1. **Project Title:** Building a cohort of open scholarship trainers to boost adoption of DataCite open infrastructure services among the Consortium of Uganda University Libraries

2. **Project Type:** Outreach Activities

3. **Funder:** DataCite – under Global Access Fund (GAF) – Euros 10,425

4. **PI:** Dr. Fredrick Kiwuwa Lugya

5. **Beneficiaries:** 35 Participants (librarians, ICT professionals, and research administrators) selected among Consortium of Uganda University Librarians (CUUL) membership

6. **Project Goal:** Over the course of two (2) months, a team of librarians at Busitema University plan to develop and deliver a five-day training of trainers' workshop to a cohort of librarians, ICT professionals, and research administrators selected out of 76 institutional members of the Consortium of Uganda University Libraries (CUUL). This work will ignite a countrywide conversation on the benefits of open scholarship and open science and to increase awareness of integrating DataCite infrastructure services to make research discoverable.

7. **Project Outcome:** DOSCU participants will exhibit mastery skills to plan, prepare and deliver training on how to make research outputs open and discoverable using open infrastructure and services.

8. **Project Objectives:**

   Objective 1: Within the first (1) month, the librarians will create a publically available educational resource kit consisting of training curriculum, guidelines for facilitating the training, training materials, and assessments on open scholarship, open science and DataCite open infrastructure services. The training materials shall be added on the learning management system and participants enrolled into the workshop.

9. **Objective 2:** By the end of the two (2) months, deliver a five-day training to 35 trainees (librarians, ICT professionals, and research administrators) selected out of 76 institutional members of the Consortium of Uganda University Libraries.

[*Give some administrative info - so prepare slides on the project, funders, objectives, and give an outline of the topics to be covered in this workshop.*]

Workshop Learning Outcomes: The the end of the DOSCU workshop, the trainees should be able to:

a) Communicate to their institutional administrators why libraries and their institutions cannot afford to ignore implementing institutional repositories to make their research outputs open;
b) Explain how to go about using open infrastructure and services like Dspace and DataCite tools to make their research outputs open and discoverable;

c) Understand how to teach and train librarians, ICT professionals, and research administrators to implement DataCite research discovery and exploration tools and services like DOIs, metadata, APIs in their institutional repositories;
d) Become confident and have the knowledge to deal with difficult questions about making research outputs open and discoverable;
e) Be able to plan institutional repository and DataCite training activities and be aware of the best practices in training design for online, face-to-face and hybrid events;
f) Understand how to work with diverse audiences especially institutional administrators to attract funding towards DataCite activities;
g) Know how to evaluate the impact of the training and implementing institutional repositories and DataCite open infrastructure and services.

Main Topics Outline

Module 1: Introduction to Open Access

a) Scholarly Communication Process
b) Open Access: History and Developments
c) Rights and Licenses
d) Advocacy for Open Access
e) Open Access Research Impacts

Module 2: Open Access Infrastructure

a) Open Access Repositories
b) Open Journals
c) More About Open Approaches

Module 3: Interoperability and Retrieval

a) Resource Description for OA Resources
b) Interoperability Issues for Open Access
c) Retrieval of Information for OA Resources

Module 4: Resource Optimization

Module 5: DataCite Open Infrastructure

Module 6: Training and Train-the-Trainer

Introduction to Open Access

Open Access defined [*provide a link to the video - start with participants watching the video and them have a brainstorming session to learn more about OA*]

What lessons are we learning from this video - Key take homes - what we need to know as librarians - about OA

Progress of every profession, academic discipline and society at large rides on the back of research and development. Research generates new information and knowledge.

Information has its life cycle: conception, generation, communication, evaluation and validation, use, impact and lastly a fuel for new ideas.

Where is research published? - Research results are published in journals, conference proceedings, monographs, dissertations, reports, and now

the web provides many a new forum for its communication.

Since their origin in the 17th century, the journals have remained very popular and important channels for dissemination of new ideas and research. But why are journals a challenges in achieving this goal?

- high cost of production,
- cumbersome distribution,
- waiting time for authors to get published, and
- then more time in getting listed in indexing services,
- increasing subscription rates, and
- lastly archiving of back volumes have led to a serious problem known as “Serials Crisis”.

Is the e-journals addressing this problem? Maybe yes or no - what do you think? what is the role of the internet? The internet has played a very big role, but there is still a problem

Then in the beginning of the 21st century emerged the Open Access (OA) movement with the Budapest Open Access Initiative (BOAI). Philosophy of open access is to provide free of charge and unhindered access to research and its publications without copyright restrictions.

The other OA declarations at Berlin and Bethesda put it on strong footings. Its philosophy is: research funded by tax payers should be available free of charge to tax payers.

Research being a public good should be available to all irrespective of their paying capacity.

So, when we talk about OA, what do we mean??

The OA has many forms of access and usage varying from total freedom from paying any charges, full permission to copy, download, print, distribute, archive, translate and even change format to its usage with varying restrictions.

But also OA didn't come without challenges - what challenges have you see over the years limiting the OA movement??

In the beginning, OA publications were doubted for their authenticity and quality: established authors and researchers shied away both from contributing to and citing from OA literature. But Committee on Publication Ethics (COPE, 1997) and its code of conduct formulated in collaboration with DOAJ and OASPA, etc. have stemmed the rot.

What has changed over the years?

Now it is accepted that contributors to OA get increased visibility, global presence, increased accessibility, increased collaboration, increased impact both in citations and applications, and lastly instant feedback, comments and critical reflections.

One success story about OA is the Open Access Week celebrations - look at the OA week page and the Busitema University OA Week - events celebrations - and what the participants will do when they return to their institutions - brainstorm and plan events.

So, what are we going to learn?

At the end of this module, you are expected to be able to:

a) Define scholarly communication and open access, and promote and differentiate between the various forms of Open Access;
b) Explain issues related to rights management, incl. copyright, copy-left, authors' rights and related intellectual property rights;
c) Demonstrate the impact of Open Access within a scholarly communication environment.

Topics to be covered in this module – recap

Module 1: Introduction to Open Access

a) Scholarly Communication Process
b) Open Access: History and Developments
c) Rights and Licenses
d) Advocacy for Open Access
e) Open Access Research Impacts

a) Scholarly Communication Process

Objective: This topic introduces the concept of research lifecycle and scholarly communication discussing its history and evolution. It further looks in to the changes in the scholarly communication process with advent of web 2.0 & 3.0 tools and other ICT applications, and explores the changing role of the stakeholders in the process.

Learning Outcomes

After going through this topic the participants are expected to be able to:

- Describe the historical evolution of scholarly communication process;
- Explain the lifecycle of research in socio economic context;
- Understand the roles of different stakeholders, specially the role of librarians.

Areas of focus

- Research lifecycle
- History and evolution of scholarly communication
- Status and trends
- Role of stakeholders (Researchers/ authors, publishers, & libraries/ librarians)

Research Lifecycle

The research lifecycle diagram by the Joint Information Systems Committee (JISC) represented below shows an interconnected bicycle, the top one showing the research lifecycle, and emanating from the research process stage the data lifecycle interwoven below it.

Figure 1.1: Research Lifecycle[1]

[1] http://www.jisc.ac.uk/whatwedo/campaigns/res3/jischelp.aspx

Activity

Visit the Research Lifecycle diagram at JISC website at http://www.jisc.ac.uk/whatwedo/campaigns/res3/jischelp.aspx and identify the activities where libraries can play a major role and explain how libraries do it.

Identify the research outputs at each stage and explain how libraries can get engaged in collecting, disseminating, and preserving them

Research Life Cycle in Data Management

Data Management Consulting Group (DMConsult) of the University of Virginia Library representation of the steps in the Research Life Cycle (Fig. 1.2) is quite library centric where library services can be engaged. It focuses more on the data management aspects including metadata as well.

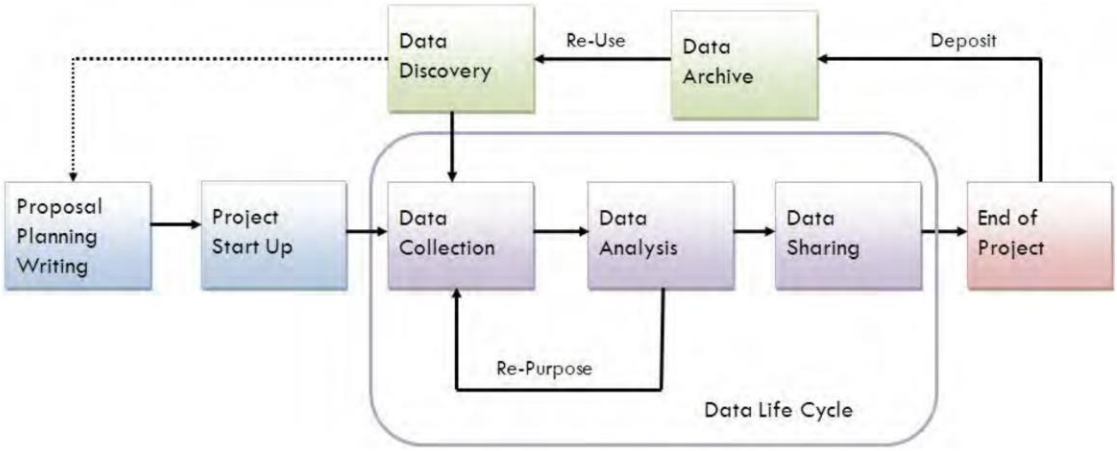

Figure 1.2: Research Lifecycle[2]

[2] http://dmconsult.library.virginia.edu/lifecycle

Other models

- Research360@Bath
- I2S2 Idealised Scientific Research Activity Lifecycle Model

Identify the research outputs at each stage and explain how libraries can get engaged in collecting, disseminating, and preserving them

Let us brainstorm on each of the components that make up the University of Virginia Data Management Research Lifecycle

- **Proposal Planning and Writing** – This step includes review of existing data sets, decision on whether to produce a new dataset (or combing existing), investigation of archiving challenges, consent and confidentiality, Identify potential users of data, cost analysis for archiving and consultation with archivists.

- **Project Start Up** – this step involves preparation of data management plan, take decisions about documentation form and content and conduct pilot test of materials and methods.
- **Data Collection** – For data collection one needs to look into the best practices. Collected data needs to be properly organized and also one needs to arrange for backups and storage. This step will also require quality assurance mechanism in place for data collection and also decision on access control and security aspects.
- **Data Analysis** – This step includes managing file versions, document analysis and file manipulations.
- **Data Sharing** – Depending on the data sharing policy decision on file formats has to be made. Consultation of archivist for advice on data storage may be required and cleaning up of redundant data needs to be looked into.
- **End of Project** - In the final step one may write paper/ article, submit report on findings and deposit data in a data archive/ repository.

History and evolution of scholarly communication

Definition of scholarly communication - "the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use.

The Scholarly Communication Lifecycle Diagram below

Figure 1.5: Scholarly Communication Process[6]

[5] http://www.arl.org/focus-areas/scholarly-communication
[6] http://ir.lib.uwo.ca/wlpres/19/

Activity: Identify the major milestones in the scholarly communication process and discuss how libraries have been adapting to these changes.

Role of Stakeholders in scholarly communication process – these include: researchers/ authors – publishers – libraries

Now, let us brainstorm on the roles of libraries in the scholarly communication process – with the advent in technologies, how has the role of libraries changed overtime?

- support scholarly community by creating institutional repositories as containers for the universe of digital materials produced through research and scholarship, not just the published record;
- help in searching relevant research data and published articles filtering and repackaging the same for better user experience;
- provide platform for self-archiving and self-publishing by scholarly community;
- take up the role of publisher through publication of e-journals and promotion and dissemination of the same;
- designing and maintaining institutional repositories for archiving research output of the institution

b) **Open access: History and development**

Objective: In this topic, the genesis of OA publishing is briefly discussed; highlights different benefits OA publishing promises, different approaches and business models of OA; and finally, this gives participants an overview of long-term preservation models available for OA and other scholarly electronic contents.

Learning Outcomes

After going through this topic, the participants are expected to be able to:

- Define and explain OA from the perspective of its historical developments;
- Distinguish between Green and Gold OA, and also understand emerging approaches to OA;
- Explain the OA advantages, and argue for promoting OA to scientific information;
- Identify business models for promoting OA; and
- Understand long-term digital preservation models available to OA knowledge resources.

Areas of focus

- Open access - definitions, Philosophy, Evolution
- Approaches to open access
- Benefits of open access
- Arguments against open access and responses
- Open access business models
- Long-term preservation models