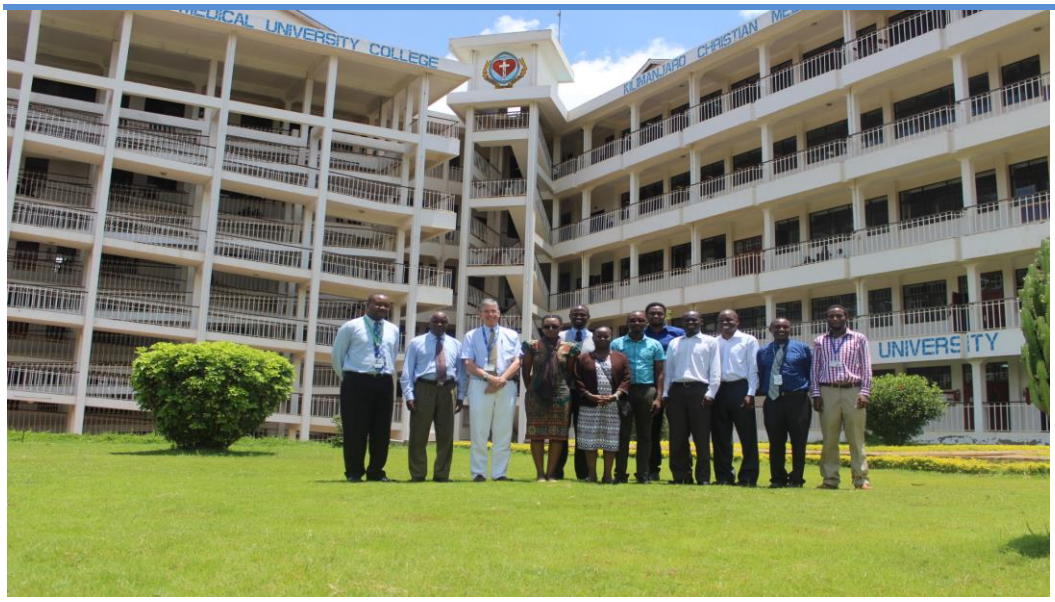
Advanced research training program workshop report

Hosted at: Kilimanjaro Christian Medical University College (KCMU Co): mini-boardroom)

Hosted by: KCMU co/CUHAS MEPI T

Date: 9th-11th March, 2016

Reported by: Monitoring and evaluation team



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Abbreviations:

ART -	Advanced Research Training
CITI -	Collaborative Institutions Training Initiatives
CUHAS -	Catholic University of Health and Allied Science
DPA -	Deputy Provost of Administration
FAO -	Funding Announcement Opportunity
KCMC -	Kilimanjaro Christian Medical Centre
KCMU Co -	Kilimanjaro Christian Medical University College
MEPI T -	Medical Education Partnership Initiatives Tanzania
NIH -	National Institutes of Health
ORI -	Office of Research Integrity
RCR -	Responsible Conduct of Research
RFA -	Request for Application
RFP -	Request for Proposal

Introduction

It is important that junior faculty (mentees) at KCMU Co and CUHAS understand the ethical foundations of scientific practices they encounter in their research work. In order to provide rigorous research training for junior faculty, preparing them to pursue their mentored research training projects, KCMU Co/CUHAS-MEPI T organized the first ART program workshop to ensure the enrolled ART trainees (mentees) are catered with aptitude to develop a successful academic career. The workshop was facilitated by local and international facilitators (Prof. Bartlett, Charles Muiruri, Ahaz Kulanga and Imani Israel). The workshop was held for three days at the KCMU Co mini-boardroom and brought together KCMU Co and CUHAS junior faculty enrolled on ART program.

The workshop covered all the aspects of ART program as an introduction and provided a matchless opportunity to bring together junior faculty from both institutions to present and discuss their study proposals. All six ART trainees participated in the ART program workshop. Participants were able to deepen their understanding of ART program and research conduct. The workshop provided books to participants as a guide to responsible conduct in research and on being a mentor to students in science and engineering for further referencing.

The book “On being a scientist; A guide to responsible research conduct” and “advisor, teacher, role model, friend: On being a mentor to students in science and engineering” by The National Academies was used as the framework/guide during the workshop for responsible conduct of research. The workshop also utilized case studies from ORI Introduction to the Responsible Conduct of Research to enhance the discussion. Participants were actively engaged in the discussions expressing their experiences in the case studies provided and even gave their own scenarios for discussion. Discussion of the case studies proved a valuable chance of hearing from the participants on their research conduct, lessons learnt and challenges faced in conduct of research.

The workshop ended with an evaluation of the workshop by the trainees, which revealed positive perceptions of the trainees towards the workshop.

Participants

The workshop was well attended with 15 participants (6 ART trainees, KCMU Co provost, Co-PI, 2 project leaders, 2 operational staff and 3 KCMC-MEPI staff)). The non-trainee participants were from KCMU College, KCMC-MEPI and Duke.

Specific Objectives of the workshop:

- To bring together KCMU Co and CUHAS junior faculty (ART candidate) to focus particularly on responsible conduct of research in the Tanzanian context
- To share and discuss experiences on research conduct from the field
- To discuss case studies in RCR and identify the way forward.
- ART trainees to present their research studies and discuss through peer review

Process

KCMU Co and CUHAS members that are junior faculty were informed via emails from KCMU Co MEPI T project leader prior the workshop. The workshop was organised and conducted by the MEPI T leaders and operational staff for three days. Before inaugurating the workshop, ART trainees were required to sign the consent that signify the confidentiality and non-disclosure agreement for the purpose of the project. Afterwards the workshop expectations were sought from each trainee in order to improvise the workshop package.

The KCMU Co Deputy Provost - Administration, Mr. Ahaz Kulanga formally instated the workshop, followed by KCMCU Co Provost, Prof. Egbert Kessy who cordially invited all the trainees from the two institutions and other participants. He projected to see the three-day workshop turning into research investment by harnessing the fruits of MEPI T through research and publishing results which will be translated and transmitted to other medical institutions. Finally he acknowledged the Co PI, project leaders and operations staff for preparing the workshop. Thereafter, the DPA welcomed the facilitators to deliver the workshop agenda as intended.

Workshop agenda

The workshop covered the areas/topics carried on ART program workshop as follows;

Day 1

Activity	*Presenter*
Networking	**Trainees and MEPI T team**

Program overview and expectations	**John Bartlett (JB)**
MEPI Tanzania Logic Model	**Project Leaders (Charles/Ahaz)**
Feedback and questions	**JB**
Mentees expected skills development during ART program	**Trainees discussion**
Project plans for skills development	**JB/ Charles/Ahaz**
Project Logistics - administrative	**Imani/ Ahaz**

Day 2

Activity	Presenter
Programme review and logistics	**Ahaz**
Responsible Conduct of Research (RCR) – Part 1	**John Bartlett/Charles Muiruri/ Ahaz**
Responsible Conduct of Research (RCR) – Part 2	**John Bartlett/Charles Muiruri/ Ahaz**
Mentoring and mentorship	**John Bartlett/Charles Muiruri/ Ahaz**

Day 3

Activity	Presenter
Writing Specific Aims – Based on Russell & Morrison Text	**Charles/ John/ Ahaz**
Presentation by ART trainees	
Preparedness of health facilities in management of and quality of	**Adinan Juma**

services delivered to hypertensive patients in Kilimanjaro health facilities	
Heart Failure in Adult outpatients attending BMC	**Bahati Wajanga**
Aetiology and antimicrobial sensitivity pattern among under-five children with clinical pneumonia post enrolment of pneumococcal conjugate vaccine in Moshi municipality, Tanzania.	**James Ngocho**
Epilepsy among people of Mwanza	**Haruna Dika**
HIV drug resistance and associated clinical pattern among women on long-term use of ART (Option B+) when initiated in early disease in Northern Tanzania	**Nicholas Mazuguni**
Renal disease and schistomiasis in Tanzanian schoolchildren: a prospective cohort study	**Neema Kayange**

Day 1

Prof. Bartlett took trainees through a program overview and expectations. During the presentation he elaborated about manuscript writing, bridge fund completion and how to go about it. Trainees were fostered to take their position as researchers and maintain it. Meanwhile, mentees confirmed their readiness on unpacking the program, implementing it and to achieve beyond the expected goals.

Thereafter, Mr Muiruri led the trainees on affording their expectations and requirements on skills to be gained during the ART program. It was revealed that, trainees expect to acquire skills on research, statistical package, grants management, planning and execution, and research methodology.

Also, the trainees the trainees were taken through the project logic model by Mr Muiruri, followed by Mr Imani who cemented on project logistic as part of research grant administration. The day ended up with research study presentations by each of the trainees followed by questions and comments from all participants.

Day 2

Case studies discussion: On the second day Charles Muiruri facilitated the discussions and actively engaged participants in the discussions as it is mandatory to any NIH project. In every session, case studies were the basis for discussion in the workshop. The participants were also asked to share their own experiences of RCR with reference to the case studies. The discussions were mainly based on whether such cases occur in our settings, key challenges and actions to be taken in the KCMC/KCMU Co and CUHAS context. Prior to the case studies, trainees were requested to go through chapter 7 & 8 in the books distributed to them during the workshop. There were active discussions in every session of the workshop. During the discussion the Co PI cemented on the acknowledgement of the funder in any publication.

The following were the case studies for discussion:

- Researcher in a society
- Advising and mentoring
- Treatment of data
- Mistakes and negligence
- Research misconduct (plagiarism)
- Responding to suspected violation for professional standards
- Human subject in research
- Laboratory safety in research
- Sharing of research results
- Authorship and allocation of credit
- Intellectual property
- Competing interests, commitments, and value
- The researcher in society; personality and work habit
- Management/mentoring style
- Financial issues accounted in managing research grants

Lastly, Prof Bartlett offered skills on the interpretation of RFA/RFP/FAO (preparing the trainees on writing their study aim). He spoke on the initial steps in preparing the specific aims, how to think like a reviewer, what should be done when writing proposals to NIH, how does NIH review the proposals, scoring categories and NIH score and what to be done after receiving the scores.

Day 3

During the third day, Mr Muiruri and Mr Ahaz skilled the trainees on how to write specific aims based on Russell & Morrison text. Mr Muiruri then discussed about preparation of the application (specific aims) on proposal sections focusing on the content of the proposal (methodology) and hypothesis. Muiruri emphasised that the aims should independently sit by themselves and do not answer the long-term goal. Finally trainees were allotted into three group to assist each other refining their specific aims using the principles laid out by Russell and Morrison text. At the end of the exercise, each team member came out with a first draft of specific aim and presented for further refining by the project leaders and peers (trainees).

Closing Session

The workshop ended at 16:00 hours with a closing remark from Prof. John Bartlett. Special thanks were extended to the whole KCMC-MEPI T team, which devoted much of their time preparing and planning so as to make the workshop a success. Finally, the participants were thanked for their attendance, active participation and the research conduct experience they shared. He then cemented on the team-working spirit to the trainees in tackling any matters encountered. Finally, the trainees appreciated the team for the workshop and the opportunity given in preparing them to become independent researchers.

Way forward

A way forward was provided prior closing the workshop led by Mr Ahaz. Trainees' expectations during the workshop (Annex 1a) and expected skills development during ART program with other discussions arising during the workshop were sought. The following were agreed for the betterment of the program.

- Conduct conference call twice a month
- Trainees to prepare files with latest bio sketch, IDPs/PDP and indicate their primary and secondary mentor
- Trainees to submit full proposal with budget to MEPI T by 1st of April
- Ethic committees submission by 15th of April

- Each trainee to do CITI modules before 15th of March
- Training on human subjects protection on 21st March
- Project implementation on 15th of May
- Introduction workshop to STATA for one week, which will be led by JUMA ADINAN
- Research methodology-categorical and continuous data (1st workshop),
- Quantitative data workshop which can be organized from DUKE
- Purchase and train the trainees on Nvivo package for qualitative study (2nd workshop)
- Conduct *Grants management, planning and execution as the* 3rd workshop
- **Dual Geo spatial analysis**: John and Charles will assist by engaging Yani to deliver the training
- Prof Bartlett to mentor the trainees on the dissemination of results and writing of manuscripts

Annex 1: Evaluation by participants

a. ART pre-workshop overview on trainees' expectations

Summary

All six ART trainees responded to the pre- workshop assessment. During the assessment the following were sought from the trainees: demographics (sex, name of institution, professional background), previous experience on advanced research training and lastly their expectations during the three-day training.
The aim of the assessment was to capture the expectations of the trainees before commencing the workshop and to see if there is a need to improvise the workshop package. Majority of the respondents were male (83.3%) and every respondent had unique professional background (see table 1). Out of 6 trainees, 66.7% have attended a training based on advanced research; 2 being attended at Cornell University, 1 from NIMR in Dar-es-salaam and KCMC respectively. It was found that the trainees have attended different research training sessions.

Lastly, 50% trainees expected to network with their peers and program operational personnel and learn how to write research grants respectively and 17% expected to learn how to manage a grant, refining research questions in a clear and understandable way, understand role of a senior researcher, gain skills in ultrasound, data analysis and dissemination to policy makers and familiarize with MEPI T scope.

b. Post-workshop overview on trainees' expectations

Feedback from the trainees was sought using the evaluation forms distributed to the trainees during the workshop. The feedback forms solicited information on trainees' perceptions on the appropriateness and organization of the workshop, feedback on speakers, increased skill and knowledge on; general aspects on advanced research, conducting research, mentoring and mentorship. Also trainees were asked about the adequacy time for presentation and discussion, appropriateness time of the workshop and if the workshop met their expectation. Lastly, overall rating of the workshop, strengths and weaknesses of the workshop were also inquired.

About the trainees

Total number of trainees was 6 (all trainees) of whom 3 were from CUHAS and KCMU Co respectively. 83% of the trainees were male. Trainees indicated their professional background that was paediatrics and lecturer, clinical researcher, obstetric and gynaecology, MD (internal medicine), Medical doctor with MSc and medical doctor in physiology.

The trainees, almost in all aspects, denoted a positive perception. All of the trainees either strongly agreed or agreed that the workshop was conducted in an appropriate manner and well organized with well prepared and understandable informative speakers. Trainees also perceived that the workshop had increased their skills in general aspect on advanced research, increased knowledge and skills in conducting research, mentorship, and mentoring, and that there was adequate time for presentation and discussion, the workshop was relevant to ART program and the workshop met their expectations. However one trainee was neutral on the appropriateness of timing of the workshop.

Overall rating of the workshop- trainees were asked to give overall rate the workshop ranging from very poor to very good. All trainees felt that the workshop was very good

Strength of the workshop

The following were the strengths of the workshop as commented by the trainees:

- Competent facilitators with useful topics
- Transparency on sharing the knowledge and experience by both trainees and facilitators
- Enough time for discussion

- Well organized workshop
- Excellent communication, interaction during the workshop

Shortfall of the workshop

Trainees felt that the only shortfall of the workshop was the limited time given for the workshop.

Suggestion for improvements

- Workshop to be conducted away from the working environment
- Increase the workshop duration
- Increase the number of presenters and learning material like books

Annex 2: Case studies

Case study 1

A postdoctoral student has just had her first manuscript approved for publication with a few small changes. The most important one was that the journal required her to shorten her methods section to save space. The postdoc fears that doing so could cause other scientists to waste their time and money.

When the student speaks to their lab director, he suggests that the student go along with the changes. After all, other researchers can always contact the student for more information on the methods. The student is still apprehensive.

Questions:

- Should the postdoc student make the suggested changes, even though it might mean her colleagues do not have enough information?
- Is shortening the methods section an appropriate way to save space in a journal article?
- Where can the student look to get the definitive answer on what she should do?

Case study 2

A postdoctoral student feels that he would be able to finish his Ph.D. in one semester and has started to apply for research positions. When his adviser hears about this, he addresses the postdoc and tells him that his work will not be enough to be approved by the dissertation committee, and he should plan on staying at least two more semesters.

The postdoc student has always had a good relationship with his adviser and recognizes the adviser's importance in furthering his career, but he questions his advice this time.

Questions:

- Should the postdoctoral student attempt to change the mind of his adviser?
- Is it a good idea for the postdoc student to confer with other members of the dissertation committee?
- How could this problem have been avoided?
- What can the postdoc student now do to further his plans?

Case study 3

Two researchers are conducting an experiment that requires a machine to measure specific information. After running the tests on two separate machines, they realize that some of their measurements are off, but they are uncertain which ones. Two specific points seem to be the incorrect ones because they do not match the rest of the data points at all. They are planning on presenting their results at a lab meeting before they try to publish their results in a journal.

One of the researchers thinks it best to remove the two outlier data points before the meeting because using them would lessen the chance of publication, and they really do seem like the points that the machine was incorrect on because they did not meet the theoretical values. The other researcher believes that they should leave the points in and address them in the meeting to prevent the possibility of being accused of "data manipulation" because they are uncertain if their theoretical values are correct to base the inaccuracy of the questionable data points on.

Questions:

- What must the researchers take into account before they decide what to do?
- At this point, should the researchers even create a draft paper for a journal?
- If the researchers are unable to agree, should one of them decide not to be an author on the paper?

Case study 4

A researcher has published a journal article using a computer program to simulate the spread of an infection throughout a population. With further investigation, he has realized that the data were incorrect; however, the conclusions remain the same. He is conflicted as to whether he should admit the error, even though the article might appear suspect, or to rectify the problem for future research and articles and not admit his error.

Questions

- What responsibilities does the researcher have towards his colleagues to correct the issue?
- How the decision should be effected by who else used the model?
- Besides a formal correction, what could the researcher do?

Case study 5:

A professor is in the process of applying for a grant. However, the deadline is approaching faster than he realized. To save time and get the proposal in on time, he copies a few sentences from a previous journal. The sentences which he copies are for the most part common knowledge, and not new ideas from the author of the article. The professor includes a brief sentence in his proposal summarizing the journal article that he took the sentences from and cites the journal as a reference.

Questions

- Does copying a few sentences from another journal constitute plagiarism?
- When the professor cites the journal that he got the sentences from, is he properly giving credit?

Case study 6

A doctor who has been quite successful as an independent researcher is starting to look forward to a promotion. However, one day a graduate student in his lab shows the doctor some graphs from the doctor's senior colleague that appear amiss. The doctor agrees that there is something wrong but becomes conflicted on what to do. The doctor knows that this senior colleague will most likely be part of the promotional board that decides his future. Confronting this problem could be hurtful to his career.

Questions

- What should the doctor do?
- Should he talk directly to his senior colleague? Or someone higher up?
- Where else can the doctor turn if he needs to discuss the issue with someone?

Case study 7

A teaching assistant is going to give some students in the class he works for an internet module to help them study. He believes that this will help them do better on their test. He is planning on publishing the results of this experiment in a scientific journal and is using this research to finish his dissertation in psychology.

Questions

- Does the teaching assistant have to get approval from the IRB to conduct this research?
- Do the students being tested have to give explicit consent to have the research done?
- What else should the teaching assistant take into account throughout his research?

Case study 8

An assistant professor and two graduate students are ready to publish the research that they have been working on. They can either publish one long, comprehensive paper, or two, less comprehensive papers. If they publish two, however, both students would get to be the first author on a paper, an appealing idea for the students when they create their CVs.

Questions

- How could this problem have been avoided in the first place?
- How can they deal with the issue now?
- Who can the students talk to if they still have issues with the decision?
- If they choose to publish one paper, is there a way to make it clear the importance of each student in the paper?

Case study 9

On his first grant, a doctor is finally ready to publish his results. Both his postdoctoral fellow and his graduate student have made significant works towards the results. When the doctor presents the paper to his department chair, the chair suggests that their names go first. The doctor wanted to be first because it would help improve his resume. At the same time, the postdoc and graduate student starts to argue over the order of names as well.

Questions

- What should the doctor do?
- What could the doctor have done to avoid the problem with his postdoc and grad student beforehand?

Case study 10

A researcher at an engineering company had created a new scientific method and is preparing to submit an article about it to a scientific journal. Before he turns it in, he presents the article to the head of his department. His department head says that he

should be included in the list of authors on the article even though he did not directly do any of the research for the paper

Questions

- How should the researcher respond to his department's head request to be included in the list of authors?
- How could the researcher appeal this demand?
- Where else can the researcher turn to learn more about what he can do in this situation?

Case study 11

A doctor who has kept extremely good data records of everything that has occurred in her laboratory is told that a graduate student who previously worked in her lab is attempting to patent work that was conducted in her lab. However, this work was done under her grant and with her funds.

Questions

- What will the doctor need to provide to prove that this work was conducted under her name?
- Who has the rights to the data collected within her laboratory? Does the graduate student have a right to patent the work?

Case study 12

A doctor has been asked to review the work of a graduate student before it goes to publication. The doctor is chosen to review it because what is done overlaps with what the doctor researches.

The doctor knows that he would do an excellent and objective job of reviewing the article, but he fears there will be a conflict of interest. His students in his lab are working on the same concepts and feels that reviewing this article could make it appear he used the graduate student's ideas.

Questions

- Should the doctor agree to do the review?
- Where can he turn for advice if he is uncertain of what to do?

Case study 13

At 2 sites, study personnel were accused of selling blood to foreigners from children enrolled in a study

At a third site, staff members were accused of shipping breast milk overseas for commercial purposes.

Concerns arose in another study about the amount of blood being collected due to the appearance of large bottles that would be used to place blood samples into culture (Cf Total Blood Volume…[12%] stable condition & normal HB; Anaemia etc.

- In all of these cases, study personnel were able to successfully respond
- Discussion by participants: How would you deal with the above problems?

Appendix 1: List of participants

s/n	Name	Role
1.	Adinan Juma	Trainee
2.	Ahaz Kulanga	Facilitator
3.	Bahati Wajanga	Trainee
4.	Charles Muiruri	Facilitator
5.	Chrispina Narcis	M & E
6.	Egbert Kess	Facilitator
7.	Esther Lisasi	Participant
8.	Haruna Dikka	Trainee
9.	Imani Israel	Facilitator
10.	James Ngocho	Trainee
11.	John Bartlett	Facilitator
12.	Mussa Mkumbwa	ICT
13.	Neema Kayange	Trainee
14.	Nicholas Mazuguni	Trainee
15.	Rose Mwangi	Participant