

Supplemental Digital Appendix 1

- 1) Responsible Conduct of Research (RCR):** The workshop began with an overview of the National Institutes of Health (NIH) and relating the importance of RCR in the overall research enterprise, from within the U.S. and for foreign institutions. The topics required by NIH are addressed in sessions that include interactive discussion. The workshop also incorporated videos, *The Right Choice* series, developed as a collaborative effort with the Northwestern University NIH AIDS International Training and Research Program (AITRP) Supplement (5D43TW007995-04S). Existing policies and procedures as well as those that need further development within each institution were identified by workshop participants. This course also included the online CITI course in human subject protection.
- 2) Grant Writing:** This short course covered the basic principles in approaches to grant writing, from the identification of appropriate funding mechanisms to preparation of timelines for successful proposal development. Criteria for proposal reviews were an important emphasis in proposal development. A sample grant application that was successfully funded and one that was not funded were compared and analyzed. Participants scored sample grants as part of a mini-mock study section and discussed the rationale for scores.
- 3) Manuscript Writing:** Participants in the manuscript-writing workshop, which usually runs for 2 ½ to 3 days (24-30 hours), are trained to write clear logical sentences/paragraphs, develop well-organized tables and graphs, and identify key steps in manuscript writing

and publication processes. Sessions of the workshop also discussed submitting and resubmitting manuscripts, manuscript review processes, as well as reasons manuscripts are accepted or rejected by reviewers.

- 4) **Bibliography:** This course provided basic principles on how to effectively and efficiently search and retrieve reliable, relevant, and up-to-date information from online sources such as databases, Internet portal, gateways, digital archives, and repositories. Participants were also trained on how to organize and manage bibliographic references effectively and efficiently using reference management software (EndNote or Zotero).
- 5) **Research Methodology:** Didactic and literature-based examples of health research methodology were covered, with an emphasis on appropriate methods for given research questions and hypotheses. The workshop included small-group activities designed to apply concepts using collaborative learning techniques. Sample manuscripts were used to apply critical thinking concepts.
- 6) **Mentoring:** This course introduced various mentoring training approaches, with emphasis on promotion of behaviors associated with mentoring competencies, identification of tools that promote high-quality mentoring, and description of practices that enhance mentee development. Participants evaluated the curriculum for cultural competence and to recommend next steps for adoption.
- 7) **Biostatistics and Advanced Manuscript Writing:** Intensive data analysis and manuscript writing workshops were presented in a one-week residential program held at Ibadan in 2002 and 2003. A call for applications was issued for two levels of participants. Applications from potential participants were received from researchers who had data, ethical committee approval, and research questions or hypotheses. Each participant

received packets of materials and a perpetual license for Stata. Each day included short lectures and intensive work sessions to review research designs, analyze data, interpret results, prepare tables and figures, and write research methodologies.

- 8) Bioinformatics:** The course focused on the scope of biomedical informatics and described the major components of terminology. Participants performed basic heuristic analysis of User Interface.
- 9) Biomedical Engineering:** Students and faculty from engineering, medicine, and medical sciences came together to learning best practices in biomedical engineering education and application of technology to solve local health problems.
- 10) Public Health Research in Infectious Diseases:** A literature-based multi-disciplinary course focused on a given infectious disease and required participants' presentations and discussion. The course was structured to focus on major infectious diseases in Africa. The discussion covered both clinical and program-based topics, including clinical trials design, ethics and data analytic methods, observational studies, and operations research. The case study discussion method was a predominant mode used throughout the course.
- 11) Research Management:** Financial, administrative, and technical aspects of grant proposal development, submission, and post-award management were covered to research management and finance officers.