
	EUROPEAN COMMISSION Research Executive Agency Marie Curie Actions – International Research Staff Exchange Scheme	
---	---	---

Project No: 295214

Project Acronym: ESAHIVcoinfRes

Project Full Name: European and South African HIV co-infection
research consortium

Marie Curie Actions

Final Report

Period covered: from 01/11/2011 to 31/10/2015

Date of preparation: 18/10/2015

Start date of project: 01/11/2011

Date of submission (SESAM): 15/01/2016

Duration: 48

Project coordinator name:

Prof. Robert Colebunders

Project coordinator organisation name:

PRINS LEOPOLD INSTITUUT VOOR TROPISCHE
GENEESKUNDE

Version: 1

Final Report

PROJECT FINAL REPORT

Grant Agreement number:	295214
Project acronym:	ESAHIVcoinfRes
Project title:	European and South African HIV co-infection research consortium
Funding Scheme:	FP7-MC-IRSES
Project start date:	01/11/2011
Project end date:	31/10/2015
Name, title and organisation of the person in charge of the project for the beneficiary(ies):	Prof. Robert Colebunders PRINS LEOPOLD INSTITUUT VOOR TROPISCHE GENEESKUNDE
Tel:	+3232476426
Fax:	
E-mail:	bcoleb@itg.be
Project website address:	

1. FINAL PUBLISHABLE SUMMARY REPORT

This section should normally not exceed 2 pages.

This is a comprehensive summary overview of results, conclusions and the socio-economic impacts of the project. The publishable report must be formatted to be printed as a stand alone paper document. This report should address a wide audience, including the general public. Moreover, do not include in the summary report any confidential information, whose publication might undermine the protection of commercial interests, including intellectual property, or privacy and the integrity of the individuals, in particular in accordance with Community legislation regarding the protection of personal data.

Please ensure that it:

- Is of suitable quality to enable direct publication by the REA or the Commission.
- Is comprehensive, and describes the work carried out to achieve the project's objectives; the main results, conclusions and their potential impact and use and any socio-economic impact of the project. Please mention any target groups such as policy makers or civil society for whom the research could be relevant.
- Includes where appropriate, diagrams or photographs and the project logo, illustrating and promoting the work of the project.
- Provides the address of the project Website (if applicable) as well as relevant contact details.

Publishable Summary:

The overall aim of the ESAHIVcoinfRes staff exchange program was to establish a long lasting collaboration between South African and European research teams involved in HIV co-infection research. The consortium consisted of very complementary partners, 2 South African partners: the University of Cape Town (UCT) and University of Limpopo (UL) and 4 European partners: the Institute of Tropical Medicine (coordinating institution) and the University of Antwerp (Belgium), the Academic Medical Centre of the University of Amsterdam (The Netherlands) and the Francis Crick Institute (UK). The ultimate goal was to identify new ways to improve care and treatment for patients with HIV and HIV co-infections in order to decrease the still high mortality rate among people with HIV infection in Africa.

South Africa is the country with the largest number of HIV tuberculosis (TB) co-infected patients in the world. Therefore with this program we explored new ways to diagnose and treat TB, including multidrug resistance TB, more rapidly and studied the pathophysiological mechanisms responsible for the immune reconstitution inflammatory syndrome (IRIS).

We discovered two new dimorphic fungal infections in Southern Africa. *Emmonsia africana* causes disseminated infections in severely immunocompromised HIV infected and non HIV infected patients. We have found its environmental niche in soil and its distribution in small mammals. *Blastomyces israeliensis* presents in a number of ways including as brain abscesses.

We studied different determinants of generalized HIV epidemics and highlighted the importance of concurrent sexual relationships as an important determinant of generalized HIV epidemics. We performed several studies investigating how to optimally use antiretroviral treatment (ART).

South Africa also has a huge burden of disease caused by Hepatitis B and Human papillomavirus (HPV) infections. Therefore we carried out research concerning hepatitis B vaccine coverage and about new ways to diagnose HPV infection. At the Dikgale surveillance demographic site, Polokwane in the Limpopo province we started a project that assessed how to manage chronic diseases in a rural area and performed a study to determine cardiovascular risk factors in persons with HIV infection. In primary health care centers in the Pretoria region we evaluated an information-motivation-behavioral skills model to reduce alcohol use in patients with HIV. Of the 2230 persons with HIV infection treated at these centers 25.1% were hazardous or harmful drinkers and 2.0% had possible alcohol dependence.

During the project we trained early stage researchers in state-of-the-art field research, laboratory techniques, data collection and data analysis, have built a network of researchers interested in HIV co-infection research, formulated and performed new collaborative research projects by intensifying research partnerships and networking activities. Thanks to the project 79 papers were published and 8 researchers obtained a PhD; several others will defend their PhD in the near future.

List of Keywords:

HIV, antiretroviral treatment, tuberculosis, HIV co-infections, hepatitis B infection, Human

papilloma virus infection, emmonsia, immune reconstitution inflammatory syndrome, public health, epidemiology, prevention

Websites where additional information may be found:

<https://www.itg.be/esahiv>

<https://www.uantwerpen.be/admin/system/text/text.aspx?c=PPNL02187MIJN&n=122138&a=edit&e=299193>

<https://www.predart.org/site/index>.

REPORT ON THE WORK PERFORMED AND RESULTS

Please report on the work performed and on the results of the research, addressing the following points clearly and concisely:

- a) Accomplishment of the research objectives as presented in the original proposal
- b) New objectives established during the course of work and new lines of research

The following structure should be used in the description of points a) and b) for each objective separately

- Objective of the research;
- Work performed (mentioning also unsuccessful approaches and unforeseen developments);
- Results and degree to which the objectives were met;
- List specific training received on scientific and technical aspects;
- Relevance for basic and applied science and for applications including industrial links.

Changes to original proposal: Note that the REA has to be informed in advance of any changes to the original proposal. For point a) it is important that any deviations from the original proposal are clearly indicated.

In order to help illustrate the work carried out during the fellowship, please enclose copies of the most relevant publications and reports as well as abstracts of the other publications and manuscripts.

Note that this is in addition to the free-text report requested above.

Additional information such as Word documents, graphs, tables, etc. can be uploaded as attachments using the upload functionality (attachments button)

Work Progress:

General Objective of the research:

The overall aim of the staff exchange program was to establish a long lasting collaboration between South African and European research teams involved in HIV and HIV co-infection research. The ultimate goal was to identify new ways to improve care and treatment for patients with HIV and HIV co-infections in order to decrease the still high mortality rate among people with HIV infection in Africa.

Specific objectives

- 1) To train young researchers in state-of-the-art field research, laboratory techniques, data collection and data analysis as well as understanding different cultural contexts and research conditions
- 2) To build a network of 'the next generation' young researchers interested in HIV co-infection research
- 3) To formulate new collaborative research projects by intensifying research partnerships and networking activities
- 4) To strengthen the position of each partner in the field of HIV co-infection research
- 5) To better understand why the mortality rate of patients with HIV infection is still very high in Africa despite access to ART
- 6) To evaluate interventions to decrease HIV related mortality in Africa

Results

We estimate that the general and specific objectives of the project were realized. A large number of research topics were addressed resulting in a high scientific output.

Main results:

1. Research concerning clinical aspects and pathogenesis of Tuberculosis

WP2 Mycobacteriological research

Bouke De Jong (ITM) worked with Ndivu Makhado (UL) on determining the spectrum of Mycobacterial infections at the Dr George Mukhari Hospital, South Africa. Patients were often infected by mixed Mycobacterium infections. Analysis of the data is still ongoing.

Neesha Rockwood (MRC/UCT) performed several studies on drug resistant TB. The primary research question was to analyze the expression pattern of selected genes of interest to identify pre-chemotherapy, the potential presence of a drug tolerant sub-population in HIV –ve individuals who are still culture positive at 2 months (n=8) compared with individuals who have culture

converted (n=12). A secondary outcome was to look at change in expression of the selected genes of interest 1 week post commencement of chemotherapy. RNA was extracted and purified from sputum samples collected from Dr. Rockwood's cohort study and first strand complementary (cDNA) synthesized for quantitative polymerase chain reaction (qPCR). qPCR primers and probes were designed for 13 selected MTB specific messenger/small/ribosomal RNAs. qPCR was carried out in triplicate using Taqman based assays. Patterns of expression were compared with exponential and stationary phase H37Rv cultures. Biological variation between individuals was documented, with a trend of upregulation of the dormancy regulon (the hspX mRNA) in non-converters at baseline. The higher expression of rpsN1 relative to rpsN2 indicated that MTB in expectorated sputum is zinc deficient. These data are currently being written up and are part of a larger RNA Seq project in which pre and post chemotherapy sequential sputum samples are available from a well-characterised cohort of 75 patients. Research questions will include both the pathogen, host and microbiome. As a concurrent project, DNA was extracted from longitudinal clinical MTB isolates from 2 patients with acquired drug resistance. Libraries were prepared and whole genome sequencing carried out on the Illumina HiSeq 2500 (30 million paired end reads, estimated coverage 600X). Currently samples are being examined for the presence of low frequency drug resistant mutants prior to the resistance to become apparent on Hain assay, and for novel mutations associated with known resistance mutations and genomic heterogeneity.

WP3 Immunological research

Many studies tested different hypotheses to explain the pathogenesis of tuberculosis immune reconstitution inflammatory syndrome (TBIRIS) were performed under supervision of R Wilkinson and A Coussens (MRC). Results are summarized in a review paper by Lai R (MRC) et al. Andrade B together with Meintjes G (UCT) and Wilkinson R (MRC) documented a major role of mycobacterial antigen load and myeloid cell hyperactivation in the pathogenesis of TB-IRIS. Data of Wilkinson K (MRC/UCT) suggested granule exocytosis pathway in TB IRIS pathophysiology. Marais S (UCT) confirmed that a high baseline M. tuberculosis antigen load drives an inflammatory response that manifests clinically as TBM-IRIS in most, but not all, patients with TBM. She also found that neutrophils and their mediators, especially S100A8/A9, are closely associated with the central nervous system inflammation that characterizes TBM-IRIS. Conesa A showed that Vitamin D levels in HIV TB infected patients are low but does not seem to influence the development of TB IRIS. Bahr N (UCT) reported that Cryptococcal IRIS is characterized by a paucity of cerebrospinal inflammation prior to antiretroviral therapy, whereas higher levels of inflammatory markers at baseline predispose to TB meningitis IRIS. Tadokera R (UCT) demonstrated that serum MMP-7 concentration was elevated in TB-IRIS and 2 weeks of corticosteroid therapy decreased this level, although not significantly and that TB-IRIS is associated with a distinct pattern of MMP gene and protein activation. Therefore it was suggested that modulation of dysregulated MMP activity may represent a novel therapeutic approach to alleviate TB-IRIS in HIV-TB patients undergoing treatment. She also found higher levels of IL-10 probably representing a compensatory antiinflammatory response during tuberculosis-IRIS and elevated levels of IL-22 suggesting an association between this cytokine and immunopathology during tuberculosis-IRIS. Subbarao S (UCT) showed that raised venous lactate and markers of intestinal translocation are associated with mortality among in-patients with HIV-associated TB in rural South Africa.

WP4 Non-TB HIV co-infection research

The two main research topics addressed during this work package included Hepatitis B and HPV infection

Burnett reviewed the coverage of Hepatitis B vaccination among health care workers

Lisbeth Lebelo (UCT) with assistance of JP Bogers (UA) evaluated new diagnostic procedures to diagnose HPV related cancers. Lebelo Ramokone Lisbeth (UL) defended successfully her PhD thesis 21/8/2014; "Molecular characterization of human papillomavirus types in South Africa" 22-23 June 2014, in Pretoria, ESAHIVcoinfRes, the UL and the UA organized an African symposium on cervical cancer and other HPV related cancers.

WP5 Post-mortem studies were not performed because of lack of funding and not enough interested researchers to write and submit a research proposal.

WP6. Clinical research

1. TB research

An important randomized placebo-controlled trial is ongoing to investigate whether prednisone may prevent the development of tuberculosis-associated immune reconstitution inflammatory syndrome (TB IRIS) in high-risk patients (Pred-ART trial) (PI Graeme Meintjes). <https://www.predart.org/site/index>. End October 2015, 210 out of 240 participants were enrolled in the study. It is expected that end December 2015 or January 2016 all patients will be enrolled. Cari Stek (ITM) has worked at UCT on the PredART trial since November 2013 and coordinated a Quality of Life study within PredART. She developed a protocol for pulmonary function testing of PredART trial participants. She already enrolled 139 participants in study and performed more than 200 pulmonary function tests; recruitment is still ongoing. Van der Plas (UCT) documented high rates of TB-IRIS, hospital-acquired infections and drug toxicities complicate the course of patients with HIV-associated tuberculosis starting antiretroviral therapy in hospital. Sabin Belard and CC Heuvelings (AMC) initiated at UCT a study on bedside ultrasound examination of HIV-infected adolescents and a mediastinal ultrasound study. Saskia Janssens (AMC) is collaborating with Graeme Meintjes (UCT) in a study to decrease HIV TB mortality in particular in patients with TB sepsis.

2. Research on Emmonsia, a new opportunistic co-infection

Chris Kenyon (UCT/UA) together with other South African researchers discovered a new fungal infection (*Emmonsia Africana*) in patients with AIDS (paper published in the *New England Journal of Medicine*).

Ilan Swartz (UA) during a 1 year stay in South Africa further investigated the epidemiology & geographic distribution, clinical spectrum of disease, diagnosis, management and outcomes of patients with disseminated emmonsiosis (paper published in *Clinical Infectious Diseases*). Several emmonsia studies have been initiated and are ongoing. They include a search for the ecological niche of *Emmonsia Africana*. Polymerase chain reaction (PCR) for *E. Africana* of lung tissue of >1000 rodents from across the Western Cape province will be done to find evidence of an animal reservoir. So far however all PCR tests were negative. PCR testing was also performed of soil samples from around Western Cape and several samples were found to be PCR test positive. PCR test are also performed on strips from an air sampler spore-trap in Belleville, Western Cape. An *E. Africana* antibody test is under development. We have identified an *E. Africana* protein which is highly immunogenic and specific for *E. africana* infection. We are in the process of developing an ELISA test to detect antibodies to this protein in human and animal serum. Once the ELISA has been validated we will apply for a patent for it.

We will use this antibody test to assess: 1. The prevalence of exposure to *E. africana* throughout South Africa in a stored serum collection of antenatal clinic attendees. 2. The prevalence of exposure to *E. Africana* in various putative rodent hosts

We are also validating the *Histoplasma galactomannan* enzyme immunoassay for the diagnosis of emmonsiosis. Using whole genome sequencing we identified two novel *Emmonsia*-like species: *E. africana* and second novel species *E. israeliensis*.

WP7 Epidemiological and public health research

Chris Keyon (UCT) performed several studies to identify factors causing generalized HIV epidemics, highlighted the importance of concurrent sexual relationships in the development of generalized HIV epidemics

Diana Huis in 't Veld (UA) performed a randomized trial to evaluate an intervention to decrease alcohol use in people on antiretroviral treatment in South Africa. Of the 2230 persons with HIV infection treated at primary health care centers in the Pretoria are 25.1% were hazardous or harmful drinkers and 2.0% had possible alcohol dependence.

25.1% of patients were hazardous or harmful drinkers and 2.0% had possible alcohol dependence. Robert Colebunders (UA/ITM) and JP van Geertruyden (UA) work with Felistas Mashinya (UL) on studies to determine cardiovascular risk factors in persons with HIV infection in the Dikgale surveillance demographic site.

Nomathemba Patricia Taukobong (UL) worked with JP van Geertruiden on a model for integration of Health Promotion in Physiotherapy practice in South Africa.

Changes to original proposal

WP4: The sub-study of PROMPT on cryptococcal meningitis was not feasible because an insufficient number of patients were enrolled in the study. The study "HPV detection and typing in head-and neck squamous cell carcinoma" was not done because there were not enough patients

willing to enroll in a prospective study.

WP5: The post mortem study was not done because funding for such a study was not obtained.

WP 7: The idea of a randomized trial of vitamin D supplementation to delay the progression of HIV disease was abandoned because no funding was obtained.

There have been many exchanges, but certain secondments, particularly of experienced researchers, were shorter than originally planned.

Specific training

Immunology training at UCT: Conesa-Botella Anali (ITM) Justine Nakiwala (ITM)

Burnett Rosemary (UL) successfully defended her PhD 14.12.11 at the UA. Title of the thesis "Hepatitis B and HIV co-infection : a perspective from sub-Saharan Africa and South Africa".

Chris Kenyon (UCT) successfully defended his PhD 26.6.12 at the UA. Title of the thesis "The underlying determinants of South Africa's generalized HIV epidemic".

Deffur Amin (UCT) microarray training at NIMR.

Mycobacteriological training at ITM: Ndivu Makhado (UL) was trained on Real-Time PCR testing, Line probe assay (Hain Life Science), FluoroCycler (Hain Life Science), DNA sequencing and editing sequences and spoligotyping.

Lisbeth Lebelo (UL) was trained on the Lacer Capture Micro-dissection (LMD) method for detection of HPV in the HPV research lab of Jean Paul Bogers (UA). Micales I (UA) visited UL to prepare with Jeffrey Mhahlele a collaborative research project on HPV 12-17.3.12

Joanna Houghton (NIMR) visited the Institute of Infectious Diseases and Molecular Medicine (IIDMM) at UCT 2.4.-1.5.12. The aim of her visit was to initiate a study exploring the presence of M. tuberculosis small regulatory RNAs (sRNAs) in the sputum of patients with pulmonary tuberculosis (TB).

Anna Coussens (NMIR) visited UCT 26.3-31.10.12. She trained several postdocs and PhD students in co-infection protocols and in the analysis of complex data sets. She has set up a HIV molecular clone transfection protocol for the production of infectious virus within the lab. She trained lab members in the production of monocyte-derived macrophages to be used for HIV-MTB co-infection, and has set up a collaboration with two groups within the IIDMM to allow lab members access to state-of-the-art instruments for the multiplex analysis of gene expression (Roche 480 384-well light cycler) and protein concentration (BioRad Luminex 200 platform) in immunological samples and trained lab members in their use. She worked with 3 PhD students to conduct analysis of complex data sets using PCA analysis. Finally, she also set up 2 collaborations concerning HIV-TB co-infection research, one with a postdoc who specializes in T cell co-infection, the second with members of Prof Valerie Mizrahi's group to determine the mechanisms of action of a drug that has the potential, as an HDAC inhibitor, to work in a 'kick and kill' method to enhance the killing of latent HIV which persists during ART.

Lindi Roberts (UCT) visited ITM to develop a technique to measure cytokines in vaginal fluid 5-9.3.12 and 17.6.12 - 4.7.12.

Rachel Lai (Crick) visited UCT to perform experiments using PBMCs from patients with TB-IRIS collected and stored at UCT. She discussed the TB-meningitis microarray data and presented a work-in-progress talk to the UCT colleagues.

Maximiliano Gutierrez (Crick) gave a seminar at UCT followed of discussions with Group leaders; this led to the establishment of new projects in collaboration with UCT. He also presented our data to the Pathologist Dr. Helen Wainwright at UCT to discuss the analysis of human samples and how to proceed further for publication. He also visited the clinical setting in Khayelitsha in order to organize future sample analysis in the frame of our collaboration. Finally, together with Dr. Collin Diedrich, we analyzed the images of human lymph nodes and designed the best strategy for software analysis and presentation.

Amy Nair (UCT) visited ITM in August 2015 for training in regulatory affairs/study monitoring.

Kgopa Bontle Patience and Modjadji Perpetua (UL) attended a course on qualitative research at the UA.

Sirindi Linda (UL) attended a course on epidemiology at the UA.

Training of PhD students

Conesa-Botella Anali ITM PhD student did research at UCT

Cari Stek, ITM PhD student based at UTC

Ilan Schwartz, UA PhD student based at UCT

Saskia Jansens AMC PhD student based at UCT

Justine Nakiwala ITM PhD student trained at UCT
Diana Huis in 't Veld UA PhD student trained at the UL
LeloLebelo Ramokone Lisbeth UL PhD student trained at the UA
Maimela E UL PhD student trained at the UA
Ndivvhuho Makhado UL PhD student trained at ITM
Rosemary Burnett UL PhD student trained at the UA
Chris Keyon UCT PhD student UA
Nomathemba Taukobong UL PhD student trained at UA
Charlotte Carina Heuvelings AMC PhD student trained at UCT
Sabine Belard AMC Phd student trained at UCT

Workshops

A flow Cytometry Workshop was organized at UCT 2-6.09.13.
The Dikgale Chronic Disease Intervention Project workshop in Polokwane (an UL-UA initiative)
28.01.-2.02.13
African HPV research network workshop, Pretoria (UL, Medunsa Campus), South Africa, between
22nd and 23rd of May 2014
Emerging African investigators' meeting. Pre-congress symposium at 16th International Congress on
Infectious Diseases 2nd to 5th April 2014 - CTICC, Cape Town, South Africa
<http://www.cidri.uct.ac.za/cidri/meetings/2014#sthash.v9uToBDB.dpuf>
CIDRI (Univ Cape Town) Imperial College Summer School for graduates January 26th-30th 2015,
University of Cape Town, co-organiser with Paul Seddon
<http://www.cidri.uct.ac.za/cidri/meetings/2015>
2nd Tuberculous Meningitis International meeting, May 20-22nd 2015, Da Lat Vietnam,
Co-organiser with Guy Thwaites, Doortje Heemskerk and Suzaan Marais
<http://www.cidri.uct.ac.za/cidri/meetings/2015>

Grants obtained

EDCTP Strategic Primer Grant (SP.2011.41304.074) "Preventing tuberculosis-associated immune
reconstitution inflammatory syndrome in high-risk patients: a randomized placebo-controlled trial of
prednisone (Pred-ART trial). Investigators from UCT (Meintjes G), MRC (R Wilkinson) and ITM (R
Colebunders and L Lynen).
Clinical trial "brief intervention to reduce alcohol misuse in patients with HIV in South Africa":
protocol accepted by the IRB of the UL (Medunsa) and the University hospital Antwerp (PI Diana
Huis in 't Veld). Funding obtained from MRC South Africa.
R Colebunders and C Kenyon obtained a grant of the Research Foundation Flanders (FWO)
G040813N. 550.000€. An investigation into the geographical distribution, host species, burden of
disease and optimal diagnosis and treatment of *Emmonsia* infections.(2014-8)
Several Wellcome Trust grants were obtained through the collaboration between NIMR and UCT.
Wellcome Trust Intermediate Fellowship in Public Health and Tropical Medicine
Defining interventions to reduce mortality in severe HIV-associated tuberculosis
Sponsor of Assoc. Professor Graeme Meintjes, University of Cape Town WT098316AIA,
£1,239,757, January 2013-December 2017
Wellcome Trust Research Training Fellowship
Defining mechanisms driving Immunopathology in Tuberculosis-HIV Co-infection Overseas sponsor
of Dr Naomi Walker, Imperial College London
£295,860 WT094000/Z/10/Z, November 2011-October 2014.
Wellcome Trust Training Fellowship in Public Health and Tropical Medicine Host and bacillary
factors in the pathogenesis of tuberculous meningitis Sponsor of Dr Suzaan Marais, University of
Cape Town WT097254AIA, £379,275, January 2012-December 2015.
Wellcome Trust Masters Fellowship in Public Health and Tropical Medicine The importance of
opsonophagocytosis in human tuberculosis Sponsor of Nonzwakazi Bangani, University of Cape
Town WT097684/Z/11/Z, ZAR 1,246,388, January 2012- June 2014.
Imperial College Global Health Clinical Fellowship Scheme
How common is amplified drug resistance in individuals receiving optimized treatment for M.
Tuberculosis and what are its determinants? Sponsor of Dr Neesha Rockwood, Imperial College
London £66,589. Carnegie Corporation Developing the Next Generation of Academics award
Epidemiology of Diabetes, Tuberculosis, and HIV interaction in a high burden setting
Sponsor of DrTolullah Oni, University of Cape Town Postdoctoral award ZAR 500,000.

Institute of Infectious Diseases and Molecular Medicine, University of Cape Town, Hasso-Plattner mid career Fellowship

Pathobiology of tuberculosis in the context of HIV-1 co-infection by investigating data sets obtained by high-throughput technologies Sponsor of Dr Armin Deffur ZAR 1.37 Million. Sydney Brenner Fellowship, Academy of Science of South Africa supported by the Oppenheimer memorial trust

The interaction between HIV-1 and vitamin D deficiency with the innate and adaptive immune response to Mycobacterium tuberculosis Sponsor of Dr Anna K Coussens, University of Cape Town ZAR 480,000, January 2014-December 2015.

Claude Leon Foundation Postdoctoral Fellowship

How does HIV manipulate the interaction between M. tuberculosis-infected macrophages and M. tuberculosis-specific T cells Supervisor of Dr Collin Diedrich, University of Cape Town

ZAR 370,000, January 2014-December 2015

clinicaltrials.gov/show/NCT01924286 (2013-6). Department of Science and Technology of South Africa. Financial Assistance Agreement to holders of FP7 awards (DST/CON 0072/2013) ZAR 649 055 June 2013-December 2017 obtained by R Wilkinson.

MANAGEMENT REPORT

Please describe the management activities relative to the initial financial planning of the project

Management Report:

A kick off meeting was organised at the University of Limpopo (Medunsa campus) Pretoria 17.09.12 in the presence of all the PIs of the participating institutions.

This meeting was followed by a scientific meeting between public health and infectious disease researchers of the UA and the UL in Bela Bela and Polokwane, S Africa 17-21.09.12

Annual management and scientific meeting organized between UA (attended by R Colebunders, JP van Geertruyden, M Van Sprundel, JP Bogers and H Meulemans) and UL in Polokwane and Pretoria, S Africa and Joint PhD programme between the UL and the UA signed 14-18.09.13. J Mphahlele and K Ayisi coordinators of the UL part of the exchange project visited the UA to discuss the collaboration.

Annual management and scientific meetings organized between UA (attended by R Colebunders, JP van Geertruyden, M Van Sprundel, JP Bogers and H Meulemans) and UL in Polokwane and Pretoria, S Africa. 15-18.09.14.

Annual management and scientific meetings organized between UA (attended by Jan Vervoort, JP van Geertruyden, JP Bogers and P Van Royen) and UL in Polokwane and Pretoria, S Africa 14-17.09.15

2. USE AND DISSEMINATION OF FOREGROUND

Section A (public) – DISSEMINATION MEASURES

This section should describe the dissemination measures, including any scientific publications relating to foreground and specify any applications for patents etc. Its content will be made available in the public domain thus demonstrating the added-value and positive impact of the project on the European Union.

Dissemination activities

This section must include a list of planned dissemination activities (publications, conferences, workshops, web, press releases, flyers, etc) in free text format. Where Articles have been published in the popular press, please provide a list as well.

Conferences/Lectures

R Colebunders University of Limpopo (Turfloop campus, faculty of humanities): Lecture: Planning for talent in research 08.05.12

R Colebunders University of Limpopo (Turfloop campus): Lectures: Global health trends 09.05.12
University of Limpopo (Medunsa campus): Global health trends. 11.05.12

R Colebunders presented the ESAHIVcoinfRes project at the Marie Curie Conference, Nicosia, Cyprus 5-6.11.12

R Colebunders co-chaired a satellite on immune reconstitution inflammatory syndrome during the XIX International AIDS Conference 22-27.07.12 Washington D.C., USA

R Colebunders (UA and ITM) and G Meintjes (UCT) chaired a session on the Mechanisms of Immune Reconstitution during the 20th Conference on Retroviruses and Opportunistic Infections. Atlanta 3-6.03.13

I Schwartz presented on deep fungal infections in HIV to community antiretroviral doctors, Mitchell's Plain Hospital, February 18, 2015

I Schwartz presented on deep fungal infections to dermatologists, Tygerberg Hospital, March 19, 2015

I Schwartz presenting to infectious diseases academic rounds, Tygerberg Hospital, October 30, 2015

I Schwartz was an invited speaker at Sixths Congress of Federation of Infectious Diseases Societies of Southern Africa (FIDSSA), November 5-8, 2015

I Schwartz presented "Emmonsiosis in South Africa: clinical and laboratory features of 29 cases" at AMMI-CACMID, 2-5 April 2014, Victoria, Canada

S Belard presented the poster: Point-of-care ultrasound: improving the diagnosis of childhood tuberculosis at the Arbeitsgemeinschaft Tropenpädiatrie, Mainz, Februar 2015; and Kongress für Infektionskrankheiten und Tropenmedizin, Köln 2014 and will give an oral presentation at the 46th Union World Conference on Lung Health in Cape Town, South Africa December 2015

C Kenyon presented "From ITS to genomes: two novel Emmonsia species with fully annotated genomes" at

Utrecht 21-23 April 2015 Neglected Tropical Pathogens Conference.

C Kenyon presented "Unambiguous identification of dimorphic fungal pathogens: a case study on an Emmonsia species investigated by high resolution electrospray Orbitrap™ mass spectrometry." at Utrecht 21-23 April 2015 Neglected Tropical Pathogens Conference.

C Kenyon presented invited lecture to Department of Medicine, University of Cape Town, 2 February 2015, "The discovery of emmonsiosis"

Lectures by Graeme Meintjes:

Meintjes G. Management of drug resistant TB in patients with HIV co-infection. Invited plenary speaker at HIV Drug Therapy Conference, Glasgow, UK, 2-6 November 2014.

Meintjes G. Timing of ART in patients with opportunistic infections. HIV Congress 2014, Mumbai, India, 21-23 March 2014. Invited speaker.

Meintjes G. Cryptococcal immune reconstitution inflammatory syndrome (C-IRIS). 9th International Conference on Cryptococcus and Cryptococcosis. Amsterdam, Netherlands, 19 May 2014. Invited speaker.

Meintjes G. Clinical Masterclass (workshop presentation). 9th International Conference on Cryptococcus and Cryptococcosis. Amsterdam, Netherlands, 19 May 2014. Invited presenter and

discussant.

Meintjes G. Why are people still dying of HIV in Africa? 16th International Congress on Infectious Diseases, Cape Town, 3 April 2014. Invited speaker.

Meintjes G. Tuberculosis-associated immune reconstitution inflammatory syndrome. Invited plenary speaker. 65th Annual Meeting of the German Society for Hygiene and Microbiology (DGHM) and Annual Meeting of the German Society for Infectiology (DGI). September 22-25, 2013. Rostock, Germany.

Meintjes G. Treatment of Cryptococcal Meningitis. African Society for Laboratory Medicine (ASLM) Conference, 1-7 December 2012, Cape Town. Invited speaker.

Meintjes G. Interaction between ART and management of opportunistic infections in resource limited settings. ID Week of the Infectious Diseases Society of America, 19 October 2012. San Diego, US. Invited speaker.

Meintjes G. IRIS and its implications in the ICU. South African Critical Care Congress 2014, Cape Town, 26-30 November 2014. Invited talk

Meintjes G. TB-IRIS. Southern African HIV Clinicians Society Conference 2014, Cape Town, 24-27 September 2014. Invited talk.

Meintjes G. Recurrent meningitis after ART initiation in two patients known with cryptococcal meningitis. Southern African HIV Clinicians Society Conference 2014, Cape Town, 24-27 September 2014. Invited talk.

Meintjes G. Adult ART guidelines. Southern African HIV Clinicians Society Conference 2014, Cape Town, 24-27 September 2014. Invited talk.

Meintjes G. Where are we with MDR TB? Southern African HIV Clinicians Society Conference 2014, Cape Town, 24-27 September 2014. Invited talk.

Meintjes G. IRIS and the rocky road to immune recovery: a clinical perspective. South African Immunology Society Conference, Vineyard Hotel, Cape Town, 3 February 2014. Invited.

Meintjes G. Point-of-care diagnostics in rural settings. 5th Federation of Infectious Diseases Societies of South Africa (FIDSSA) Congress, Drakensberg, Kwazulu-Natal, 10-12 October 2013. Invited.

Meintjes G. A policy of test and treat regardless of CD4 count: The case in favour. 5th Federation of Infectious Diseases Societies of South Africa (FIDSSA) Congress, Drakensberg, Kwazulu-Natal, 10-12 October 2013. Invited.

Wilkinson R IL-17 driven neutrophil S100A8/A9 secretion and pathology in HIV-tuberculosis associated immune reconstitution inflammatory syndrome' Invited speaker at the South African Immunology Society, February 3rd 2014, Cape Town

Wilkinson R Interaction between antimicrobial and adjunctive therapies and the immune response to tuberculosis' Invited plenary speaker Keystone symposium: Novel therapeutic approaches to tuberculosis 1st April 2014, Keystone, CO

Wilkinson R Interaction between antimicrobial and adjunctive therapies and the immune response to tuberculosis' Invited plenary speaker 16th International Congress of Infectious Diseases: 5th April 2014, Cape Town, South Africa

Wilkinson R HIV associated tuberculosis: role of host directed therapies to reduce early mortality and TB-IRIS' Sponsored by NIH DAIDS as speaker at Advancing host directed therapy for tuberculosis workshop, 16th April 2014, Rockville, MD, USA

Wilkinson R The potential impact of genomics on tuberculosis control' Plenary talk, American Thoracic Society, San Diego, CA, 1030 Sunday 18th May 2014, Scientific symposium A15

Wilkinson R Images of the new spectrum of tuberculosis' Plenary talk, American Thoracic Society, San Diego, CA, 1400 Sunday 18th May 2014, Scientific symposium A87

Wilkinson R The Immunology of HIV associated tuberculosis' Convener and Session chair, 4th South African tuberculosis conference, Durban, 12th June 2014

Wilkinson R Transcriptional profiling in human tuberculosis' Invited speaker and plenary, 11th European Federation of Immunology Societies-European Journal of Immunology Tatra Immunology conference, Strbské Pleso, Slovakia, 7th September 2014

Wilkinson R Transcriptional profiling in human tuberculosis' Invited speaker KwaZuluNatal Research institute for tuberculosis and HIV, Durban, South Africa, 10th October 2014

Wilkinson R The application of, and opportunities for, genomics to improve understanding of HIV-TB interaction in the context of global health' Invited opening plenary speaker Host response to TB-HIV infection: a genomic perspective, National Institutes of Health, Rockville, MD, January 13-14th 2015

Wilkinson R Safety, immunogenicity and efficacy of the candidate tuberculosis vaccine MVA85A in

healthy HIV-1-infected adults: a randomized, placebo-controlled phase 2 trial' Invited plenary (final talk) Keystone symposium on Host response in tuberculosis, Santa FE, NM, January 26th 2015
Wilkinson R Understanding and intervening in HIV-associated tuberculosis' Invited speaker, Advanced Medicine, Royal College of Physicians of London, February 9th 2015
Wilkinson R Transcriptomic profiling in human tuberculosis' Invited speaker RePORT (NIH) annual meeting, Boston, MA 24th September 2015

Publications

With regard to scientific publications published before or after the final report, such details/references and an abstract of the publication must be provided to the REA or the Commission at the latest two months following publication.

Furthermore, an electronic copy of the published version or the final manuscript accepted for publication must also be provided to the REA or the Commission at the same time for the purpose of publication by the REA or the Commission if this does not infringe any rights of third parties.

LIST OF SCIENTIFIC PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES

No.	Title / DOI	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Date of publication	Relevant pages	Is open access provided to this publication ?	Type
1	The efficacy of a brief intervention to reduce alcohol misuse in patients with HIV in South Africa: study protocol for a randomized controlled trial.	Huis in 't Veld D, Skaal L, Peltzer K, Colebunders R, Ndimande JV, Pengpid S	Trials	TBD	BioMed Central		01/01/2013	TBD	Yes	Peer reviewed
2	Role of concurrency in generalised HIV epidemics. (Letter)	Kenyon C, Colebunders B.	Lancet, The	378	Elsevier Limited		26/11/2011	1844	No	Peer reviewed
3	A Tale Of Two Epidemics Within TWO Countries.	Kenyon C, Boulle A, Colebunders R, Dlamini S, Johnson S.	Journal of Adolescent Health	50 (2)	Elsevier USA		01/02/2012	208-209	No	Peer reviewed
4	Corticosteroid Modulated Immune Activation in the TB Immune Reconstitution Inflammatory Syndrome. 10.1164/rccm.201201-0094OC	Meintjes G, Skolimowska KH, Wilkinson KA, Matthews K, Tadoke R, Conesa-Botella A, Seldon R, Rangaka MX,	American Journal of Respiratory and Critical Care Medicine	186(4)	American Thoracic Society		15/08/2012	369-377	Yes	Peer reviewed

		Rebe K, P epper DJ, Morrone C, Colebunde rs R, Maartens G, Wilkinso n RJ.								
5	Severe efavirenz-induced vacuolar axonopathy complicated by fatal aspiration pneumonia.	Kenyon C, Mfolozi S, Croxford R, Colebunde rs R, Cohen K	British Journal of Clinical Pharmacology	74(6)	Blackwell Publishing		01/01/2012	1070-1072	No	Peer reviewed
6	Corticosteroid therapy, vitamin D status, and inflammatory cytokine profile in the HIV-TB immune reconstitution inflammatory syndrome (TB-IRIS). 10.1093/cid/cis577	Conesa-Bo t ella A, Me intjes G, Coussens AK, van der Plas H, Goliath R, Schutz C, Moreno-R ey es R, Mehta M, Martinea u AR, Wilkinso n RJ, Colebun d ers R, Wi lkinso n KA	Clinical Infectious Diseases	55(7)	Oxford University Pr ess		01/10/2012	1004-1011	Yes	Peer reviewed
7	Strong association between point-concurrency and national peak HIV prevalence.(letter)	Kenyon C, Colebunde rs R.	International Journal of Infectious Diseases	16(11)	Elsevier		01/01/2012	826-827	No	Peer reviewed
8	Antiretroviral Pre-exposure Prophylaxis for HIV Prevention.(letter).	Kenyon C, Colebunde rs R.	New England Journal of Medicine	368(1)	Massachusett s Medical Society		03/01/2013	82-84	No	Peer reviewed
9	What is the optimal first line antiretroviral therapy in resource-limited settings? (Comment)	Kenyon C, Colebunde rs R.	PLoS Medicine	9(8)	Public Library of Sc ience		01/08/2012	e1001291	Yes	Peer reviewed
10	Peak HIV prevalence: a useful outcome variable for ecological studies.	Kenyon C, Colebunde rs R, Voeten H, Lurie M.	International Journal of Infectious Diseases	TBD	Elsevier		27/03/2013	e-publica tion ahead of print	No	Peer reviewed
11	Birds of a feather: homophily and sexual network structure in sub-Saharan Africa.	Kenyon C, Colebunde rs R.	International Journal of STD and AIDS	TBD	Royal Society of Med icine Press Ltd		27/03/2013	e-publica tion ahead of print	No	Peer reviewed

12	What is the Place of Pre-Exposure Prophylaxis in HIV Prevention?	De Man J, Colebunders R, Florence E, Laga M, Kenyon C.	AIDS Reviews	15(2)	Publicaciones Permanyer		17/05/2013	102-111	Yes	Peer reviewed
13	HIV Prevalence by Race Co-Varies Closely with Concurrency and Number of Sex Partners in South Africa.	Kenyon C, Buyze J, Colebunders R.	PLoS One	8(5)	Public Library of Science		21/05/2013	e64080	Yes	Peer reviewed
14	The global epidemiology of bacterial vaginosis: a systematic review.	Kenyon C, Colebunders R, Crucitti T.	American Journal of Obstetrics and Gynecology	TBD	Mosby Inc.		06/05/2013	e-publication ahead of print	No	Peer reviewed
15	Antiretrovirals in pregnancy: a note of caution. (letter)	Colebunders RL, Myer L.	International Journal of Infectious Diseases	TBD	Elsevier		09/05/2013	e-publication ahead of print	No	Peer reviewed
16	Acceptability of HIV self-testing: a systematic literature review.	Krause J, Subklew- Sehume F, Kenyon C, Colebunders R.	BMC Public Health	13(1)	BioMed Central		08/08/2013	735	Yes	Peer reviewed
17	Determinants of generalized herpes simplex virus-2 epidemics: the role of sexual partner concurrency.	Kenyon C, Colebunders R, Hens N.	International Journal of STD and AIDS	24(5)	Royal Society of Medicine Press Ltd		24/05/2013	375-382	No	Peer reviewed
18	Partner-concurrency associated with herpes simplex virus 2 infection in young South Africans.	Kenyon C, Colebunders R, Buve A, Hens N.	International Journal of STD and AIDS	24(10)	Royal Society of Medicine Press Ltd		01/10/2013	804-812	No	Peer reviewed
19	Emmonsia sp, a dimorphic fungus causing disseminated infection in South Africa.	Kenyon C, Bonorchis K, Corcoran C, Meintjes G, Locketz M, Lehloeny a R, Vismer H, Naicker P, Prozesky H, van Wyk M, Bamford C, du Plooy M, Imrie G, Dlamini S, Borman A, Colebunders R,	New England Journal of Medicine	TBD	Massachusetts Medical Society		01/01/2013	in press	No	Peer reviewed

		Yansouni C, Mendelso n M, Govender N.								
20	Increase in numbers and proportions of review articles in Tropical Medicine, Infectious Diseases and Oncology.	Colebunders R, Kenyon C, Rousseau R.	Journal of the American Society for Information Science and Technology	TBD	John Wiley and Sons Inc.		01/01/2013	TBD	No	Peer reviewed
21	The rapid diagnosis of tuberculosis with Xpert MTB-RIF assay in high burden countries: a cost-effectiveness analysis.	Vassall A, van Kampen S, Sohn H, Michael JS, John KR, den Boon S, Davis JL, Whitelaw A, Nicol MP, Gier MT, Khaliqov A, Zamudio C, Perkins MD, Boehme CC, Cobelens F.	PLoS Medicine	8	Public Library of Science		01/01/2011	e1001120	Yes	Peer reviewed
22	The immunopathogenesis of the HIV tuberculosis immune reconstitution inflammatory syndrome. 10.1002/eji.201343632	Lai RP, Nakiwala JK, Meintjes G, Wilkinson RJ.	European Journal of Immunology	43(8)	Wiley-VCH Verlag		01/08/2013	1995-2002	Yes	Peer reviewed
23	Procollagen III N-terminal Propeptide and Desmosine are Released by Matrix Destruction in Pulmonary Tuberculosis .	Seddon J, Kasprovic V, Walker NF, Yuen HM, Sunpath H, Tezera L, Meintjes G, Wilkinson RJ, Bishai WR, Friedland JS, Elkington PT.	Journal of Infectious Diseases	TBD	Oxford University Press		09/08/2013	e-publication ahead of print	Yes	Peer reviewed
24	HIV-1 and the immune response to TB.	Walker NF, Meintjes G, Wilkinson RJ.	Future Virology	8(1)	Future Medicine Ltd.		01/01/2013	57-80	Yes	Peer reviewed
25	Complications of antiretroviral therapy	van der Plas	PLoS One	8(2)	Public Library of Science		08/02/2013	e54145	Yes	Peer reviewed

	initiation in hospitalised patients with HIV-associated tuberculosis. 10.1371/journal.pone.0054145	H, Meintjes G, Schutz C, Goliath R, Meyer L, Baatjie D, Wilkinson RJ, Maartens G, Mendelson M.			ience					wed
26	Role of the interleukin 10 family of cytokines in patients with immune reconstitution inflammatory syndrome associated with HIV infection and tuberculosis. 10.1093/infdis/jit002	Tadokera R, Wilkinson KA, Meintjes GA, Skolimowska KH, Matthews K, Seldon R, Rangaka MX, Maartens G, Wilkinson RJ.	Journal of Infectious Diseases	207(7)	Oxford University Press		09/01/2013	1148-56	Yes	Peer reviewed
27	Frequency, severity, and prediction of tuberculous meningitis immune reconstitution inflammatory syndrome. 10.1093/cid/cis899	Marais S, Meintjes G, Pepper DJ, Dodd LE, Schutz C, Ismail Z, Wilkinson KA, Wilkinson RJ.	Clinical Infectious Diseases	56(3)	Oxford University Press		01/02/2013	450-60	Yes	Peer reviewed
28	Altered ratio of IFN- γ /IL-10 in patients with drug resistant Mycobacterium tuberculosis and HIV-Tuberculosis Immune Reconstitution Inflammatory Syndrome. 10.1371/journal.pone.0046481	Skolimowska KH, Rangaka MX, Meintjes G, Pepper DJ, Seldon R, Matthews K, Wilkinson RJ, Wilkinson KA.	PLoS One	7(10)	Public Library of Science		10/10/2012	e46481	Yes	Peer reviewed
29	Assessment at antiretroviral clinics during TB treatment reduces loss to follow-up among HIV-infected patients. 10.1371/journal.pone.0037634	Pepper DJ, Marais S, Bhajee F, Wilkinson RJ, De Azevedo V, Meintjes G.	PLoS One	7(6)	Public Library of Science		18/06/2012	e37634	Yes	Peer reviewed
30	Immunological characterisation of an unmasking TB-IRIS case.	Wilkinson KA, Meintjes G, Seldon R,	South African Medical Journal	102(6)	South African Medical Association		02/03/2012	512-7	No	Peer reviewed

		Goliath R, Wilkinson RJ.								
31	Burden of antituberculosis and antiretroviral drug-induced liver injury at a secondary hospital in South Africa.	Schutz C, Ismail Z, Proxenos CJ, Marais S, Burton R, Kenyon C, Martens G, Wilkinson RJ, Meintjes G.	South African Medical Journal	102(6)	South African Medical Association		02/03/2012	506-11	No	Peer reviewed
32	Doxycycline and HIV infection suppress tuberculosis-induced matrix metalloproteinases. 10.1164/rccm.201110-1769OC	Walker NF, Clark SO, Oni T, Andreu N, Tezera L, Singh S, Saraiva L, Pedersen B, Kelly DL, Tree JA, D'Armiento JM, Meintjes G, Mauri FA, Williams A, Wilkinson RJ, Friedland JS, Elkington PT.	American Journal of Respiratory and Critical Care Medicine	185(9)	American Thoracic Society		01/05/2012	989-97	Yes	Peer reviewed
33	Determinants of Weight Evolution Among HIV-Positive Patients Initiating Antiretroviral Treatment in Low-Resource Settings 10.1097/QAI.0000000000000691	Diana Huis # Veld, Eric Balestre, Jozefien Buyze, Joris Menten, Antoine Jaquet, David A. Cooper, Francois Dabis, Constantine T. Yiannoutsos, Lameck Diero, Portia Mutevedzi, Matthew P. Fox, Eugene Messou, Christopher J. Hoffmann,	Journal of Acquired Immune Deficiency Syndromes	Vol. 70/Issue 2	Lippincott Williams and Wilkins	United States	01/01/2015	146-154	No	Peer reviewed

		Hans W. Prozesky , Matthias Egger , Jennifer J. Hemingway-Foday , Robert Colebunders								
34	Clinical Characteristics, Diagnosis, Management, and Outcomes of Disseminated Emmonsiosis: A Retrospective Case Series 10.1093/cid/civ439	Ilan S. Schwartz , Neelesh P. Govender , Craig Corcoran , Siphon Dlamini , Hans Prozesky , Rosie Burton , Marc Mendelson , Jantjie Taljaard , Rannakoe Lehloenyane , Greg Calligaro , Robert Colebunders , Chris Kenyon	Clinical Infectious Diseases	Vol. 61/Issue 6	Oxford University Press	United States	15/09/2015	1004-1012	No	Peer reviewed
35	Migration intensity has no effect on peak HIV prevalence: an ecological study 10.1186/1471-2334-14-350	Chris Kenyon , Robert Colebunders , Helene Votien , Mark Lurie	BMC Infectious Diseases	Vol. 14/Issue 1	BioMed Central	United Kingdom	01/01/2014	350	Yes	Peer reviewed
36	The Association between Female Genital Cutting and Spousal HCV Infection in Egypt 10.1155/2014/164357	Chris R. Kenyon , Robert Colebunders	International Journal of Hepatology	Vol. 2014			01/01/2014	1-10	Yes	Peer reviewed
37	Paradoxical TB-IRIS in HIV-infected adults: a systematic review and meta-analysis 10.2217/fmb.15.9	Phiona Enamale , Leilah Abdullahi , Stacey Fine , Monika Kamkuemah , Robert J Wilkinson ,	Future Microbiology	Vol. 10/Issue 6	Future Medicine Ltd.	United Kingdom	01/06/2015	1077-1099	No	Peer reviewed

		Graeme Meintjes								
38	Immune reconstitution inflammatory syndrome in HIV-infected patients 10.2147/HIV.S 42328	Robert J Wilkinson , Naomi Frances Walker , James Scriven , Graeme Meintjes	HIV/AIDS - Research and Palliative Care	7	Dove Medical Press Ltd.	New Zealand	12/02/2015	49	Yes	Peer reviewed
39	Cytotoxic Mediators in Paradoxical HIV-Tuberculosis Immune Reconstitution Inflammatory Syndrome 10.4049/jimmunol.1402105	K. A. Wilkinson , N. F. Walker , G. Meintjes , A. Deffur , M. P. Nicol , K. H. Skolimowska , K. Matthews , R. Tadokera , R. Seldon , G. Maartens , M. X. Rangaka , G. S. Besra , R. J. Wilkinson	Journal of Immunology	Vol. 194/Issue 4	American Association of Immunologists	United States	15/02/2015	1748-1754	Yes	Peer reviewed
40	Neutrophil-Associated Central Nervous System Inflammation in Tuberculous Meningitis Immune Reconstitution Inflammatory Syndrome 10.1093/cid/ciu641	S. Marais , K. A. Wilkinson , M. Lesosky , A. K. Cousins , A. Deffur , D. J. Pepper , C. Schutz , Z. Ismail , G. Meintjes , R. J. Wilkinson	Clinical Infectious Diseases	Vol. 59/Issue 11	Oxford University Press	United States	01/12/2014	1638-1647	Yes	Peer reviewed
41	Central Nervous System Immune Reconstitution Inflammatory Syndrome 10.1007/s11908-013-0378-5	Nathan Bahr , David R. Boulware , Suzaan Marais , James Scriven , Robert J. Wilkinson , Graeme Meintjes	Current Infectious Disease Reports	Vol. 15/Issue 6	Current Science, Inc.	United States	01/12/2013	583-593	Yes	Peer reviewed
42	Matrix metalloproteinases and tissue damage	Rebecca Ta	European Journal of Immunology	Vol. 44/Is	Wiley-VCH Verlag	Germany	01/01/2014	127-136	Yes	Peer reviewed

	age in HIV-tuberculosis immune reconstitution inflammatory syndrome 10.1002/eji.201343593	dokera, Graeme A. Mointjes, Katalin A. Wilkinson, Keira H. Skolimowska, Naomi Walker, Jonathan S. Friedland, Gary Maartens, Paul T. G. Elkington, Robert J. Wilkinson		sue 1						wed
43	The predictive value of current haemoglobin levels for incident tuberculosis and/or mortality during long-term antiretroviral therapy in South Africa: a cohort study 10.1186/s12916-015-0320-9	Andrew D Kerckhoff, Robin Wood, Frank G Coblenz, Ankur Gupta-Wright, Linda-Gail Bekker, Stephen D Lawn	BMC Medicine	Vol. 13/Issue 1	BioMed Central	United Kingdom	01/12/2015	70	Yes	Peer reviewed
44	Resolution of anaemia in a cohort of HIV-infected patients with a high prevalence and incidence of tuberculosis receiving antiretroviral therapy in South Africa 10.1186/s12879-014-0702-1	Andrew D Kerckhoff, Robin Wood, Frank G Coblenz, Ankur Gupta-Wright, Linda-Gail Bekker, Stephen D Lawn	BMC Infectious Diseases	Vol. 14/Issue 1	BioMed Central	United Kingdom	01/01/2014	3860	Yes	Peer reviewed
45	The perceptions and perspectives of patients and health care providers on chronic diseases management in rural South Africa: a qualitative study 10.1186/s12913-015-0812-5	Eric Maimela, Jean-Pierre Van Geertruyden, Marianne Alberts, Sewela EP Modjadji, Herman Meulemans, Jesicca Fraeyman, Hilde Bastiaens	BMC Health Services Research	Vol. 15/Issue 1	BioMed Central	United Kingdom	01/12/2015	143	Yes	Peer reviewed

46	The degree to which physiotherapy literature includes physical activity as a component of health promotion in practice and entry level education: a scoping systematic review 10.3109/09593985.2013.783896	Nomathembona Patricia Taubong, Helen Myezwa, Supa Pengpid, Jean-Pierre Van Geertruyden	Physiotherapy Theory and Practice	Vol. 30/Issue 1	Informa Healthcare	United Kingdom	01/01/2014	12-19	No	Peer reviewed
47	Behaviour, not mobility, is a risk factor for HIV	Colebunders R, Kenyon C	The Lancet HIV	6	Elsevier Limited		02/06/2015	223-4	No	Peer reviewed
48	Prevention and treatment of the immune reconstitution inflammatory syndrome 10.1097/COH.0b013e3282fe6e84	Graeme Meintjes, Lut Lynen	Current Opinion in HIV and AIDS	Vol. 3/Issue 4	Lippincott Williams and Wilkins	United States	01/01/2008	468-476	No	Peer reviewed
49	HIV-tuberculosis-associated immune reconstitution inflammatory syndrome is characterized by Toll-like receptor and inflammasome signalling 10.1038/ncomms9451	Rachel P. J. Lai, Graeme Meintjes, Katalin A. Wilkinson, Christine M. Graham, Suzan Marais, Helen Van der Plas, Armin Deffur, Charlotte Schut, Chloe Bloom, Indira Munagala, Esperanza Anguiano, Rene Goliath, Gary Maartens, Jacques Banchereau, Damien Chaussabel, Anne O'Garra, Robert J. Wilkinson	Nature Communications	Vol. 6	Nature Publishing Group	United Kingdom	24/09/2015	8451	Yes	Peer reviewed
50	Re-imagining decision making: addressing a discrete social driver of HIV/AIDS through the lens of complexity science 10.2989/16085906.2015.1016983	Christopher J Burman, Linda Moerscheil, Robert Mamabolo,	African Journal of AIDS Research	Vol. 14/Issue 1	Taylor and Francis Ltd.	South Africa	02/01/2015	75-84	No	Peer reviewed

		Marota Aphane , Peter Delobelle								
51	Reducing the overall HIV-burden in South Africa: is 'reviving ABC' an appropriate fit for a complex, adaptive epidemiological HIV landscape? 10.2989/16085906.2015.1016988	Christopher J Burman , Marota Aphane , Peter Delobelle	African Journal of AIDS Research	Vol. 14/Issue 1	Taylor and Francis Ltd.	South Africa	02/01/2015	13-28	No	Peer reviewed
52	Expanding the prevention armamentarium portfolio: A framework for promoting HIV-Conversion Communities within a complex, adaptive epidemiological landscape 10.1080/17290376.2015.1034292	Christopher J. Burman , Marota Aphane , Oliver Mtapuri , Peter Delobelle	Sahara J	Vol. 12/Issue 1	Health and Medical Publishing Group	South Africa	01/01/2015	18-29	Yes	Peer reviewed
53	Laser micro-dissection and qPCR for identifying specific HPV types responsible for malignancy in penile lesions 10.1002/jmv.24229	Ramokone L. Lebelo , Sofie Thys , Ina Benoy , Christophe E. Depuydt , John-Paul Bogers , Meshack N. Bida , M. Jeffrey Mphahlele	Journal of Medical Virology	Vol. 87/Issue 10	Wiley-Liss Inc.	United States	01/10/2015	1761-1768	No	Peer reviewed
54	Diversity of HPV types in cancerous and pre-cancerous penile lesions of South African men: Implications for future HPV vaccination strategies 10.1002/jmv.23730	Ramokone L. Lebelo , Gaëlle Boulet , Cornelius M. Nkosi , Meshack N. Bida , John-Paul Bogers , M. Jeffrey Mphahlele	Journal of Medical Virology	Vol. 86/Issue 2	Wiley-Liss Inc.	United States	01/02/2014	257-265	No	Peer reviewed
55	Interleukin 27R regulates CD4+ T cell phenotype and impacts protective immunity during Mycobacterium tuberculosis infection 10.1084/jem.20141520	E. Torrado , J. J. Fountain , M. Liao , M. Tighe , W. W. Reiley , R. P. Lai , G. Meintjes , J. E. Pearl , X. Chen ,	Journal of Experimental Medicine	Vol. 212/Issue 9	Rockefeller University Press	United States	24/08/2015	1449-1463	Yes	Peer reviewed

		D. E. Zak , E. G. Thompson , A. Aderem , N. Ghilardi , A. Solache , K . K. McKinstry , T. M. Strutt , R. J. Wilkinson , S. L. Swain , A. M. Cooper								
56	Mycobacterial Antigen Driven Activation of CD14 ⁺ CD16 ⁻ Monocytes Is a Predictor of Tuberculosis-Associated Immune Reconstitution Inflammatory Syndrome 10.1371/journal.ppat.1004433	Bruno B. Andrade , Amrit Singh , Gopalan Narendran , Melissa E. Schechter , Kaustubh Nayak , Sudha Subramanian , Selvaraj Anbalagan , Stig M. R. Jensen , Brian O. Porter , Lisa R. Antonelli , Katalin A. Wilkinson , Robert J. Wilkinson , Graeme Meintjes , Helen van der Plas , Dean Follmann , Daniel L. Barber , Soumya Swaminathan , Alan Sher , Irini Sereti	PLoS Pathogens	Vol. 10/Issue 10	Public Library of Science	United States	02/10/2014	e1004433	Yes	Peer reviewed
57	Hepatitis B vaccination of healthcare workers at the Princess Marina Hospital, Botswana 10.1093/inthealth/ihu084	Tichaona Machiya , Rosemary J. Burnett , Lucy Fernandes ,	International Health	Vol. 7/Issue 4	Elsevier Limited	United Kingdom	01/07/2015	256-261	No	Peer reviewed

		Guido François , Antoon De Schryver , Marc van Sprundel , M. Jeffrey Mphahlele								
58	Need for a comprehensive , consistently applied national hepatitis B vaccination policy for healthcare workers in higher educational institutions: a case study from South Africa 10.1016/j.jhin.2012.11.026	L. Fernandes , R.J. Burnett , G. François , M.J. Mphahlele , M. Van Sprundel , A. De Schryver	Journal of Hospital Infection	Vol. 83/Issue 3	W.B. Saunders Ltd	United Kingdom	01/03/2013	226-231	No	Peer reviewed
59	National Guidelines Not Always Followed When Diagnosing Smear-Negative Pulmonary Tuberculosis in Patients with HIV in Botswana 10.1371/journal.pone.0088654	Taurayi A. Tafuma , Rosemary J. Burnett , Diana Huis in 't Veld	PLoS One	Vol. 9/Issue 2	Public Library of Science	United States	14/02/2014	e88654	Yes	Peer reviewed
60	Sequence-Based Analysis Uncovers an Abundance of Non-Coding RNA in the Total Transcriptome of Mycobacterium tuberculosis 10.1371/journal.ppat.1002342	Kristine B. Arnvig , Iñaki Comas , Nicholas R. Thomson , Joanna Houghton , Helena I. Boshoff , Nicholas J. Croucher , Graham Rose , Timothy T. Perkins , Julian Parkhill , Gordon Dogan , Douglas B. Young	PLoS Pathogens	Vol. 7/Issue 11	Public Library of Science	United States	03/11/2011	e1002342	Yes	Peer reviewed
61	Risk Factors for Acquired Rifamycin and Isoniazid Resistance: A Systematic Review and Meta-Analysis 10.1371/journal.pone.0139017	Neesha Rockwood , Leila H. Abdullahi , Robert J. Wilkinson , Graeme McIntjes	PLoS One	Vol. 10/Issue 9	Public Library of Science	United States	25/09/2015	e0139017	Yes	Peer reviewed

62	Cervical Cancer Screening among University Students in South Africa: A Theory Based Study 10.1371/journal.pone.0111557	Muhammad Ehsanu Hoque , Shanaz Ghuman , Roger Coopoomsamy , Guido Van Hal	PLoS One	Vol. 9/Issue 11	Public Library of Science	United States	11/11/2014	e111557	Yes	Peer reviewed
63	Acceptability of Human Papillomavirus Vaccine: A Survey among Master of Business Administration Students in KwaZulu-Natal, South Africa 10.1155/2014/257807	Muhammad Ehsanul Hoque , Guido Van Hal	BioMed Research International	Vol. 2014	Hindawi Publishing Corporation	United States	01/01/2014	1-6	Yes	Peer reviewed
64	Knowledge of and attitude towards human papillomavirus infection and vaccines among nurses at a tertiary hospital in South Africa 10.3109/01443615.2013.861395	M. E. Hoque , S. Monokoane , G. Van Hal	Journal of Obstetrics and Gynaecology	Vol. 34/Issue 2	Informa Healthcare	United Kingdom	01/02/2014	182-186	No	Peer reviewed
65	Patterns of HIV, TB, and non-communicable disease multi-morbidity in peri-urban South Africa- a cross sectional study 10.1186/s12879-015-0750-1	Tolu Oni , Elizabeth Youngblood , Andrew Boule , Nuala McGrath , Robert J Wilkinson , Naomi S Levitt	BMC Infectious Diseases	Vol. 15/Issue 1	BioMed Central	United Kingdom	01/01/2015	20	Yes	Peer reviewed
66	Tuberculosis, HIV, and type 2 diabetes mellitus: a neglected priority 10.1016/S2213-2600(13)70116-4	Tolu Oni , Kari Stoeber , Robert J Wilkinson	The Lancet Respiratory Medicine	Vol. 1/Issue 5	Elsevier	United Kingdom	01/07/2013	356-358	No	Peer reviewed
67	Detection of Tuberculosis in HIV-Infected and -Uninfected African Adults Using Whole Blood RNA Expression Signatures: A Case-Control Study 10.1371/journal.pmed.1001538	Myrsini Kaporou , Victoria J. Wright , Tolu Oni , Neil French , Suzanne T. Anderson , Nonzwakazi Bangani , Claire M. Banwell , Andrew J. Brent ,	PLoS Medicine	Vol. 10/Issue 10	Public Library of Science	United States	22/10/2013	e1001538	Yes	Peer reviewed

		Amelia C. Crampin , Hazel M. D ockrell , Brian Eley , Robert S. Heyderma n , Martin L. Hibberd , Florian Kern , Paul R. La ngford , Ling Ling , Marc Mendelson , Tom H. Otten hof f , Femia Zgambo , Rob ert J. Wilkinso n , Lachlan J. Coin , Mic hael Levin								
68	A Recent HIV Diagnosis Is Associated with Non-Completion of Isoniazid Preventive Therapy in an HIV-Infected Cohort in Cape Town 10.1371/journal.pone.0052489	Tolu Oni , Relebohile Tsekela , Bek ekile Kwaza , Lulama Manj ezi , Nonz wakazi Ban gani , Katalin A. Wilkinso n , David Coet zee , Robert J. Wilkinson	PLoS One	Vol. 7/Issue 12	Public Library of Science	United States	20/12/2012	e52489	Yes	Peer reviewed
69	Prevalence, Hemodynamics, and Cytokine Profile of Effusive-Constrictive Pericarditis in Patients with Tuberculous Pericardial Effusion 10.1371/journal.pone.0077532	Mpiko Ntse khe , Kerryn Matthews , Faisal F. Syed , Armin Deffur , Motasim Badri , Patrick J. Commerford , Bernard J. Gersh , Katalin A. Wilkinso n , Robert J. Wilkinso n , Bongani M.	PLoS One	Vol. 8/Issue 10	Public Library of Science	United States	14/10/2013	e77532	Yes	Peer reviewed

		Mayosi								
70	Scientific letter: Ac-SDKP (N-acetyl-seryl-aspartyl- lysyl-proline) and Galectin-3 levels in tuberculous pericardial effusion: implications for pathogenesis and prevention of pericardial constriction 10.1136/heart.jnl-2012-302196	M. Ntsekhe , K. Matthews , J. Wolske , M. Badri , K. A. Wilkinson , R. J. Wilkinso n , E. D. Sturrock , B. M. M ayosi	Heart	Vol. 98/Issue 17	BMJ Publishing Group	United Kingdom	01/09/2012	1326-1328	Yes	Peer reviewed
71	Correlates of concurrency among young people in Carletonville, South Africa 10.1080/17290376.2015.1100093	Chris Kenyon , Robert Col eburners	Sahara J	Vol. 12/Issue 1	Health and Medical Publishing Group	South Africa	01/01/2015	51-58	Yes	Peer reviewed
72	HIV Prevalence Correlates with High-Risk Sexual Behavior in Ethiopia's Regions	Kenyon CR1 Tsoumanis A, Schwartz IS	PLoS One	10	Public Library of Science		23/10/2015	e0140835	Yes	Peer reviewed
73	HIV-1 tuberculosis- associated immune reconstitution inflammatory syndrome	Lai RP, Meintjes G, Wilkinso n R	Seminars in Immunopathology	online	Springer Verlag		30/09/2015	online	Yes	Peer reviewed
74	Rapid microbiologic al screening for tuberculosis in HIV-positive patients on the first day of acute hospital admission by systematic testing of urine samples using Xpert MTB/RIF: a prospective cohort in South Africa 10.1186/s12916-015-0432-2	Stephen D. Lawn , Andrew D. Kerkhoff , Rosie Burton , Charlotte S chutz , Gavin van Wyk , Monica Vogt , Pearl Pahlana , Mark P. Nicol , Graeme Meintjes	BMC Medicine	Vol. 13/Issue 1	BioMed Central	United Kingdom	01/12/2015	online	Yes	Peer reviewed
75	Raised Venous Lactate and Markers of Intestinal Translocation Are Associated With Mortality Among In-Patients With HIV-Associated TB in Rural South Africa 10.1097/QAI.0000000000000763	Sathyavan i Subbarao , Katalin A. Wilkinso n , Clare L. van Halsema , Sushasini Subba Rao , Tom Boyles , Netanya S. Utay , Robert J.	Journal of Acquired Immune Deficiency Syndromes	Vol. 70/Issue 4	Lippincott Williams and Wilkins	United States	01/01/2015	406-413	No	Peer reviewed

		Wilkinson , Graeme M eintjes								
76	Point-of-care ultrasound: a simple protocol to improve diagnosis of childhood tuberculosis 10.1007/s00247-014-2971-7	Sabine Bélard , Tom Heller , Martin P. Grobusch , Heather J. Zar	Pediatric Radiology	Vol. 44/Issue 6	Springer Verlag	Germany	01/06/2014	679-680	No	Peer reviewed
77	Treatment of childhood tuberculosis: caregivers' practices and perceptions in Cape Town, South Africa 10.1179/2046905514Y.0000000133	Sabine Bélard , Washiefa Isaacs , Faye Black , Lindy Bateman , Lucia Madolo , Jacinta Munro , Lesley Workman , Martin P. Grobusch , Heather J. Zar	Pediatrics International	Vol. 35/Issue 1	Blackwell Publishing		01/02/2015	24-28	No	Peer reviewed
78	50 Years of Emmonsia Disease in Humans: The Dramatic Emergence of a Cluster of Novel Fungal Pathogens 10.1371/journal.ppat.1005198	Ilan S. Schwartz , Chris Kenyon , Peiyi Feng , Nelesh P. Grovender , Karolina Dukik , Lynne Sigler , Yanping Jiang , J. Benjamin Stielow , José F. Muñoz , Christina A. Cuomo , Alfred Botha , Alberto M. Stchigel , G. Sybren de Hoog	PLoS Pathogens	Vol. 11/Issue 11	Public Library of Science	United States	19/11/2015	e1005198	Yes	Peer reviewed
79	Assessment of cardiovascular risk factors in people with HIV infection treated with ART in rural South Africa: a cross sectional study	Mashinya F, Alberts M, Van Geertruyden JP, Colebunders R	AIDS Research and Therapy	12	BioMed Central		10/12/2015	42	Yes	Peer reviewed

The underlying determinants of South Africa's generalized HIV epidemic	Chris Kenyon			University of Antwerp	Antwerp	26/06/2012		Yes	Thesis
Pathogenesis of the tuberculosis associated immune reconstitution inflammatory syndrome: role of mycobacterial load and vitamin D status?	Conesa Anali			University of Antwerp	Antwerp	28/06/2012		Yes	Thesis
Hepatitis B virus and Human immunodeficiency virus co-infection: a perspective of sub-Saharan Africa and South-Africa	Burnett			University of Antwerp	Antwerp	14/11/2011		Yes	Thesis
Clinical epidemiology of HIV associated tuberculosis in Kayelitsha, a South African township	Tolu Oni			Imperial College London		01/12/2011		No	Thesis
Diagnosis, treatment and immunopathogenesis of the HIV-associated tuberculosis immune reconstitution inflammatory syndrome	Meintjes G			University Cape Town		30/11/2011		No	Thesis
Immunological Characterisation of the HIV-Tuberculosis associated Immune Reconstitution Syndrome	Tadokera Rebecca			University of Cape Town		30/11/2011		No	Thesis
The innate immune response to mycobacterium tuberculosis is dependent on strain lineage and on the host population	Rajesh Sarkar			University of Cape Town		31/05/2013		No	Thesis
Molecular characterisation of human papillomavirus types in South Africa	Lisbeth Ramokone Lebello			University of Limpopo		21/08/2014		Yes	Thesis

Section B (confidential) - EXPLOITABLE FOREGROUND AND PLANS FOR EXPLOITATION

This section should specify the exploitable foreground and provide the plans for exploitation. It will be kept confidential and will be treated as such by the REA.

The applications for patents, trademarks, registered designs, etc. must be listed according to the template provided below.

The list should specify at least one unique identifier e.g. European Patent application reference. For patent applications, only if applicable, contributions to standards should be specified.

LIST OF APPLICATIONS FOR PATENTS, TRADEMARKS, REGISTERED DESIGNS, UTILITY MODELS, ETC.					
Type of IP Rights	Confidential	Foreseen embargo date dd/mm/yyyy	Application reference(s) (e.g. EP123456)	Subject or title of application	Applicant(s) (as on the application)

OVERVIEW TABLE OF EXPLOITABLE FOREGROUND								
Type of Exploitable Foreground	Description of Exploitable Foreground	Confidential	Foreseen embargo date dd/mm/yyyy	Exploitable product(s) or measure(s)	Sector(s) of application	Timetable for commercial use or any other use	Patents or other IPR exploitation (licences)	Owner and Other Beneficiary(s) involved

ADDITIONAL TEMPLATE B2: OVERVIEW TABLE OF EXPLOITABLE FOREGROUND	
Description of Exploitable Foreground	Explain of the Exploitable Foreground

3. PERSON IN CHARGE QUESTIONNAIRE

EXCHANGE MOBILITY ASSESSMENT:

What is the size of the hosting research group?	10
---	----

How many researchers have you supervised, within the past 10 years? Of which funded by:

EC/Marie Curie actions	0
EC Other Funding	1
University fellowships	4
National public bodies	7
Industry	0
Other	8

Other, please specify:

Phd students working on their PhD while working in a hospital, or for an NGO

How many researchers have you supervised within this project?	3
Corresponding to how many person months?	2

Number of publications resulting directly from the research project:

Selected researcher(s) and yourself	79
Selected researcher(s) alone	37
Selected researcher(s) with authors other than yourself	52

Participation of the selected researcher(s) in conferences (number):

Passive	4
Active	14
How do you rate the overall success of the research training?	Good

General assessment:

Large scientific output thanks to the quality of the researcher involved
 The consortium published 79 reviewed papers (only 25 were promised in the proposal)
 8 PhD students successfully defended their PhD (only 4 were promised in the proposal)

RESEARCHER ASSESSMENT:

Rate the overall level of the recruited researcher(s) integration in the research team and the host organisation with regards to:

participation in meetings/seminars	Good
discussions of results and project-related topics	Good

co-operation with other team members	Good
co-operation with other researchers of the host institution	Good
co-operation with other researchers of the partnership	Good

Rate the overall performance of the selected researcher(s) with regard to:

originality of researchers' approach towards research (initiative/independent thinking)	Good
capacity to develop new skills and to benefit from training	Good
productivity (research results/ publications/ international conference attendance)	Good
communication skills	Good
group leader skills (collaboration with other groups/project management)	Good
training and/or teaching skills	Good

Comment:

A lot of exchanges were very useful and resulted in research papers, research protocols or a PhD. Some exchanges were short, because explorative, administrative or supervision type of exchanges. Only one of the longer stays of an ESR was less successful and so far did not result as planned in a PhD.

RESEARCH NETWORKING OUTCOMES:

Do you intend to continue the collaboration and networking activities after the end of the project?	Yes
--	-----

If no, please specify:

Has this project provided additional links with other research groups or institutions?	Yes
---	-----

If yes, do you plan to submit a joint proposal?	Yes
--	-----

If yes, indicate the number of contacts in each case

Universities	3
Research Centres	3
Industry/private companies	0
Others	0

If Other, please specify:

Rate the importance of the following outcomes of the research training:

results of the research	Good
number of publications	Very good

development of research	Good
establishment of international collaborations	Good
transfer of knowledge/technology	Good
training of students/researchers	Good
further academic qualifications (PhD, habilitation etc.) for fellows	Good
Comments:	
Most of the training was "by doing research in the field" or by working in the lab work e.g. at the Tuberculosis immunological lab at the University of Cape Town or the lab of Mycobacteriology of ITM	

YOUR OPINION ABOUT THE MARIE CURIE ACTIONS:

Do you have any other comments or suggestions of how to improve the Marie Curie actions concerned?

The IRSES program is a very useful, particularly to strengthen or broaden already existing collaborations
The program need to be flexible because it is impossible from the start to foresee all the potential exchanges

Did you have previous knowledge of the Marie Curie actions? No

If yes, what sort of image do you think that the Marie Curie actions have among the scientific community in your research area?

Attachments

KDH TB 2013 Approval.pdf, KDH_TB_SEPSIS_Approval.pdf, Summary14 01 16.docx, IRSESmanagement meeting at UL.JPG, IRSES chronic disease workshop at UL.JPG, Dikhale chronic diseaes workshop group Polokwane Feb 2014.pptx, Ethics approval TB Diagnostic Study.pdf, CTAAC Ethics Approval.pdf, Did AIDS mortality decrease the number of lifetime sexual partners in Kenya- an ecological analysis.pdf, HIV Prevalence Correlates with High-Risk Sexual Behavior in Ethiopias Regions.pdf, Role of concurrency in generalised HIV epidemics lancet response to tanser - Copy.pdf, emmonsiaCID1.pdf, 50y emmonsia.pdf, Amendment Mediastinal Ultrasound NIH TB Study Cape Town September1 2013.pdf, Amendment Bedside Ultrasound NIH TB Study Cape Town April 2013.pdf

Date:

Person in charge of the project for the beneficiary(ies):