

**Institutions:** K-RITH (KwaZulu-Natal Research Institute for TB and HIV) and HPP (HIV Pathogenesis Programme)  
Durban, South Africa  
[www.k-rith.org](http://www.k-rith.org) and  
<http://hpp.ukzn.ac.za/HIVPathogenesisProgramme.aspx>

**Contact:** Victoria Kasprowicz  
Director of Education  
KwaZulu-Natal Research Institute for TB and HIV (K-RITH)  
[victoriaokasprowicz@gmail.com](mailto:victoriaokasprowicz@gmail.com)  
[vkasprowicz@partners.org](mailto:vkasprowicz@partners.org)

## LAB RESOURCES

---

**Please describe the laboratory facilities available in your research institute, including the items listed below (if applicable):**

*Lab space and equipment (general):*

- Laboratory facilities are of the order of 2,254 sq m. comprised of two P2 culture rooms; one FACS room with two FACS machines (FACSCalibur and LSRII), a molecular laboratory, a freezer room, wash-up room, an incubator room and a radioactive room (HPP).
- The laboratory (HPP) has the following equipment: Class II Biosafety Cabinets (12); Fume Cabinet (1); cell counter (1); microscopes (2); centrifuges (6); Elispot reader (1); Taqman viral load machine (1); FACS Calibre Flow Cytometer (1); LSRII Flow Cytometer (1); -80 degree freezers (5); fridges (4); -20 degree chest freezers (4); -20 degree upright freezers (3).
- The K-RITH building is currently under construction (to be completed in 2012).

*BSL-2 lab space and equipment:* 3 BSL-3 hoods (K-RITH)

*BSL-3 lab space and equipment:* FACS Calibur and LSR2

*Flow cytometry equipment:* FACS Calibur and LSR2

**Please list the research groups in your institute, including the size and areas of expertise for each group:**

- HPP: 4 main research groups based in Africa (plus foreign Principal Investigators), including:
  - Dr. Thumbi Ndungu (20 in group): host-virus interactions and immune responses in HIV-1 infection
  - Dr. Michelle Gordon (5 in group): ARV drug resistance
  - Dr. William Carr (5 in group).



## BIOLOGICAL SPECIMEN REPOSITORY

---

**Please describe the biological specimens stored at your institute:**

- We have a number of clinical cohorts including an acute HIV infection cohort, and longitudinal cohorts of individuals chronically infected with HIV. We also have a new cohort collecting samples from individuals with both latent and active TB +/- HIV infection.

**Does your institute have a database of stored samples:** Yes

**Please provide details on methods for biological specimen storage at your institute (e.g., are Standardized Operating Procedures used?):**

- SOPs are used for all sample processing and storage. Plasma and serum are stored at -20C in 1ml aliquots. PBMC samples are stored in liquid nitrogen (ranging from 5-15 million cells per vial, depending on cohort) (HPP).

**Please describe the equipment/facilities available for sample storage at your institute, including items listed below (if applicable):**

<i>-80C freezers</i>	yes
<i>Nitrogen storage tanks</i>	3 tanks (2 large and 1 small)
<i>Dry ice availability</i>	not available
<i>Use of a nitrogen generator</i>	not available

## TRAINING AND EDUCATION

---

**Please describe the training initiatives your institution has in place for individuals prior to working in clinical studies?**

- HPP: does not really have any training initiatives for clinical studies. Most trainees perform basic science research. However, several research clinicians have been sent to the Harvard School of Public Health to take part in the Clinical Effectiveness Course. HPP holds a weekly journal club to discuss a papers falling under a wide range of different topics.
- K-RITH: has its own Education and Training Programme; however, the content is still a work in progress.

**Please describe the training initiatives your institution has in place for individuals prior to working in the laboratory?**

- HPP: does not really have any training initiatives for clinical studies. Most trainees perform basic science research. However, several research clinicians have been sent to the Harvard School of Public Health to take part in the Clinical Effectiveness Course. HPP holds a weekly journal club to discuss a papers falling under a wide range of different topics.
- K-RITH: has its own Education and Training Programme; however, the content is still a work in progress.

**What assays/techniques do you excel in at your institute?**

- HPP: All immunological and cellular assays ranging from IFN-gamma Elispots to multi-colour flow cytometry. HPP is also strong in PCR.

**What training could you provide to visiting scientists?**

- Training on the above.

**What rank are the majority of your trainees? (e.g., approximate numbers of undergraduate students, Masters, PhD, post-doc, MDs)**

- Masters Students (15); PhD (3); Post-docs (2); No MD trainees currently.

**Do you offer training classes/courses for any of the following?**

<i>Grant Writing</i>	
<i>Manuscript/abstract writing</i>	Yes
<i>Computer skills, excel, prism, endnote, word, powerpoint</i>	Yes
<i>Presentation skills</i>	Yes
<i>Epidemiology</i>	
<i>Biostatistics</i>	

**Does your institute receive funds to support training initiatives?** Yes

**Please provide details about the funds your institute receive to support training initiatives.**

- HPP and K-RITH have both received some funds from the Harvard CFAR to support some training initiatives. In addition, philanthropic funds have been obtained to send students for training abroad. K-RITH funds have also been used to fund training initiatives.

**Does your institution send trainees abroad for additional training?** Yes

**Please indicate the number of trainees sent abroad per year, the source of funding, the location of training, and the type of training received.**

- HPP: 4 students per year on average. Mainly philanthropic funds are used to send students to Harvard to learn techniques such as luminex. Students stay approximately 4-6 months. Students have also been sent abroad using award money from Fogarty/NIH.

**What Masters and/or Doctoral programs does your institution offer?**

- UKZN is the degree conferring institute. However, Masters and PhD students train in the HPP laboratories.
- In the future K-RITH will also train students.

## **COLLABORATIONS**

---

**Please list and briefly describe your current collaboration with any African institutions for either research or training purposes.**

- HPP has a few collaborations with other sites in South Africa.
- K-RITH has funded a TAAI course for 3 years (Tuberculosis African Academic Initiative) where individuals from a range of SADC countries were sent to Durban to take part in a 2-week lecture.

**Please list your institution's plans for future collaborations within African (additional groups, sites, countries, etc.)**

- Not sure at present.

**Please list and briefly describe your institution's collaborations and/or partnerships with entities outside of Africa (e.g., organizations and networks in the USA, Europe, etc. – including CFARS, NIH clinical trials networks, HPTN, HVTN, AMC, leDEA, USAID, PEPFAR, etc.)**

- HPP has strong links to Harvard (USA) and Oxford (UK).
- K-RITH currently has strong links to Harvard, Einstein (USA), and Hopkins (USA), but we hope this will expand greatly over time.

## CLINICAL COHORTS

---

Do you have access to existing clinical cohorts in Africa or USA?

Yes

Please describe each existing clinical cohort that you have access to, including specifics like “HIV-TB infected HAART naïve adults”, sample size, sample type, sex, age, and whether clinical samples are currently being collected and/or stored (specify which samples).

- Acute HIV cohort - do not know exact details
- Chronic HIV cohort - do not know exact details. Both male and female. PBMC and plasma samples stored. Longitudinal samples approximately every 3 months (some have been placed on ARVs). Remaining 50 still being seen.

Are you planning to establish any new clinical cohorts over the next 5 years?

Yes

Please describe the clinical cohorts that you are planning to establish, including specifics such as “HIV-TB infected HAART naïve adults”, sample type, sex, and age.

- Planning to start a large (possible 2000 individuals) cohort of acute infection. Enrolling young (16-21) mothers at antenatal clinic who are deemed high risk. Plan to follow them up longitudinally to identify acute HIV. Plasma, serum and PBMC samples.

## DATA MANAGEMENT

---

Please describe the DATA MANAGEMENT FACILITIES available in research institute, including the items listed below (if applicable):

*Data management expertise, including staff complement (general):*

- HPP: 1 senior data manager and 2 junior managers

*On-site database design, implementation and trouble-shooting:*

- In charge of databases designed to collect clinical data from cohorts

## **BIostatistical Support**

---

**Please describe the BIostatistical Support available in your research institute, including the items listed below (if applicable):**

*Biostatistical expertise, including staff complement/composition of PhD and Masters level biostatisticians:*

- Biostatistical support provided by CAPRISA

### **Additional Comments:**

- HPP does not have access to its own biostatistical support staff and asks for help from its neighbouring institute CAPRISA.