

Moi-Brown Research collaborations in HIV and biostatistics capacity building: D43

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Moi and Brown University

CFAR Symposium on Statistics and Data Science in HIV

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- AMPATH Consortium
- Brief history of collaboration and gap
- NAMBARI training program
 - Structure of the program
 - Philosophical approach
 - Key challenges
 - Key successes
- Looking forward

AMPATH (Academic Model Providing Access to Healthcare) Consortium

- Collaboration between Moi University and 11 North American universities
 - Led by Indiana University
 - Brown, Duke, Toronto, Purdue, Mount Sinai, several others.
- Focus on care, training, research
 - Medical student / resident / trainee exchanges
 - Long-term faculty in residence in Eldoret
 - Local infrastructure that makes visits easy
- Kenyan-North American partnership is key feature
- Research program has generated significant new activity with Over 150M USD in funded research

- PEPFAR-funded HIV care program based in Eldoret, Kenya
- Over 150,000 individuals in care at over 100 clinical sites
- Electronic health record: AMPATH Medical Record System
 - data from several million clinical encounters
 - augmented with lab data (CD4, others where available)
 - stored on a central server
 - expanding to mobile data entry
- Now focusing on other NCDs such as Hypertension, Diabetes and Oncology

Facilities supported by AMPATH



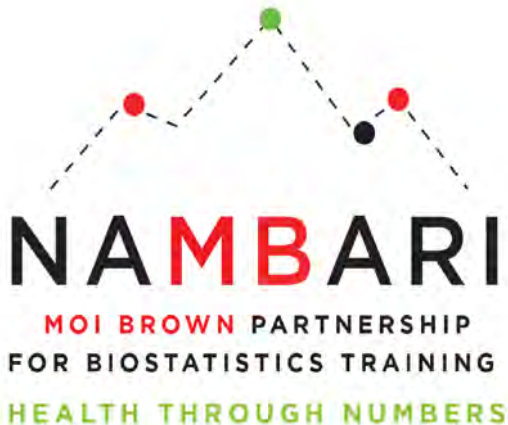
- History
 - Medical student / resident / trainee exchanges
 - Long-term faculty in residence in Eldoret
 - Research on TB and Cervical cancer led by Brown PI
- Gap in Clinical research among Kenyan collaborators which led to:
 - Fogarty AITRP funding for Moi faculty in Epidemiology and Clinical Research
- There was significant need for local biostatistics capacity since most biostat work was being done at North American institutions
 - AITRP funding in Biostatistics in 2007
- Prof. Hogan serving as co-Director of AMPATH Data and Analysis Team (ADAT)
- Summer Biostatistics workshop at Moi university

First graduate 2011



Msc graduates(2012,2014)





Background and Rationale

- Biostatistics is a critical component of biomedical and public health research
- Biostatistics and data science often handled by 'global north' countries in multinational collaborations
- Strong tradition of statistics training in Kenya
 - Primarily related to agricultural research
 - Opportunity to expand focus to biostatistics

Philosophy and structure for Phase 1

- Potential ways forward for biostatistics capacity
- Train the masses: courses for introductory biostatistics aimed at broad audiences
Advanced training
 - Mentoring model (6 week training etc)
 - Degree training
- Our philosophy: “Fill from the top”
 - Identify top candidates, bring for degree training
 - Keep strong engagement in AMPATH

- Degree training
 - Bring candidates to Brown for MS and PhD training in biostatistics
 - Engage them in AMPATH-related research projects
 - Goal: statisticians who can engage in research in Kenya
- Curriculum development
 - Bring faculty to Brown for mid-career training
 - They return to Moi to design new courses
 - Goal: develop biostatistics curriculum at Moi for long-term sustainability
- Advanced topics workshops
 - Open to professional statisticians from around SSA
 - Focus on advanced topics (causal inference, cluster randomized trials, etc)
 - Goal: opportunities for networking of statisticians throughout SSA

Timeline of Milestones and Accomplishments

Phase I: 2015– 2021

- 4 masters degrees awarded
 - Richard Mugo, Victor Omodi, Allan Kimaina, Ben Mosong
- Faculty fellowship and course development Gregory Kerich
- 2 'Train-the-Trainers' workshops
 - Led by ADAT team members
- 3 Advanced Training Workshops
 - Attendance increased to 75+
 - Trainees from 11 African nations
- Strong collaborative environment (AMPATH)
 - Multiple projects for trainees to participate in
 - Engagement of NIH PIs
- Supportive leadership at Moi University AMPATH
 - Moi College of Health Sciences
 - Moi School of Sciences



Workshop 2019



Workshop 2017



- Curriculum development is difficult
 - Retraining faculty
 - Launching new courses
 - Challenges posed by hiring freeze
- Getting US investigators to rely on Kenyan infrastructure
 - Using Kenyan statisticians instead of those in their own group
- Expanding PhD-level leadership on Kenyan side
- Ceiling of professional opportunity for our trainees
 - PhD required for teaching at university level
 - Affects retention (but we've been fortunate so far)

- Key goal: transition to Kenyan leadership
 - MPI structure
- Build on key successes from Phase 1
 - Substantial growth in biostatistics core
 - Strong record of retention
 - Collaboration on new U2R grant from Fogarty
- Use lessons learned from Phase 1
 - Stronger engagement of Kenyan leaders for program planning
 - Orient trainees toward research independence
 - Look for opportunities for K43 and other types of funding

Structure: Phase II

- Aim 1: Training
 - Add postdoctoral training
 - Add local PhD training
- Aim 2: Curriculum development
 - Increase number of faculty fellows
- Aim 3: Workshops
 - Restart workshops
 - Add research component to allow participants to share their own work
 - Regional working group on biostatistics
- Aim 4: Centre of Excellence in Data Science
 - Key partners: leDEA, Rumi Chunara (NYU)

Ongoing issues and challenges

- Imbalances remain
 - Training
 - Authorship
- Engagement of Kenyan statisticians in funded research
- Guarding against 'white savior' mentality
 - Kenya is not the US
 - Introspection is important
- This is hard work
 - Frequent international travel
 - Time zone issues for conference calls
 - Managing cross-cultural collaboration
 - US institutions not always enthusiastic
- Data sharing

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