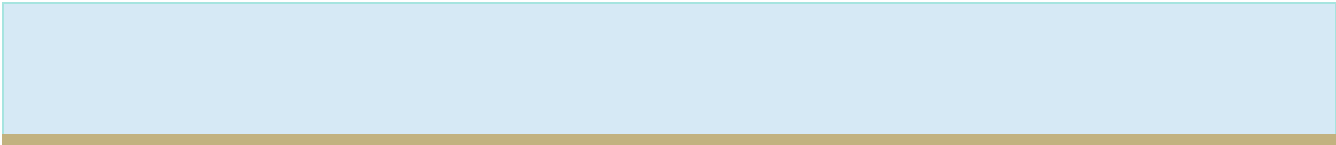


Early-Career Research Uganda (ECRU) Project



NEEDS ASSESSMENT SUMMARY

March 2023



**Network for Education &
Multidisciplinary Research Africa
(NEMRA)**



EASRN
The East Africa Scientific
Research Network



AWB | USF
Academics Without Borders
Universitaires sans frontières

Introduction

This project is a collaboration to enhance the capabilities of Early Career Researchers (ECRs) in Uganda. The Early Career Research Uganda (ECRU) project follows the proven Academic Without Borders ([AWB](#)) approach to addressing fundamental academic and research issues in the global south. Co-creation of knowledge is at the heart of all AWB projects, starting with a consultative process between AWB and the host institution that identifies the project's purpose and scope. Canadian volunteers are then vetted by the host institutions and AWB, and are added to the project team to assist in meeting the project objectives.

This interim report reflects these principles and provides:

- an introduction to the ECRU project,
- a summary of all aspects of the Needs Assessment phase, and
- an overview of the collaborative commitments and investments made by stakeholder groups to the ECRU project.

After a review of the ECRU landscape, this report focuses on the identification of key research needs and issues that currently impede the development and productivity of ECRs in Uganda. This Needs Assessment serves as the foundation to inform the development, pilot testing, and delivery of research training modules that will assist ECRs with the development of sustained programs of research, and to thereby advance Uganda's social, economic, and technological developments over the next decade and beyond.

Project Team

The project team comprises a unique multidisciplinary and multi-institutional combination of academic research capability and administrative expertise – with local faculty team leaders, expert project management from Academics Without Borders, senior academic volunteers from Canada, and local collaborators and research coordinators from diverse universities in Uganda.

Uganda Project Team members.

- Dr John Baptist Imokola, Assistant Lecturer, Makerere University – Project Coordinator
- Dr Aisha Jaggwe, Director of Research, Muteesa I Royal University – Team member
- Dr Juliet Kyayesimira, Lecturer, Kyambogo University – NEMRA Representative
- Dr Norman Mukasa, Affiliated Researcher, Muteesa I Royal University & EASRN Representative Member
- Dr Loice Natukunda, Lecturer, University of Lincoln, UK – Team member

AWB Representatives

- Freda Tong, Project Coordinator
- Corrie Young, Associate Executive Director

Canada Volunteers

- Dr Mike Brklacich, Professor Emeritus, Carleton University
- Dr Dave Valliere, Professor, Toronto Metropolitan University

Uganda Institutional Champions

- Dr Wilberforce Kabweru - School of Public Health, Makerere University
- Dr Fredrick Lugya – Busitema University
- Dr. Medard Twinamatsiko – Mbarara University of Science and Technology
- Dr. James Wanziima – Bugema University
- Dr. Pamela Khanakwa - Makerere University
- Dr. Angella Nakapol - Uganda Christian University
- Dr Judith Nagasha - Kyambogo University
- Ms Nagawa Gorrete - Muteesa I Royal University

An Overview of Uganda's Research Landscape¹

Quote 1: The National Science, Technology and Innovation policy was set up to “strengthen national capability to generate, transfer, and apply scientific knowledge, skills and technologies that ensure sustainable utilization of natural resources for the realization of Uganda’s development objectives” (The National Science, Technology and Innovation Policy, 2009:13).

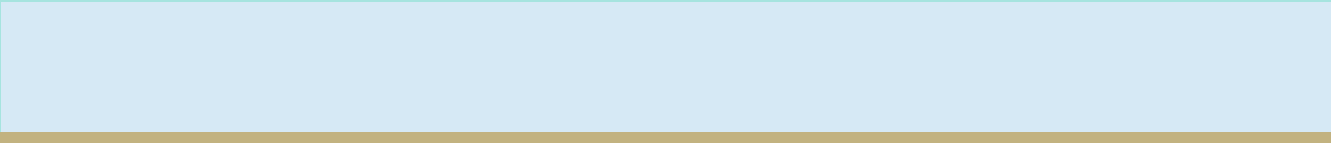
Quote 2: “The prospects for in-country support for strengthening research capacity at multiple Ugandan universities are growing; however, domestic funds still contribute only a tiny proportion of the resources devoted to research and research training” (Akuffo et al., 2014).

Recent investments in post-secondary education throughout Sub-Saharan Africa has boosted Masters and Doctoral graduation rates by 12% and 6% respectively, representing an initial step towards improving research capacity in the region. Recent evidence also confirms there is, not surprisingly, a lag between investments in advanced training and actual increases in research productivity, and peer-reviewed journal articles contributed by African universities account for about 1% of the global total. There is without doubt a small but growing reservoir of research capacity in the region, and one of the substantial challenges African universities will encounter over the next decade will be facilitating the transformation of today's ECRs into senior scholars and scientists who can develop on-going programs of research that will drive innovation and development, as well as provide the foundation for the next generation of African scholars and scientists.

Recent Ugandan trend changes in graduate education and in research capacity align with broader Sub-Saharan trends. That is, only a minority (12%) of faculty at Ugandan universities currently hold doctoral degrees, the majority (42%) have a Masters degree, and the remainder, which accounts for about double the number of faculty with PhDs, hold either a Bachelor's degree or post-graduate diploma. This imbalance imposes limits on overall research capacity and it also restricts the capacity of senior faculty to mentor ECRs who have yet to acquire research training expertise that is a prerequisite for leading international projects. In addition, substantial teaching and administration commitments make it difficult and at times impossible for ECRs to establish a workload balance that facilitates long-term research success.

Overall, these trends suggest modest nation-wide investments over the next decade in ECR training could reap substantial benefits for Uganda. A program employing a Train the Trainer (TtT) model that

¹ Additional information about graduate training and research capacity trends in Africa and in Uganda is presented in the Suggested Reading List at the end of this report.



targets recent PhD graduates who are in the early stages of their academic careers as well as current faculty with Master's degrees could expedite growth in the research capacity of these cohorts. ECR mentoring capacity is currently constrained by a dearth of senior faculty members with international research track records and the TtT approach will also provide a workable option to overcome this barrier over the next few years.

Two recently formed independent groups, East African Scientific Research Network (EASRN) and Network for Education and Multidisciplinary Research Africa (NEMRA), are in the earliest stages of building a critical research mass in Ugandan universities in general and more specifically, exploring how best to bridge gaps between institutional expectations for ECRs and what is possible given their limited support. The ECRU project, a NEMRA/EASRN/AWB collaboration, builds on this foundation and aims to address the root causes of this low research productivity by developing targeted modules that will equip new trainers on how to mentor junior faculty, and thereby to significantly increase research productivity and Uganda's contribution to global research outputs.

ECRU Project

Scope and Purpose

This project builds on recent [EASRN](#) and [NEMRA](#) successes and aims to advance research productivity of ECRs throughout Uganda. Two related phases make up the project, with several elements of collaboration and the co-creation of knowledge embedded within each phase. The project’s overall purpose and approach evolved from a series of discussions involving representatives from EASRN, NEMRA and AWB. These culminated into the signing of an MOU on September 9th, 2022.

- **Phase 1: Needs Assessment** (mid-2022 to mid-2023) – This initial phase focuses on determining key factors that currently impede the capacity of ECRs to establish and sustain research capacity and productivity over the medium to long-term. It is informed by information gathered from ECRs and creates the foundation for Phase 2.
- **Phase 2: Train the Trainers** (mid-2023 to end of 2023) – In this phase, the focus switches to the development, piloting, and refinement of a series of research training modules that will address research issues identified in Phase 1. It will employ a “train the trainer” (TtT) approach, where a series of research training modules developed by AWB volunteers in partnership with the Project Leaders will be piloted with future trainers at selected universities in Uganda - including Makerere University, Muteesa I Royal University, Bugema University, Uganda Christian University and Kyambogo University. This pilot experience should lead to refinements and improvements to the training modules. These will then be formally transferred to EASRN and NEMRA for distribution within Uganda as a new self-sustaining national capability.

Phase 1: ECRU Needs Assessment

The Needs Assessment phase followed a consultative process that involved all project team members as well as a wide array of Ugandan project collaborators. Figure 1 summarizes the activities within this phase.

Stakeholders:

ECRs

Deans
Univ Admin

Project team:

Project
Leaders

AWB
Volunteers

Collaborators

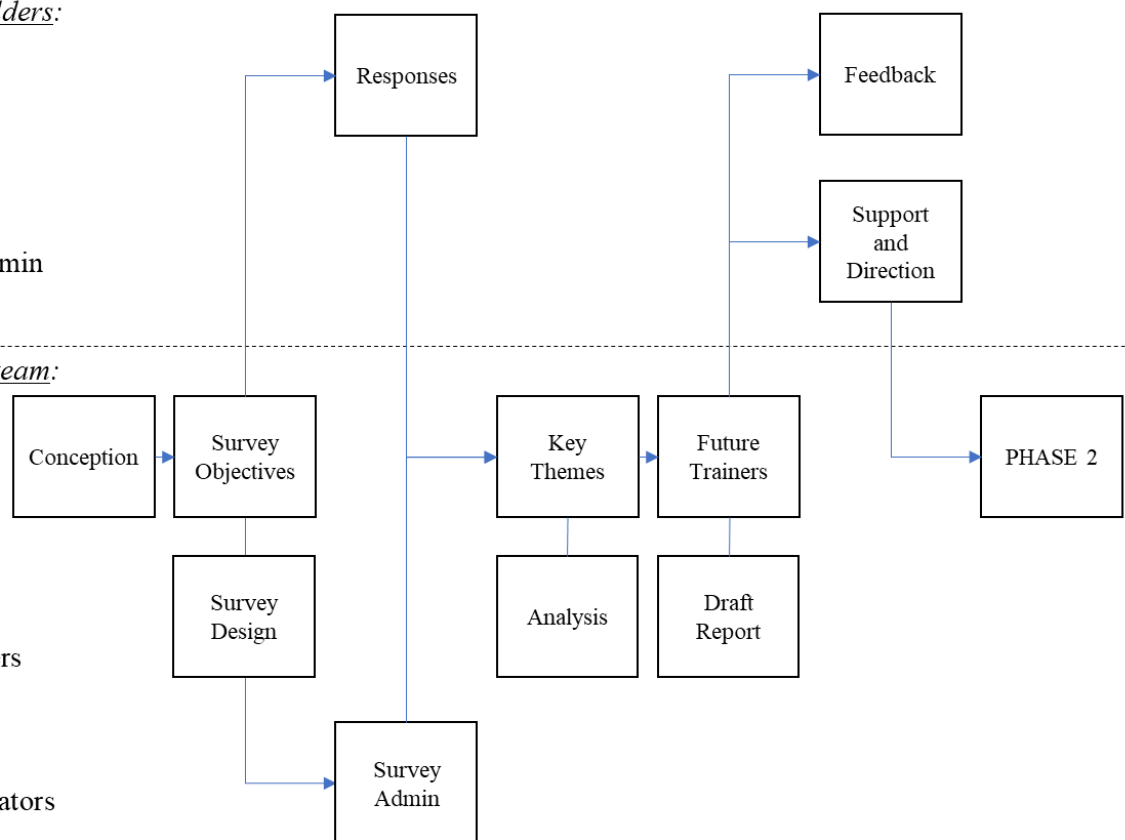


Figure 1: Needs Assessment Process

Survey Objectives and Design

This step commenced with the core project team developing a survey instrument designed to elicit ECRs' views on four research themes: Research knowledge, Research methods, Resources, and Career management. A total of sixty questions probed specific issues across the four themes, with respondents asked to indicate their current expertise and the importance of the issue. This approach was adopted as it allowed us to identify core research themes and issues that are impeding ECRs advancement (see Analysis and Key Themes below), and that would also inform Phase 2. The survey also posed ten questions of basic respondent profile information (e.g., gender, date of highest degree, place of employment, discipline). Participation was voluntary, and all survey respondents provided informed consent through a section that clarified the purpose and use of the survey, actions to ensure respondent confidentiality, and data storage provisions.

Survey Administration

In this step, the EASRN and NEMRA Project Leaders, in collaboration with coordinators at four Ugandan universities, launched the online survey on November 17, 2022. They identified and contacted potential ECRs, with follow-up reminders 4-6 weeks after the initial contact. Access to the survey was terminated on January 4, 2023. A total of 152 responses were received. After removing incomplete

responses and responses from non-ECRs, a total of 92 usable responses were obtained for use in analysis.

Analysis and Key Themes

This step analyzed the collected data to identify significant themes. Several research themes that are currently impeding the development and productivity of ECRs quickly emerged from the analysis². These are presented in Table 1.

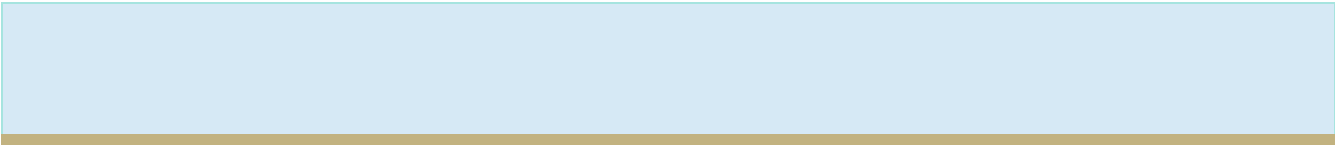
Theme	High-Priority Needs	Mid-Priority Needs
Knowledge	Upcoming funding	Project design Domain knowledge
Research methods	Spotting interesting gaps Qualitative analysis Quantitative analysis Theory building	Survey design Dataset management Editors and reviewers
Resources	Protected time Software Access to journals Institutional support	Research assistants Rewards and recognition
Career management	Pipeline management Grant writing	Project management Partnerships

Table 1: Key Themes in ECRs' Needs

At a higher level, the following needs are most apparent:

- **Securing Research Grants:** In increasingly competitive and time-sensitive environments, research funding is in flux and approaches to securing adequate research funding are evolving. ECRs have thus highlighted the importance of improving their capacity to secure research funding at local through international levels, including having better and more timely information about upcoming research opportunities, having better access to information that will help frame their research proposals, and developing enhanced grant writing skills.
- **Adequate Resourcing of Research:** Funding is, of course, of critical importance. But this was not the only resourcing issue raised by respondents. ECR advancement will also be dependent on having access to a reliable stream of highly qualified research assistants and better access to quantitative and qualitative analysis tools and software.

² Detailed response information, including analyses by domain (Medicine, Social science, Business, and STEM), can be found in the document "[ECRU Jan 25.pptx](#)", available on the EASRN website <https://easrn.org>

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- **Research Management:** Researchers are increasingly working in more complex and dynamic environments that routinely involve working with and leading large research teams, and requirements for greater accountability for larger research expenditures. Many ECRs have developed skills that are compatible with the management of smaller individual projects, so the transition to working on large, multi-faceted, international projects remains challenging.
 - **Career Management:** It is important to also acknowledge that ECRs' challenges reach beyond the direct research environment. It is important to situate ECR research advancement relative to other aspects of their professional development, such as teaching and graduate training, administration of university affairs, and participation in research forums and professional organizations.

Looking Ahead to Phase 2: Training the Trainers (TtT)

Phase 2 activities and timelines are presented in Table 2. The brief statements regarding each Phase 2 activity that follow indicate how Phase 2 will be rolled out. Fuller descriptions of Phase 2 activities will be made available in a separate report that will be shared towards the end of 2023.

Phase 2 Timeline and Activities: 2023								
Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Consult with Deans								
Development of Prototype Research Training Modules								
			Train the Trainer Module Testing					
				Module Refinement and Delivery to NEMRA & EASRN				

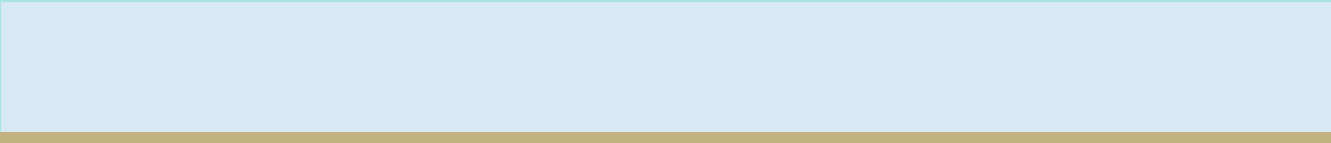
Table 2: Phase 2 Overview

During the 2nd quarter of 2023, Deans and other senior research managers at seven Ugandan universities (Makerere University, Muteesa I Royal University, Mbarara University of Science and Technology, Busitema University, Bugema University, Kyambogo University, and Uganda Christian University) will be briefed on the ECRU project and key findings from this ECR Needs Assessment. We will then seek their advice on how best to implement Phase 2, including identifying and supporting potential Research Trainers who will be invited to the TtT sessions during the 3rd quarter of 2023.

At the same time , the ECRU Project Team will develop prototype research training modules that will be rolled out during the TtT sessions. Key findings from this Needs Assessment will guide the development of the Prototype Modules, including the module themes as well as specific activities within each module. Prototype modules along with “homework assignments” will be shared with TtT session participants around mid-2023.

The ECRU Project Team will host the TtT sessions at Muteesa I Royal University in late July or August of 2023. Specific dates for these sessions and the venue will be confirmed by June 2023. The goal is to attract 20-25 potential ECR trainers to an approximately week-long set of interactive sessions. Participants will be briefed on each module’s content and several interactive training sessions will be simulated. Ample time will be set aside for participants to offer their feedback on the content and delivery of the prototype modules.

During the latter part of 2023, the ECRU project team will factor in feedback from the TtT sessions and revise the Prototype Modules. It is expected the final version of the Modules will be delivered to



NEMRA and EASRN by the end of 2023. AWB, NEMRA and EASRN will then work together to develop a proposal to deliver Phase 2 results and the passing on of ECRU project training skills in subsequent years.

Suggested Readings

Achanga, P.C., & Bisaso, R. (2018). "Higher education systems and institutions: Uganda", *Encyclopedia of International Higher Education Systems and Institutions*. Springer, Dordrecht DE.

ADEA (2015). "The role of research and post-graduate studies in African higher education", Summit on higher education on revitalizing higher education for Africa's future. The Association for the Development of Education in Africa (ADEA). Dakar, SN. 10 Mar 2015.

Chu, K.M., Jayaraman, S., Kyamanywa, P., & Ntakiyiruta, G. (2014). "Building research capacity in Africa: equity and global health collaborations", *PLoS Medicine*, 11(3).

Ngongalah, L., Emerson, W., Rawlings, N.N., & Muleme Musisi, J. (2018). "Research challenges in Africa: an exploratory study on the experiences and opinions of African researchers", *BioRxiv*, 446328.

Etomaru, I., Bakkabulindi, K.F.E., & Balojja, T.D. (2021), "Trajectory of doctoral education and training in Uganda.", East African School of Higher Education Studies and Development, College of Education and External Studies, Makerere University.