Strengthening the Pipeline: What is Missing to Attract Young Investigators to Latent TB Research

Global Consultation Meeting on the Programmatic Management of LTBI

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Pipeline Towards Independence in Latent TB Research

Pre-Doctoral
- 4 years undergraduate training in biology at Harvard
- 2 years as a Technical Officer at WHO
- 4 years of Medical School at UCSF

Post-Doctoral
- 3 year Internal Medicine Residency at UCSF
- 3 year Fellowship in Infectious Diseases at UCSF
- 1 year Masters in Public Health at UC Berkeley

Mentored Scientist
- Faculty at UCSF
- 5-Year Mentored Scientist (K23) Award from the National Institutes of Health
Characterizing the TB Reservoir in Rural Uganda

TST positivity stratified by age (years)

3 Rural Communities in Eastern Uganda, N=2076

Percent with a TST>10mm or TST>5mm if HIV positive

Marquez unpublished data
When and where do children and young adults acquire TB?

Kamuge, Eastern Uganda, population 10,000
Challenges Along the Pipeline to Research Independence

(1) Logistical Challenges Unique to Latent TB
   - Diagnostics
   - Long treatment durations
   - Longitudinal studies

(2) Career Identity
   - Strengthening access to multidisciplinary mentorship
   - Virtual Networking

(3) Long-Term Investment in Young Investigators focused on TB and Latent TB
Logistical Challenges Unique to Latent TB Diagnostics

Logistical challenges with TB diagnostics:
Availability, cost, follow-up, laboratory infrastructure

Lack of gold standard to measure LTBI

TST positivity and QFT Positivity in Children <60 Months, Rural Uganda

Marquez PIDJ 2016
Logistical Challenges Unique to Latent TB
Large Longitudinal Studies

- Large community or clinic based cohorts are needed to study TB transmission and prevention.

- Large clinical trial consortiums needed to study clinical outcomes and treatment durations are long.

- Reliable electronic surveillance systems and clinic-based cohorts needed to conduct implementation science research.

**Strong Partnership with local and national public health department**

**Community Engagement**

*Bugamba Level IV Health Center, Southwest Uganda*

*SEARCH study, Uganda*
Logistical Challenges Unique to Latent TB

Solutions

• Increase access to TB specific start-up funds to allow young investigators to gather primary data.

• **Formalize** roles and funding opportunities for post-doctoral investigators/fellows in TB clinical trial consortiums.

  -Can we make a ACTG (TBTSG) or TBTC scholars program for post-doctoral scholars?
Career Identity

The Need for Multidisciplinary Mentorship Teams

Diane Havlir, MD
Primary Mentor
HIV/TB Clinical research, Community Based Research

Moses Kamya, MBChB, PhD
Makerere University, Uganda
Clinical research

Jane Achan, MBChB, PhD
Makerere University, Uganda
Pediatric Clinical Research

Annie Luetkemeyer, MD
UCSF
TB Diagnostics, TB Clinical Trials

Maya Petersen, MD, PhD
UC, Berkeley
Biostatistics, Epidemiology, Social Network Analysis, Causal Inference

Edwin Charlebois PhD, MPH
UCSF
Biostatistics, Epidemiology

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Career Identity Solutions

• Increase exposure to high-level TB meetings
  – Expanding young investigator attendance at WHO HIV/TB Research Frontiers Pre-IAS and CROI meetings

• Establish peer and near-peer mentoring groups.
  – Young Investigator Symposiums at Scientific Meetings
  – Virtual Peer and Near-Peer Networks
“I think one of the main challenges in our settings is really the \textbf{default position} researchers commonly find ourselves in; that of implementers of projects. We are usually occupied with the administrative and field/data collection aspects of the different projects and \textbf{ultimately} miss out on the full appreciation of the science?”

- Early Career Investigator, Uganda
Long term investment in Young Investigators

**Solutions**

**Short Term**
- Skill building workshops
- Start-up Funds
- Support for Masters Programs
- Earmarked awards for young investigators from IAS, Union

**Long Term Investment**
- Support for PhD programs – LIC
- Internal 5-6 year career development program

*Examples:*
1. Medicine Research Council’s Program Leader-Track.
   - 6 year internal career development program for post-doctoral scholars
2. Fogarty HIV-TB Training Programs
   - BJGMC-JHU Fogarty
3. National Institutes of Health Career Development Awards
   - K43 for Investigators from a LMIC

*IDRC and MU-UCSF Young Investigators Workshop, Kampala, Uganda 2016*
Thank You

IDRC Young Investigators Workshop, Kampala Uganda

UCSF
Diane Havlir
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Maya Petersen
Annie Luetkemeyer
Gabriel Chamie

Makerere University
Moses Kamya
Jane Achan

Infectious Diseases Research Collaboration
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Florence Mwagana

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