

# SOKOINE UNIVERSITY OF AGRICULTURE



## DIRECTORATE OF POSTGRADUATE STUDIES, RESEARCH, TECHNOLOGY TRANSFER AND CONSULTANCY

### CALL FOR PhD AND MSc. CANDIDATES FROM EASTERN AND SOUTHERN AFRICA

APOPO, in partnership with Sokoine University of Agriculture, Tanzania, is currently seeking several inquisitive and motivated Ph.D. and MSc. candidates.

APOPO is a non-profit organization that trains African giant pouched rats to save human lives by sniffing out dangerous materials. Since 1997, the rats have been trained in Tanzania to detect buried landmines in former conflict zones. Beginning in 2007, APOPO has also trained rats to detect tuberculosis (TB; the world's deadliest infectious disease), by sniffing human sputum samples from partner clinics in Tanzania, Mozambique, and soon Ethiopia. APOPO's Behavioral Research & Development sector in Tanzania conducts research to inform and optimize training procedures of these, and other, scent detection applications.

The advertised projects range from behavioral research to epidemiological studies addressing tuberculosis case finding with global impact. The successful candidates will be offered a full scholarship by the African Centre of Excellence for Innovative Rodent Pest Management and Biosensor Development of the Sokoine University of Agriculture (SUA) in Morogoro, Tanzania and enrolled in Postgraduate degree programs of SUA. Only nationals from Eastern and Southern African countries (Botswana, Burundi, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe) are eligible to apply. Otherwise, APOPO is an Equal Opportunity Employer and considers applicants for all positions without regard to race, color, religion, ancestry, gender identity, sex, marital status, physical or mental disability, military/veteran status or citizenship status.

For questions on the projects, please contact Ms. Lena Fiebig, APOPO's Head of TB, via [lena.fiebig@apopo.org](mailto:lena.fiebig@apopo.org). We look forward to receiving your CV and motivation letter to the following link: <http://bit.ly/2j297mt>. The PhD scholarships are 3 - 4 and one MSc position in areas of behavioral science and tuberculosis who will be hosted at the College of Veterinary Medicine and Biomedical Sciences, Sokoine University of Agriculture. Only shortlisted candidates will be contacted for an interview.

### PROJECT SPECIFIC DETAILS

#### I. PhD project: HeroRATS and early TB detection

This research project aims to determine the HeroRATs' ability to diagnose active TB earlier than conventional bacteriological diagnostic tools in a prospective patient cohort study. The successful candidate will work closely with APOPO's TB detection program in Morogoro and Dar es Salaam, Tanzania, while earning a PhD in a related field from the Sokoine University of Agriculture. Candidates should hold a university degree (MSc. or equivalent) in medicine, epidemiology, public health, or a related field. Ability to work in a team and independently, strong communication skills – amongst others with medical professionals and patients, and a thorough scientific working methodology are required. Responsibilities will include: developing research protocol and obtaining appropriate ethical clearance;

designing, conducting, and managing research-related activities; collecting and statistically analyzing appropriate research metrics; and scientific reporting of research results. Candidates with prior experience in TB, the health care system in East African countries, or epidemiological research are strongly encouraged to apply.

## **II. PhD project: HeroRATS' ability to detect TB from urine samples**

This research project aims to determine the HeroRATS' ability to detect TB from urine samples by means of chemical analyses of the specimen, training rats on urine samples and assessing diagnostic accuracy. The successful candidate will work closely with APOPO's training and research team at our headquarters in Morogoro, Tanzania, as well as the TB programs in Tanzania or Ethiopia, while earning a PhD in a related field from the Sokoine University of Agriculture. Candidates should hold a University degree (MSc or equivalent) in biology, biotechnology, clinical chemistry, psychology, epidemiology or a related field. Ability to work in a team and independently, keen attention to detail, innovative spirit, and a thorough scientific working methodology are required. Responsibilities will include: developing research protocol and obtaining appropriate ethical clearance; designing, conducting, and managing research-related activities; collecting and statistically analyzing appropriate research metrics; and scientific reporting of research results. Candidates with prior experience in biotechnological or behavioral research, and basic knowledge in medical diagnostics or in the disease TB are strongly encouraged to apply.

## **III. PhD project: Influence of early life odor experience on adulthood preference and perception of odors in rats**

This project will involve working with APOPO's rat breeding colony to present target odors to neonatal rat pups, objectively measuring rat preference and learning abilities as the rats mature, including rigid application of appropriate controls, and has the potential to span across multiple generations of rats to examine heritability characteristics. The successful candidate will work closely with APOPO's Training and Behavioral Research team while earning a PhD in a related field from the Sokoine University of Agriculture. Candidates should hold a University degree (MSc. or equivalent degree) in relevant life sciences field such as biology, zoology, or psychology. Responsibilities will include: developing research protocol and obtaining appropriate ethical clearance; designing, conducting, and managing research-related activities; collecting and statistically analyzing appropriate research metrics; and scientific reporting of research results. Candidates with prior experience conducting behavioral research with rodents, utilizing statistical software, and proficient written and verbal English and scientific writing skills are strongly encouraged to apply.

## **IV. PhD project: Role of nutrition in HeroRAT performance**

This nutrition research project will involve exploring different dietary options for the African giant pouched rats; the nutritional and caloric content of such options; how these options impact the rat's health, welfare, and motivation in detection tasks; if the rats demonstrate a preference for particular food types; and if these effects are influenced by the activity-level of the rat. The successful candidate will work closely with APOPO's Training and Behavioral Research team while earning a PhD in a related field from the Sokoine University of Agriculture. Candidates should hold a University degree (MSc or equivalent degree) in relevant life sciences field such as biology, zoology, psychology, ecology, or food science. Responsibilities will include: developing research protocol and obtaining appropriate ethical clearance; designing, conducting, and managing research-related activities; collecting and statistically analyzing appropriate research metrics; and scientific reporting of research results. Candidates with prior experience conducting behavioral research with rodents, background knowledge of food science or nutrition, experience utilizing statistical software, and proficient written and verbal English and scientific writing skills are strongly encouraged to apply.

## V. PhD project: Examining reproductive behavior of HeroRATs

This basic and applied research project is focused on gaining basic knowledge of the physiology and reproductive systems of the African giant pouched rat (*Cricetomys ansorgei*) while identifying factors to optimize reproductive success (e.g., nutrition, environment, mate choice, etc.). This project has the potential to also explore selective breeding characteristics, including heritability of certain behavioral traits, ethological fieldwork to examine the species in their natural environment, and development of a database to track ancestry. The successful candidate will work closely with APOPO's Training and Behavioral Research team while earning a PhD in a related field from the Sokoine University of Agriculture. Candidates should hold a University degree (MSc. or equivalent degree) in relevant life sciences field such as biology, zoology, psychology, ecology, or related veterinary subjects. Responsibilities will include: developing research protocol and obtaining appropriate ethical clearance; designing, conducting, and managing research-related activities; collecting and statistically analyzing appropriate research metrics; and scientific reporting of research results. Candidates with prior experience examining reproductive physiology and behavior in rodent, experience managing databases or large datasets, and proficient written and verbal English and scientific writing skills are strongly encouraged to apply.

## VI. MSc. project: Revisiting APOPO's TB data and develop analysis tools for the future

This research project aims to determine factors associated with diagnostic accuracy of the HeroRATs by revisiting existing data from APOPO's TB operations over ten years, as well as to develop data analysis and visualization tools for future applications. The successful candidate will work closely with APOPO's TB detection program in Morogoro and Dar es Salaam, Tanzania while earning a MSc. in a related field from the Sokoine University of Agriculture. Candidates should hold a university degree (BSc or equivalent) in biostatistics, computer science, biology, or a related quantitative science. Strong analytical skills, proven data management and analysis expertise, and great attention to the detail are required. Candidates with prior experience in handling biomedical data and keen interest in health research are strongly encouraged to apply.

## GENERAL MINIMUM ADMISSION QUALIFICATIONS

### 1. Master Degrees

- 1.1 A candidate shall either hold a relevant honours degree of Sokoine University of Agriculture or a qualification from an approved institution of higher learning, deemed to be equivalent to an honours degree of Sokoine University of Agriculture.
- 1.2 Candidates who hold unclassified degrees (e.g. BVM) should have a credit or a distinction in the subject of intended Master's degree. Candidates wishing to pursue the Master of Preventive Medicine degree shall be required to have at least credits in any five subjects of the BVM degree or its equivalent.
- 1.3 Candidates with pass degree may also be considered for admission if their undergraduate performance in the proposed subject of study was a B Grade average or above and they have satisfied the relevant Academic Units that they have exhibited academic potential through extensive field work, subsequent research experience and/or additional training.

### 1.2 PhD Degree Programmes

Applicants for PhD programmes should possess a honours Master degree in the **relevant field** from SUA or from recognized Universities. Applicants should submit a research concept note along with the application documents. PhD studies by Research only are tenable for two and half to four years and for 3 to 4 years for studies by Research and coursework .

## MODE OF APPLICATION

Application forms for admission can be requested from the undersigned or downloaded from our website: [http://www.suanet.ac.tz/phocadownload/postgraduate\\_application\\_forms2017.pdf](http://www.suanet.ac.tz/phocadownload/postgraduate_application_forms2017.pdf). Such dully-filled forms can be returned physically or mailed to the undersigned together with evidence of payment of Shs. 50,000/= or 20\$ for foreigners, as application fee. Payments should be made through **A/C NO. 0150076769860** CRDB Bank. Swift **Code No CORUTZTZXXX** Deadline for application for admissions and scholarship application is 1<sup>st</sup> October, 2017.

## FOR FURTHER INFORMATION, PLEASE CONTACT

THE DIRECTOR,  
DIRECTORATE OF POSTGRADUATE STUDIES, RESEARCH, TECHNOLOGY TRANSFER AND CONSULTANCY  
SOKOINE UNIVERSITY OF AGRICULTURE,  
P.O. BOX 3151, CHUO KIKUU,  
MOROGORO, TANZANIA.  
Telephone: +255 023-264 0013, Fax: +255 023-264 0013,  
E-mail: [drpgs@suanet.ac.tz](mailto:drpgs@suanet.ac.tz),  
Website: <http://www.suanet.ac.tz/drpgs/>