater number of actors at different stages of the research cycle, causing the final output to become enriched and to make meaningful impact to the community, resulting in equity to both developing and developed countries. Through Open Science, research findings are more easily shared and traditional barriers to knowledge, such as paywalls, are lowered or removed.

THE PROPOSED FRAMEWORK FOR OPEN SCIENCE IMPLEMENTATION BY AFRICAN UNIVERSITIES

Most of the practices that enable institutions to move towards implementing Open Science approaches and to reap the gains the concept brings for the benefit of society, are within the ambit of those institutions, including African higher education institutions and their researchers. Such gains include the reduction of duplication in the collection, creation and re-use of scientific materials, the promotion of societies' trust in science, active participation of citizens in data collection and scientific experiments, among several others.

The provision of an enabling environment and policies to support Open Science practices; the implementation of good research data management practices and supporting open data

sharing are all great steps that institutions can adopt to foster a culture that promotes Open Science.

It is worth highlighting that there is no one size fits all approach/framework of developing or implementing a road map to Open Science, thus African higher education institutions are encouraged to adopt specific best practices based on an assessment of their research processes, research ethics and culture, and a broad identification of the benefits Open Science will bring to the institution.

As we celebrate the achievement of Higher Education and its contributions towards the development of the continent through the Africa Universities' Day, the AAU is bringing all key stakeholders together to share ideas and experiences, while discussing how Open Science can be harnessed to support the management of African Research to increase transparency, improve community participation, enhance visibility, and improve data preservation.

The 2022 Africa Universities' Day celebrations will be engaging Management and stakeholders of HEIs to jointly come up with a broad practical framework around which institutions can begin to generate their own customized strategies/frameworks to fit their specific situations. To kickstart the discussions, the focus areas to guide the development of the Open Science framework will include the following proposed key actions that HEIs must put in place to move towards Open Science adoption at an institutional level:

1. The development of a program highlighting what Open Science is, and what cultural changes need to be carried out within institutions to facilitate the incorporation of the principles and practices of Open Science

2. The establishment of advocacy programs to highlight the benefits of Open Science and raise awareness of Open Science policies and issues to Early Career Researchers.

3. The review of research ethics/policies to ensure Open Science issues such as transparency and reproducibility are addressed and explained to Early Career Researchers

4. The demonstration of how transparency from Open Science stops unethical behaviors such as ghost authorship, the deliberate omission of authors from research outputs despite their substantial contributions, unethical peer review behaviors, plagiarism and theft of ideas

5. The promotion of FAIR data principles within an institution. This principle requires that raw data on which conclusions are based should be made available to other researchers

OPEN SCIENCE SUB-THEMES TO BE DISCUSSED DURING THE 2022 AU DAY

The 2022 Africa Universities' Day celebrations, will provide the much-needed platform for higher education stakeholders to discuss the following important sub-themes:

1. Open Data practices in research processes
2. Instituting Research Data Management Plans for data management in higher education institutions
3. Supporting open review for research transparency
4. Building a culture of Open Scholarship in African higher education institutions
5. Building, revamping, and increasing awareness of African Institutional Repositories

The intended outcomes of the discussions of the subthemes include the following:

1. Increased advocacy for the adoption of best practices to further generate knowledge about Open Science, and its impact in interdisciplinary science research
2. Institutions inspired to develop standards and tools that support engagement with research processes by diverse stakeholders.
3. Opportunities created for scholars and communicators of research to learn from one another.
4. Increased advocacy for mentorship of students and early career researchers in a wide range of open research practices and
6. Increased appreciation of the potential of Open Science to support faster transitioning from research to innovation design.
7. A renewed commitment by Africa HEIs towards implementing policies and key actions to promote the sharing of research findings and data and to implement a reward system to motivate researchers that subscribe to the open science agenda.

The week-long celebration will focus on improving knowledge about Open Science among institutions who create and communicate knowledge, as well as to the societies who

ultimately consume such research findings. It will also focus on what higher education institutions managers require to ensure successful implementation of Open Science policies and mandates within their institutions, while promoting increased engagement and participation by diverse stakeholders to benefit from the advantages presented by Open Science.

BACKGROUND INFORMATION ON THE AFRICA UNIVERSITIES' DAY

The Africa Universities' Day has been held on November 12 every year since 2006 when it was established as a day to celebrate the contributions of the Higher Education Sector to the development of the continent. Over the years, events in the form of exhibitions and lectures have been organized by the AAU Secretariat and AAU-member Institutions to observe the day. November 12 marks the day for the establishment of the Association of African Universities (AAU).

OBJECTIVES OF THE AFRICA UNIVERSITIES' DAY CELEBRATIONS

1. Create awareness on the importance of higher education in Africa
2. Promote dialogue on how to improve higher education in Africa
3. Celebrate the success stories of higher education in Africa

CELEBRATION OF AFRICA UNIVERSITIES' DAY BY AAU MEMBER INSTITUTIONS

Each AAU member institution is invited to celebrate the Day by organizing a suitable forum for public dialogue as a means of raising awareness of the critical issues surrounding the selected theme. Alternatively, members can join the virtual events being organized by the AAU Secretariat and the Regional Offices (North Africa Regional Office and East Africa Regional Office).

We also encourage universities to arrange joint celebrations on this day. AAU recommends universities get involved by planning activities around the theme and inviting Ministries of Education, University Councils, Committees of Vice-Chancellors, other public and private universities in each country that are non-members of this Association, research institutions, the media and the general public, to join in the celebration to give visibility to the Day and to promote the higher education activities in each country.

After the event all institutions are requested to send reports to the AAU, including photographs of the celebration. These will be published in the AAU e-Newsletter and on its website and social media pages.

ABOUT THE AAU

The Association of African Universities (AAU) is the apex organization and forum for consultation, exchange of information and co-operation among institutions of Higher Education in Africa.

It represents the voice of Higher Education in Africa and supports networking by institutions of Higher Education across the five regions of Africa. The AAU has its headquarters in Accra, Ghana, and was founded in Rabat, Morocco, on November 12, 1967 – following initial planning and discussions held at the University of Khartoum in Sudan. The AAU has a current membership of over 400 members and is still counting. The AAU provides a platform for collaboration, networking, joint research, co-reflection, consultation, debates, and co-operation on diverse issues pertaining to higher education.

REFERENCES

Crüwell, S., van Doorn, J., Etz, A., Makel, M. C., Moshontz, H., Niebaum, J. C., Orben, A., Parsons, S., & Schulte-Mecklenbeck, M. (2019). Seven Easy Steps to Open Science. *Zeitschrift Für Psychologie*, 227(4), 237–248. https://doi.org/10.1027/2151-2604/a000387

Fraser, N., Brierley, L., Dey, G., Polka, J. K., Pálfy, M., Nanni, F., & Coates, J. A. (2021). The evolving role of preprints in the dissemination of COVID-19 research and their impact on the science communication landscape. *PLoS Biology*, 19(4), e3000959. https://link.gale.com/apps/doc/A660904300/AONE?u=googlescholar&sid=googleScholar&xid=06fb8372

Kadakia, K. T., Beckman, A. L., Ross, J. S., & Krumholz, H. M. (2021). Leveraging Open

    Science to Accelerate Research. *New England Journal of Medicine*, *384*(17), e61.

    https://doi.org/10.1056/nejmp2034518

Moorthy, V., Henao Restrepo, A. M., Preziosi, M. P., & Swaminathan, S. (2020). Data

    sharing for novel coronavirus (COVID-19). *Bulletin of the World Health*

    Organization, *98*(3), 150. https://doi.org/10.2471/blt.20.251561

Van der Zee, T., & Reich, J. (2018). Open Education Science. *AERA Open*, *4*(3), 1–15.

    https://doi.org/10.1177/2332858418787466