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Role of FIC in Global Health Research Training: The Case of Rakai Health Sciences program

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Outline of the Presentation

- **Background**
- **Participation in the entire research cycle**:

Role of Fogarty

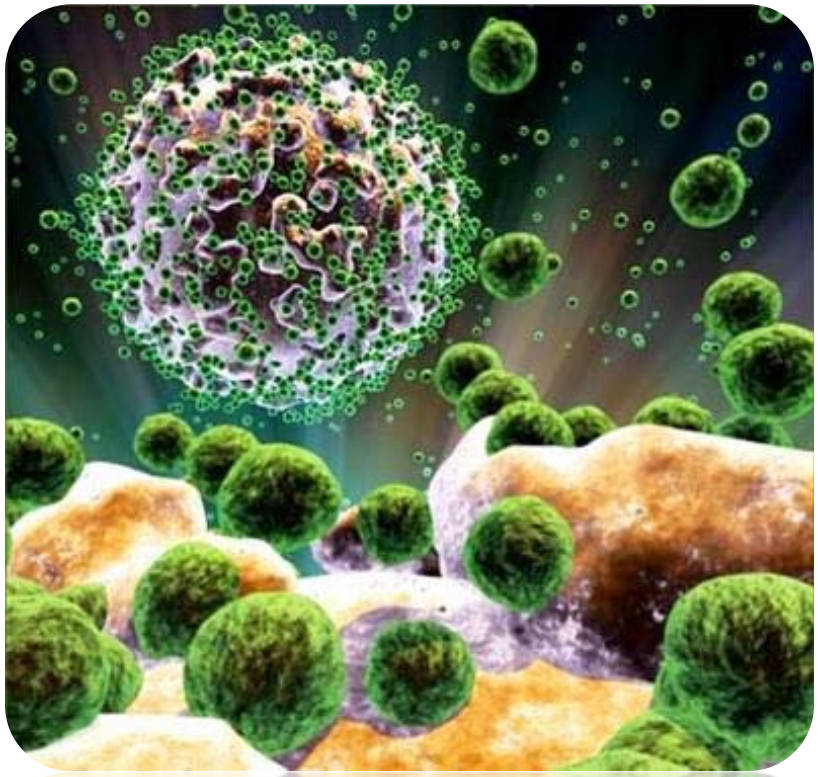
Uganda Case Study

- Fogarty support since 1989 to date.
- Collaborating Universities
  - Case Western Reserve Univ.
  - Johns Hopkins Univ.
  - UCSF Univ. Berkley
  - Alabama University

Role of Fogarty

- Major Health Challenges in Uganda
- Fogarty 's role in improving local research capacity
- An example of role of Training, Research and Health Delivery:
  - Case Study of Rakai Health Science Program and Fogarty Program
- Linking capacity the entire research cycle

HI AIDS



- HIV Sero- prevalence
  –**8%**
- People living with HIV/AIDS
  – **1.5 Million**
- **60%** of Adult death attributed to HIV/AIDS
- Children orphaned by AIDS
  – **1 Million**

Rakai Health Sciences Program Collaboration

Uganda Virus Research Institute/ Ministry of Health

Makerere University:
David Serwadda
Nelson Sewankambo
Fred Wabwire-Mangen

Other Ugandan PIs
Tom Lutalo
Noah Kiwanuka
Godfrey Kigozi
Fred Nalugoda
Fred Makumbi
Joseph Kagayi

RHSP Staff:
Interdisciplinary team of 340 researchers and support staff

Columbia University Mailman School of Public Health
PI: Maria Wawer

Johns Hopkins Bloomberg Sch. of Public Health
PI: Ron Gray
Maria Wawer

NIAID ICER/Global center for Health
PI: Tom Quinn
Steve Reynolds

Other research collaborators:
U of Washington, U of Pittsburgh, London Sch. of Hygiene and Trop. Med, U of Illinois at Chicago, NIH (NIAID, NICHD, NCI, OAR), Walter Reed, CDC (PEPFAR)

Africa - Uganda

Uganda – Demographic Background

- **Area:**

  236,040sq. Km

- **Water:**

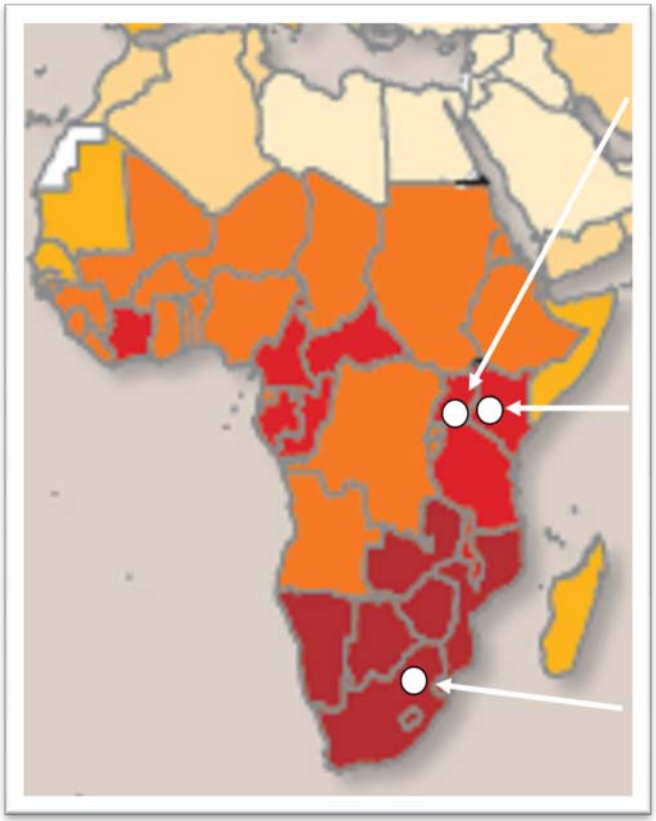
  199,710sq. Km

- **Population:**
  28,195,754

  (0-14years) 50%

  (15-64years) 47.8%

Randomised controlled trials of male circumcision to reduce HIV infection



Source: 2006 Report on the global AIDS epidemic (UNAIDS, May 2006)

Rakai, Uganda

Gray *et. al.* (2007)

Lancet; 369: 657 – 66

Kisumu, Kenya

Bailey *et. al.* (2007)

Lancet; 369: 643 – 56

Orange Farm, South Africa

Auvert *et. al.* (2005)

PLoS Med; 2 (11): e298

TIME

Top 10 Medical Breakthroughs of 2007

#1. Circumcision Can Prevent HIV

Participation in entire research cycle

- Priority identification to study question definition, study design and implementation, publication, policy & action, implementation and implementation science with more research

UNAIDS
JOINT UNITED NATIONS PROGRAMME ON HIV/AIDS
UNHCR UNICEF WFP UNDP UNFPA UNODC ILO UNESCO WHO WORLD BANK

World Health Organization

Paris/Geneva, 28 March 2007

WHO and UNAIDS Announce Recommendations from Expert Consultation on Male Circumcision for HIV Prevention

- Male circumcision should now be recognized as an additional, important intervention to reduce the risk of heterosexually acquired HIV infection in men.
- Male circumcision should be part of a comprehensive HIV prevention package.
- Adequate training, hygiene, monitoring, counseling are critical.
- Modeling studies suggest that male circumcision in sub-Saharan Africa could prevent 5.7 million new cases of HIV infection and 3 million deaths over 20 years.

Lancet – World Report September 20th 2010

Uganda steps up efforts to boost male circumcision.

Ugandan authorities have launched an ambitious new campaign to increase proportion of men circumcised to at least 40% within 5 years

MC finally policy after 4 years of release of research results

Rakai Health Science Program
Fogarty Trainees

6 PhD degrees (2 still in training)

30 Masters degrees

JHU (18), Alabama (3), Makerere (5) Regional (4)

15 Bachelors degrees, Makerere

65 Diplomas, Certificate

13 Post doc / Sabbatical

Multiplier Effect: Circum Skills training at the RHSP (WHO approved) training center

Supervised Circumcision

Inadequate human resources

- (Adjunct) Honorary University Faculty
- In- house trainers for RHSP
- Participation in Research Networks eg INDEPTH
- Supervise visiting students from Ugandan institutions & from outside the country

Main Areas of support (PhD, Masters, Bachelors, Certificates)

- Epidemiology /Biostatistics
- Health Service Research
- Anthropology
- Public Health
- Microbiology and Laboratory management
- Laboratory Sciences
- Clinical disciplines
- **Research administration and other support**

Role of Fogarty – Uganda Case Study

Cumulative Total No. & Study Types of Trainees

Institution	Academic Years	MS/MPH/ MMed	PhD	Undergraduate	Non degree courses/lab training more than 3 Months	Short courses less than 3 months	Supported for meeting or Workshop only.
Case Western Res. Univ.	**1989-Present**	47	15	-	60	3268	5130
Univ. of Alabama	**2003-2008**	9	2	2		611	
Johns Hopkins Univ.	**1987-Present**	35	7	15	75	200	310
UCCF - Berkeley	**1994-Present**	5	2	-	NA	NA	NA

NA – *Data not available*

Publications

Fogarty US Collaborating Institution	Peer Reviewed	Abstracts (meeting / Conferences)
Case Western Reserve (1989 – date)	389	444
Johns Hopkins (1987-date)	460	520
University of Alabama (2003-2009)	3	
UCCF –Berkeley (1994-date)	16	100

The Story of Rakai Health Science Program and Fogarty training

1990-Present

Some Studies

- **25 from circumcision studies**
- HIV Dynamics Study (1989-1992) – NIH/Rockefeller
- Sexual Networks/Behaviors (1991-1994) – NIH
- Preparations for AIDS Vaccine Evaluation (PAVE) (1992-1993) – NIH/WHO
- Operations Research on HIV Prevention Interventions (1989-1993) - NIH
- STD Control for AIDS Prevention (1994-1999) – NIH / World Bank
- Maternal Infant Supplementary Study (MISS) (1995-1999) – NIH/World Bank/Rockefeller
- Community HIV Epidemiological Research (CHER, 1999 – 2002) – WRAIR
- Molecular Epidemiological Research (MER, 1999-2004) – WRAIR
- NVP for pMTCT (Ped AIDS Found, Gates Inst)

Home-based Maternal Nevirapine Self-medication for p-MTCT

Dr. Joseph Kagayi, MD,MPH *Johns Hopkins, 2004*, runs the mother to child HIV prevention program.

75% of Rakai women deliver at home. HIV+ pregnant women are given maternal NVP tablet and a single dose of pediatric NVP in a sealed syringe, to keep at home.

Home-based Nevirapine reduces mother-child transmission by at least 50%.

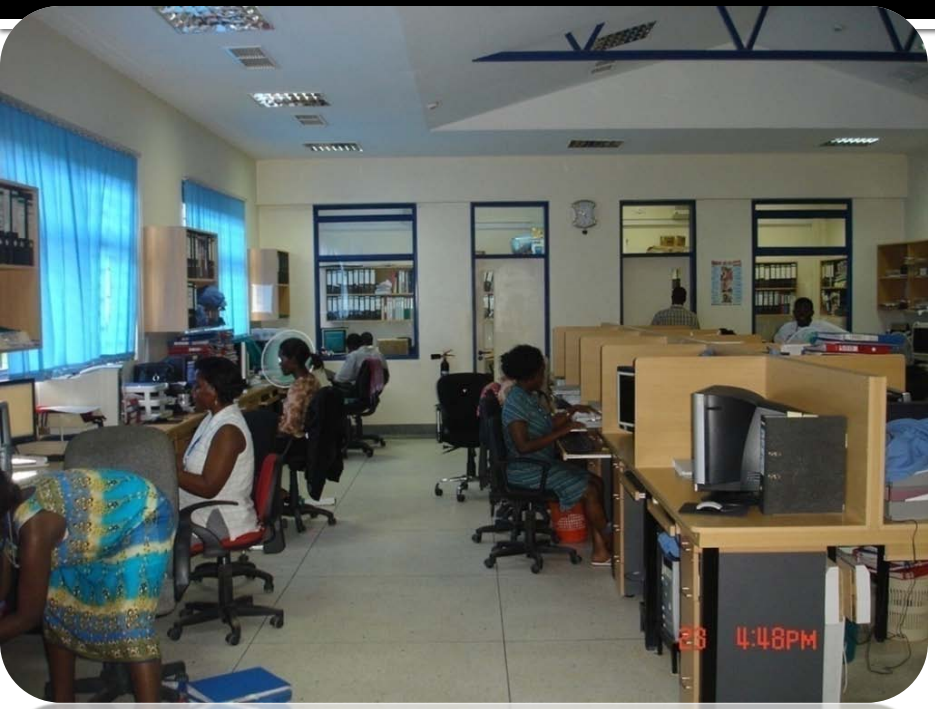
Rakai Health Science Program Laboratory

Mr. Iga Boaz, MSc. ,2006 . Lab Tech, *University of Alabama*

Lab

Serology
Chemistry
Hematology
Microbiology
Molecular Amplification

Rakai Health Services Data Management Centre



Data Entry, Cleaning and Analysis

Mr. Tom Lutalo, Post Doc, 2003
Johns Hopkins,

Male Circumcision

Dr. Kigozi, MD, MPH 2000,
Johns Hopkins

- Providing a complete package of male circumcision and reproductive health care (PEPFAR)
- Operations research on surgical procedures, personnel (physician/non-physician, mobile surgical services (PEPFAR/WHO)

Home-based Rakai Program VCT

- Acceptance
  - 1988 - 5%
  - 1994 - 14%
  - 2007 - >80% of all adult residents in 50 villages

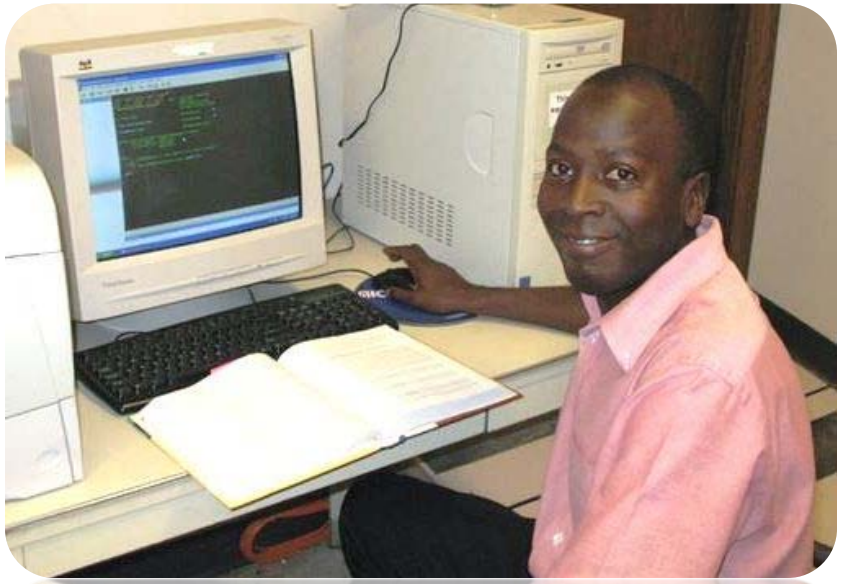
(Matovu et al, AIDS, 2005)

Mr. Joseph Matovu, MHS, *Johns Hopkins* 2004

University capacity building

- Fogarty facilitates RHSP/Makerere collaboration
  - Research base for young faculty
  - Career structure, start as RHSP staff, now Makerere University Staff

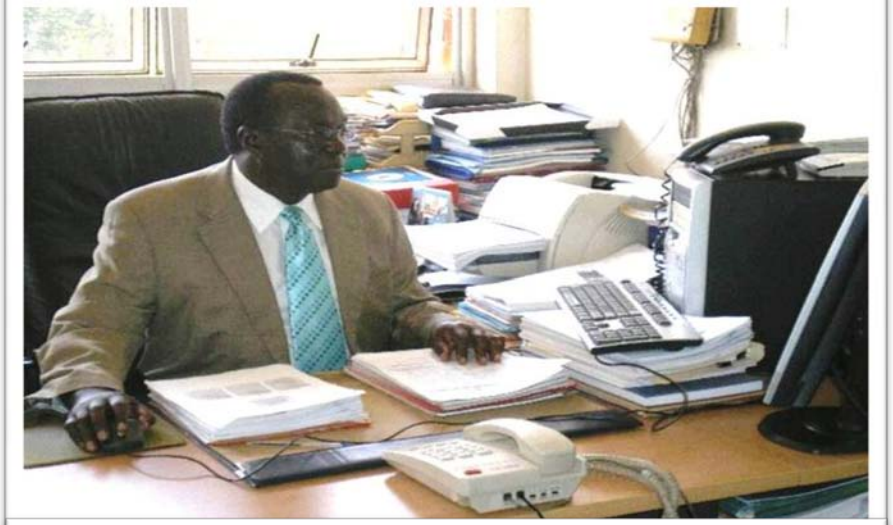
Fred Makumbi PHD *Johns Hopkins 2004*, Senior lecturer, Makerere University School of Public Health



Noah Kiwanuka MD, MPH *Johns Hopkins 1999*, PHD 2008, Lecturer, Makerere University School of Public Health

Ministry of Health
Public Health Leadership

- **Dr. Alex Opio**, PHD 1994, *Case Western*. Commissioner Communicable Diseases, Ministry of Health



- **Hon. Crispus Kiyonga,MHS**, *Johns Hopkins*, 2004 Minister of Health 2001-04

Staff Retention

- 100% Return of trainees on completion
  - Good selection criteria
  - Career structure
  - Professional job satisfaction
  - Good salary structure
  - Training through Research programs
  - Create an "anchor" to hold trainees in country (A Lucas)

Summary

- Fogarty has contributed to develop;
  - A critical mass of scientists and policy makers, this avoids isolation of trained staff
  - Established research programs to expand their scientific personnel infrastructure
    - Trained personnel who can work as a team
  - A Training *bench to bedside to community level* scientists, University faculty, and policy makers
    - Create synergy within the entire health system
    - Fostered creative collaboration and translation of research into policy

SAFE MALE CIRCUMCISION: Scale up of new devices.

Rationale for circumcision devices

- Potentially simpler and faster procedures.
- Require less trained health workers (task shifting).
- May be safer and more acceptable to the population
- May be cost effective.
- Better cosmetic satisfaction
- Easier to train
- No devices for adult male circumcision have gained widespread acceptance yet.

Rakai experience of the Shang ring.

- Acceptability is good so far (76.4%)
- Easily trainable to providers (nurses,clinical assistants)
- Easy and fast to apply
- Complication rates are at 0.5 per 100 surgeries

These are mainly mild to moderate.

- A skilled staff in conventional methods needs to be in easy reach

Thank you