

Reproductive Biology Unit Centre

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Reproductive Biology Unit (RBU)

Reproductive Biology Unit is a research centre focusing on Biology of Reproduction. The unit is an informal research group of scientists at Chiromo Campus, College of Biological and Physical Sciences, University of Nairobi. RBU evolved from researches of individual scientists as early as 1972 but was consolidated into a functional unit on the provision of institutional strengthening funds by WHO-HRP from 1979 when it became one of WHO collaborating centres. After that further donations were received from IAEA, IDRC and NCST. RBU is within the Department of Vet Anatomy and Physiology and is one of the department's active research laboratories

Main lines of Research and Training Activities:

Research: Mammalian reproductive physiology:- Placental Biology; Infertility and parasites; Sperm maturation and epididymal physiology, Implantation and early pregnancy; Endocrine investigations and measurements; Natural products including medicinal plants and khat (miraa) and their possible implication and application in reproduction, Reproductive toxicology; Lifestyle factors and breast cancer in African women.

Training: MSc, PhD in Reproductive Biology.

Diploma for technology students

Major Scientific Results and Products:

Showed possible pathways of progesterone metabolism in primate and ruminant placentae. Elucidated the presence of an androgen binding protein in the cauda epididymis. Defined the effect of Heptachlor as an endocrine disruptor in reproduction. Developed a rabbit model for study of schistosomiasis. Effects of embelin. Effect of khat and its mode of action in reproduction.

Collaboration and Cooperation

Local collaboration: RBU has worked closely with Institute of Primate Research in Karen as well as Department of Obstetrics and Gynaecology, University of Nairobi Medical School.

Collaborations within Africa: RBU has cooperated with scientists from Tanzania, Uganda, South Africa, Zambia.

Other International cooperations: Further a field, RBU was for a long time a WHO collaborating centre participating in the HRP matched reagents program. Through this link with WHO, many postgraduate students were trained including the current head of RBU, Dr.J.A. Oduma. RBU also benefited from the collaboration in terms of equipment for RIA and EIA facilities, lamina flow cabinets, chromatography and electrophoresis equipment among others. Under WHO collaboration, RBU mandate was to establish animal models for use in reproductive biology research.

Currently, RBU is collaborating with researchers from Princeton University on long term behavioral and hormonal monitoring in baboons.

Natural Products Research Laboratory

The natural products started as a centre for scientific validation techniques for medicinal plants for veterinary and human use and pest control. WHO is currently pushing for vigorous research on medicinal plants as a means of providing or supplementing primary healthcare provision to the rural poor. The centre therefore undertakes researches that would prove or disprove the efficacy of such medicinal herbs using animal models or biological systems.

The centre also aims at developing botanical pesticides from local products as an alternative to conventional pesticides which are not only harmful to health but also to the environment.

The centre however still lacks basic modern equipment for extraction and characterization of the plant products, proper laboratory space to work in and infrastructure.

Collaborators: Chemistry Department, and Faculty of Pharmacy.

Dr Oduma profile cont.

Dr. J.A. Oduma is a highly trained Reproductive Physiology scholar having received her postgraduate training both locally at University of Nairobi and internationally at Cambridge University UK, St Andrews in Scotland and University of Giessen in Germany. Has been a visiting scholar/consultant at WHO headquarters in Geneva and Meharry Medical College in Nashville USA. The collaboration with Meharry is a study on the link between lifestyle factors and breast cancer in African women. She is currently the head of Reproductive Biology Unit- one of the research centres within the department through which several PhD and Master's students have been and are being trained on various aspects of reproduction. Dr Oduma has also worked as a regional coordinator with Premiere Healthcare Inc, a US based organization that provides services like monitoring and evaluation of clinical trials especially of ARVs in the management of HIV. Overall research interest is on environmental insults on reproduction and the development of appropriate animal model/s to study the effect of such insults. Dr Oduma is a member of the College of Biological and Physical Sciences Health and safety committee and is also a consultant/trainer on health and safety at the work place.

Reproductive Biology Team:

- [Dr. Kaluwa Catherine Kaingu](#) [7]
- [Dr.Oduma Jemimah Achieng](#) [8]

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