



**Dartmouth Medical School**

HANOVER • NEW HAMPSHIRE

Report of ICT Training  
at Library of  
Muhimbili University College of Health Sciences  
Dar es Salaam, Tanzania

24<sup>th</sup> January – 4 February 2005

Fred Pond, MLS  
Biomedical Librarian  
Adjunct Clinical Associate  
Department of Community & Family Medicine  
Dartmouth Medical School  
Hanover, New Hampshire USA  
Tel: 001 802 356 4546  
E-mail: [fred.pond@dartmouth.edu](mailto:fred.pond@dartmouth.edu)  
<http://www.dartmouth.edu/~fcpond/>

## Training Summary

Muhimbili University College of Health Sciences (MUCHS) library staff members participated in ICT<sup>1</sup> training<sup>2</sup> in early 2005 conducted by the author, an experienced biomedical librarian<sup>3</sup>. Focusing on resources available on the World Wide Web, protocols & techniques for effective methods of searching the biomedical literature including PubMed<sup>4</sup>, AJOL<sup>5</sup> and searching the World Wide Web for biomedical clinical & research materials were covered<sup>6</sup>. Supplementary lectures were presented on theories of medical librarianship and basic services of a health science library in coordination with the individual topics.

Considerable instruction on methods of finding full-text online resources available to Tanzanian scientists, clinicians and librarians was covered; providing access to thousands of high quality biomedical journals and other full-text resources through the HINARI<sup>7</sup> and INASP<sup>8</sup> programs.

The on-site two-week workshop featured extensive hands-on practice time by library staff members in addition to resource demonstrations and lectures by the author. Fourteen staff members (five female, nine male) attended the workshop. This training was held at the request of the Fogarty Executive Committee of the Dartmouth/Boston University AIDS International Training & Research Program.

## Challenges

Internet connectivity, power interruptions and varied library staff skills challenged both trainer and library staff<sup>9</sup>. During the first week of training, the power went down three times during the training time; additionally there were two instances when the Internet was not available. An additional challenge was the varied ICT skills among the staff coupled with the initial training schedule which prioritized covering library service over grouping similarly skilled individuals together.

These issues were resolved during the mid-training assessment when decisions were made to move the training to an off-campus for better Internet stability and hold separate training sessions for similarly skilled library staff<sup>10</sup>.

## Successes

Despite the challenges, the library staff gained a basic knowledge of effectively searching PubMed and connecting to the HINARI resource that offers open access to thousands of high-quality journals. Most trainees spent significant hands-on practice time on these web sites, fostering familiarity in the future. Conversations about using these resources in daily library operations provided the rationale for learning the technical aspects of searching.

---

<sup>1</sup> ICT – Information and Communication Technology

<sup>2</sup> Appendix A: Training proposal

<sup>3</sup> Dartmouth/Boston University Faculty < <http://dms.dartmouth.edu/aitrp/faculty/index.shtml> >;  
< <http://www.dartmouth.edu/~fcpond/> >

<sup>4</sup> PubMed – leading database for indexed biomedical literature <[www.pubmed.gov](http://www.pubmed.gov)>

<sup>5</sup> AJOL – African Journals OnLine <[www.ajol.info](http://www.ajol.info)>

<sup>6</sup> Appendix D: Training outline

<sup>7</sup> HINARI– WHO program for biomedical journal access to developing countries <[www.healthinternetwork.org](http://www.healthinternetwork.org)>

<sup>8</sup> INASP – International Network for Availability of Scientific Information <[www.inasp.info](http://www.inasp.info)>

<sup>9</sup> Appendix E: Training diary

<sup>10</sup> Appendix F: Revised training outline

## Dartmouth-BU AITRP Short Term Training

Typical library tasks were employed to demonstrate the usefulness of important biomedical information web sites in daily work; theoretical discussions on medical librarianship provided background and rationale for applying these.

During the workshop trainees demonstrated willingness and interest to explore the web further. Individual certificates of attendance<sup>11</sup> were awarded at workshop completion to provide trainees with sense of accomplishment, gained knowledge and encouragement for continued exploration.

The trainer demonstrated a collection of biomedical web resource lists & relevant professional articles that were prepared to supplement the training sessions. Individual CD ROMs of this collection were given to all participants.

## Recommendations for Future

Clearly, ongoing ICT hands-on experience & training for library staff in all areas of operations is critical for MUCHS library's development and effectiveness with its primary clientele of faculty, students & staff at Muhimbili University College of Health Sciences, Muhimbili National Hospital, as well as nationally as the resource medical library of Tanzania.

### Multifaceted ICT Training Plan

Recent reports<sup>12</sup> by Karolinska Institutet Librarian Maria Haglund and others provide insightful suggestions for reaching ICT competence among the library staff. I recommend a structured but flexible plan for the long-term development of MUCHS library employees' ICT skills, providing both guidance to MUCHS administration and a communication document for outside supporters interested in assisting MUCHS' library.

This plan should strive to employ several initiatives towards the central goal of having an ICT literate staff – strategies of recruitment, on-the-job training, short courses, long-term education; using regional, national and international resources; and different approaches such as face-to-face training or distance education held daily, weekly, or periodically on as-needed basis when new applications are introduced, for example.

### Initial Steps

While my ICT expertise is largely focused in medical library public service, I would emphasize the Karolinska reports' suggestions to prepare the MUCHS library staff for the future:

- (1) Routine, ongoing ICT training conducted by the MUCHS ICT Department (or equivalent) focusing on computer equipment, applications and operating software in conjunction with everyday library matters;
- (2) On-the-job training and/or job sharing with local peer librarians and educators on particular areas the library chooses to focus on, perhaps beginning with reference service, document delivery and collection management.
- (3) Exposure to other academic libraries, regionally and abroad, particularly training and staff expertise resource sharing opportunities with MUCHS

---

<sup>11</sup> Appendix G: Training certificate

<sup>12</sup> Haglund, M (2004). *Library development needs: A feasibility study of support to the Muhimbili University College of Health Sciences, Dar es Salaam, Tanzania*. Stockholm: Karolinska Institutet University Library. MUCHS Library Committee and Maria Haglund (2004). *Summary Report on the Proceedings of the College Library Committee with Maria, A Librarian Expert from Karolinska University from 3<sup>rd</sup> to 24<sup>th</sup> May 2004*. Dar es Salaam: Muhimbili University College of Health Sciences, College Library.

## Dartmouth-BU AITRP Short Term Training

constituent universities<sup>13</sup> and regional institutions<sup>14</sup> in Tanzania if opportunities exist. In addition to the economics of collaborating with local libraries, these programs can help foster stronger relationships between peer institutions in the region.

### More ICT Experience

Finally, routine access to computers in conjunction with library staff day-to-day work is paramount to developing (and sustaining) ICT skills. Beyond basic computer operations knowledge, familiarity with searching the World Wide Web for resources related to computers & libraries in general should be a standard for all staff. This would be in addition to essential training in particular library work groups, e.g. circulation, cataloguing, reader services, reference etc. I recommend routine scheduled time for library staff in the library ICT classroom until which time staff have access to usable computers in their specific workplace.

### Future Workshops Preparation

ICT workshop presenters should consider several points when training at MUCHS in the future. These points may also apply for other training sites as well in developing countries.

First, workshops that depend on stable access to the Internet (and electric) should be held off-campus to assure a scheduled educational experience. On-site training is a temptation that should be decided carefully. If this point becomes a discussion topic, a diary of current Internet connectivity (replicating the proposed training days/hours) can be recorded for analysis prior to site designation.

Next, an assessment of trainee's skills on covered topics will give the trainer information to present the most effective outline as well as help schedule similarly skilled staff in workshop sessions and schedule their time away from their daily jobs.

Finally, all of this preparation should be completed far in advance of the training dates to allow the trainer and hosts time to make arrangements, adjustments, etc.

## Thanks

Practically everyone on library staff at MUCHS contributed to the success of the ICT workshop in some way while making the author feel welcomed. In particular, thanks go to Ms. Jennifer Mgende and Dr. Alli Mcharazo for their assistance and flexibility in the arrangements and administration of the workshop.

Thanks to AXIOS Foundation and the Dartmouth/Boston University AIDS International Training & Research Program for their support of this workshop.

### Appendixes:

Appendix A: Training proposal	Appendix D: Revised training outline
Appendix B: Training outline	Appendix E: Training certificate
Appendix C: Trainer's diary	

---

<sup>13</sup> University of Dar es Salaam.

<sup>14</sup> School of Library, Archives and Documentation Studies (SLADS), Bagamoyo, Tanzania.

## Dartmouth-BU AITRP Short Term Training

Appendix A: Training proposal

### Proposal to Dartmouth-BU AITRP Fogarty Executive Committee Library Training at MUCHS November 2004

#### Goal and Justification:

New Library Director Dr. Alli Mcharazo has identified library staff training as a high priority in working towards the redevelopment of the library. Mr. Fred Pond, experienced biomedical librarian will conduct on-site training (group & one-on-one as appropriate), on effectively searching the biomedical literature; MEDLINE, AJOL Internet searching for clinical & research materials and Identifying Free & Reliable Resources on the Internet. This will occur over a course of two weeks in Dar es Salaam.

#### Outcomes:

MUCHS library staff will become familiar with index sources for biomedical literature and beginning techniques in searching the biomedical literature. Pre-training, intra-training, post-training assessments will be conducted to provide measurable progress, provide immediate feedback to the trainer, as well as gather data for future training

#### Timeframe:

As soon as possible, depending on MUCHS library needs and Fred Pond's availability.

#### Training Agenda:

##### First Week

###### Monday

Introductions & Library tour of library staff sections; individual interviews of library staff members  
Presentation of Training Goals  
Pre-Assessment

###### Tuesday

Beginner MEDLINE Searching  
Clinic work on actual search requests

###### Wednesday

Advanced MEDLINE Searching  
Clinic work on actual search requests

###### Thursday

Identifying Free & Reliable Resources on the Internet  
Clinic work on actual requests for information

###### Friday

Intra-training assessment and adjustment of training goals to match participant's needs/expectations.  
Individual training time.

##### Second Week

###### Monday

## **Dartmouth-BU AITRP Short Term Training**

Discussion of intra-training assessment findings  
Presentation of modified Training Goals

Tuesday

African Journals OnLine (AJOL)  
Clinic work on actual search requests

Wednesday

Individual training time in library sections  
Follow-up on outstanding questions and issues

Thursday

Group Question & Answer sessions to review reoccurring issues or difficult techniques  
Follow-up on outstanding questions and issues

Friday

Post-training assessment  
Discussion of goals for future training  
Awarding of training certificates

Library Staff Training Outline  
MUCHS Library  
24 January – 4 February 2005

Note: The accompanying CD contains resources to augment lecture/demonstrations, hands-on practice & discussions- see code:

<sup>R</sup> Readings <sup>W</sup> Web Resource List <sup>T</sup> Tutorial

First Week

Monday 24 January

Introductions & library tour of library staff sections  
Individual interviews of library staff members in their respective sections  
Pre-training Assessment; grouping of similarly skilled staff for training  
Possible re-adjustment of training plan  
Presentation of Training Goals  
Meetings, review of teaching equipment, teaching venue, etc.

Tuesday 25 January

Discussion: Basic Services in Medical/Health Library <sup>R W</sup>

Beginner PubMed Searching <sup>R W T</sup>

What is PubMed?

Basic searches

Author

Single citation matcher

Limiting to HINARI & other free full text articles

Using PubMed to find full text articles

Limiting searches

Combining search topics

Using MeSH vocabulary

Using subheadings

Printing & saving search results

Exercises or hands-on work on actual search requests, if possible

Wednesday 26 January

Discussion: Medical & Health Sciences Librarianship – Focus: Reference Service <sup>R W</sup>

Choosing the best online resource for the task

Online Resources Available in Tanzania (PERI, HINARI, and others) Part I <sup>R W</sup>

Clinic work on actual search requests

Thursday 27 January

Advanced PubMed Searching <sup>R W T</sup>

Combining searches

## Dartmouth-BU AITRP Short Term Training

Using MeSH vocabulary, natural text words & other ways to find relevant articles  
Limiting to clinical queries  
Creating re-occurring searches  
Journals & PubMed Central  
Exercises or hands-on work on actual search requests, if possible

### Friday 28 January

Web Resources in General  
Using Search Engines vs Internet Directories <sup>W</sup>  
Using Internet Directories to find good information <sup>W</sup>  
Tools & Methods for evaluating Web sites <sup>W</sup>  
Using library & bookseller online catalogs to answer reference queries <sup>W</sup>  
Follow-up on outstanding questions and issues  
Intra-training assessment  
Individual training time

### Second Week

#### Monday 31 January

Online Resources Available in Tanzania (PERI, HINARI, and others) Part II <sup>R W</sup>  
Discussion of intra-training assessment findings  
Adjustment of training goals to match participant's needs/expectations  
Discussion: Role of academic medical/health library <sup>R</sup>

#### Tuesday 1 February

African Journals OnLine (AJOL) <sup>W</sup>  
Hands-on work on actual search requests  
Discussion: When to use AJOL and PubMed?

#### Wednesday 2 February

Open for identified additional topics  
Hands-on work on actual search requests  
Follow-up on outstanding questions and issues

#### Thursday 3 February

Basics of Training Health Professionals <sup>R W</sup>  
Discussion: Bibliographic Management Software <sup>R W</sup>  
Individual training time in library sections  
Troubleshooting

#### Friday 4 February

Post-training assessment  
Discussion of goals for future training  
Awarding of training certificates

Readings <sup>R</sup> Web Resource List <sup>W</sup> Tutorial <sup>T</sup>

## Dartmouth-BU AITRP Short Term Training

Appendix C: Trainer's diary

Monday 24 January

Met Alli Mcharazo, MUCHS Library Director

Introductions to library staff members

Meeting with Prof. Kisali Pallangyo, Principal, MUCHS & Alli Mcharazo

Tuesday 25 January (workshop beginning)

Introduction to trainer

Training as scheduled.

Orientation to training resources on CD ROM.

Wednesday, 26 January

Training as scheduled, until network went down mid morning

Thursday, 27 January

Network & power off early morning

Introduction to trainer to new students

Presented unscheduled Personal data assistant (PDA) demonstration while waiting for Internet & power.

Advanced PubMed presentation & hands-on practice when power returned briefly.

Friday, 28 January

Web searching basics, discussing search engines and search directories, and the difference between them.

Basic commands of IE, as most did not know how to use them: favorites, adding/removing toolbar, address, organizing favorites.

Alternate browsers(also what *is* a browser) Mozilla Firefox, Netscape.

Brief PubMed review and hands on PubMed exercises for the remainder of the time.

Monday, 31 January

Mid-training assessment. In agreement with library director, determined:

- Prioritize participant's hands-on time.

- Prioritize training on PubMed application.

- Prioritize training to library staff members with best basic Internet skills.

- Establish second training sessions to accommodate remaining library staff members.

- Move Internet training workshop portions to off-campus stable network site.

- Restructured second week training schedule to accommodate above changes.

Tuesday, 1 February

Storm prevents on-time workshop beginning and shortened training time.

Review of PubMed searching & hands-on practice.

Wednesday, 2 February

Training as scheduled.

**Dartmouth-BU AITRP Short Term Training**

Thursday, 3 February  
Training as scheduled.

Friday, 4 February  
Training as scheduled.

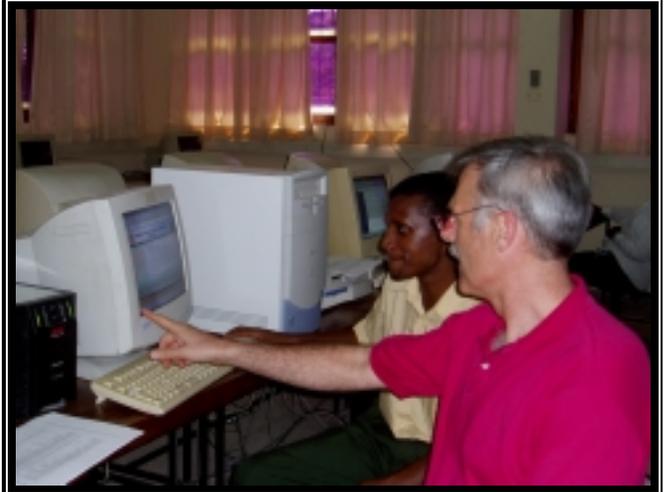
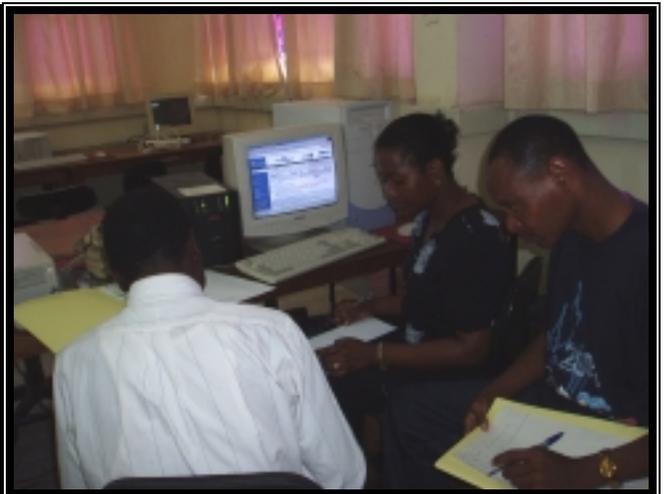
Theory of reference librarianship discussion.

Review of accessing training resources on CD ROM.

Meeting with Beati Mboya, Project Coordinator, AXIOS Foundation, Dar es Salaam and Alli Mcharazo to discuss workshop outcomes & possibilities for future.

Awarding of training certificates.

Photos from ICT workshop:



**Dartmouth-BU AITRP Short Term Training**

Appendix D: Revised training outline

Monday	Tuesday	Wednesday	Thursday	Friday
12-3pm (CoSTech) Introduction to Fred (15 min)  Online Resources Available in Tanzania (45 mins)  PubMed Review (30 min)	9-12pm(CoSTech) Advanced PubMed Searching (60 min)  ~break~  Hands on Practice & Exercises (60 min)  African Journals OnLine (AJOL) (30 min)  Hands on Practice & Exercises (30 min)  2-4pm (MLCR) Hands-on Practice Time with Fred – ALL STAFF WELCOME	9-12pm(CoSTech) Full Text (HINARI & free) in PubMed (45 min)  ~break~  Hands on Practice & Exercises (60 min)  General Web Resources Discussion (60 min)  2-4pm (MLCR) Hands-on Practice Time with Fred – ALL STAFF WELCOME	9-12pm(CoSTech) Using the Web in Library Daily Duties Discussion (60 min)  ~break~  Hands on Practice & Exercises (60 min)  Questions & Answer Session (60 min)  2-4pm (MLCR) Hands-on Practice Time with Fred – ALL STAFF WELCOME	9-12pm (MLCR) Hands-on Practice Time with Fred – ALL STAFF WELCOME  Celebration & Certificate Training Awards

Training Locations: Tanzania Commission for Science & Technology (CoSTech)  
MUCHS Library Computer Room (MLCR)

Tuesday-Thursday CoSTech Training: Mr. Maganga, Mr. Mwambungu, Ms. Mgendi, Ms. Joash, Mr. Khamisi, Mr. Sukums

Tuesday-Thursdays MLCR – ALL STAFF WELCOME

