

**MSc: In One Health Molecular Biology - P. Wambura**


# MSc In One Health Molecular Biology



## Sokoine University of Agriculture

The MSc in One Health Molecular Biology course is offered at the Faculty of Veterinary Medicine of Sokoine University of Agriculture.

The course focuses on practical skills and a thorough understanding of how to apply molecular biology to One Health – an emerging discipline which promotes collaboration between the veterinary and medical professions.

Upon completion, researchers will be highly-skilled professionals able to:

- demonstrate knowledge and understanding of molecular biological techniques and their applications in the detection, identification and monitoring of infectious diseases of humans and animals
- demonstrate specialist knowledge for understanding how prophylactic or curative treatments or therapies for diseases may be developed through molecular research of host and pathogen genomes
- devise molecular biological approaches to find newer ways that will improve the health of humans, animals and our environment
- join international PhD programmes or secure employment in academic and research institutions

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### Course Structure

#### Year 1

- Research methods
- Statistics and data management
- Advanced molecular biology
- Immunology of infectious diseases
- One Health medicine
- Comparative genomics and bioinformatics
- Techniques in molecular and cellular biology
- Pathogen evolution and emerging infectious diseases

During the second semester students will receive mentoring to develop a research proposal, which must be presented to an academic panel for approval. The research proposals will be related, as far as possible, to One Health themes identified in the main SACIDS framework, and will address:

- Pathogen biology
- Host pathogen interactions
- Detection, identification and surveillance of disease
- Biodiversity or environmental determinants of One Health

#### Year 2

During the second year, the learning process will be pro-active and will include a literature review, intensive laboratory work, statistical analysis and writing a dissertation

### Partnerships

The curriculum has been developed in partnership with the UK's London School of Hygiene and Tropical Medicine, the Royal Veterinary College and others, which offer world-class postgraduate programmes in health and related disciplines.

Course modules are taught by academicians from SUA and Muhimbili University for Health and Allied Sciences (MUHAS) supported by internationally recognised staff from SACIDS Partner institutions and others.

Experienced scientists from SACIDS institutions will combine strong capacity in molecular biology and One Health to provide a unique blend of professional knowledge and skills for the graduates of this innovative MSc programme.

While the SACIDS financial support targets students from the SADC region, students from other parts of Africa or elsewhere who are able to meet their own cost are also eligible.

### Acknowledgement

The One Health Molecular Biology MSc course is supported by SACIDS through a grant from the Wellcome Trust under its African Institutions Initiative ([www.wellcome.ac.uk](http://www.wellcome.ac.uk))

Source: Author's original material as presented at the conference

**How to cite this course:** Wambura, P., 'MSc: In One Health Molecular Biology', *Onderstepoort Journal of Veterinary Research* 79(2), Art. #476, 1 pages. <http://dx.doi.org/10.4102/ojvr.v79i2.476>

**Note:** Proceedings of the Conference of the Southern African Centre for Infectious Disease Surveillance 'One Health' held at the National Institute for Communicable Diseases, Johannesburg, July 2011.

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