

ELECTRON MICROSCOPY UNIT

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WORK OF THE UNIT

The Electron Microscopy Unit was instrumental in assisting various interested persons to benefit from its facilities and services during the 2010/2011 academic year. Researchers on and off the Mona Campus, Graduate, Undergraduate and High School students received research results, training, exposure and understanding of Scanning and Transmission Electron microscopy, Optical Microscopy (OM) and Macrophotography (MP). The main investigations done and services provided are encapsulated in Table 1.



Table 1. Main investigations done during the 2010/2011 academic year.

Specimen	Technique	Institution
Ackee waste material	MP	Dept. of Life Sciences
Amphibian lung	OM	Dept. of Life Sciences
Automotive paint chips	OM	Basic Med. Sci (Biochemistry)
Bacteria	OM	Basic Med. Sci (Biochemistry)
Dust particles from air conditioning units	OM	Dept. of Chemistry/Petroleum Corporation of Jamaica
Fungi	OM	Dept. of Life Sciences (three different projects)
Helminths	OM	Dept. of Life Sciences
Human hair	OM	Basic Med Sci. (Biochemistry)
Mammalian spinal cord	OM	Dept. of Life Sciences
Ostracod samples	OM	Dept. of Geography & Geology

Powdered red mud	OM	Dept. of Physics
Rat Colon	OM	Basic Med. Sci (Pharmacology)
Rock sections	OM	Dept. of Geography & Geology (14 different students)
Sand samples	OM	Dept. of Geography & Geology
Solar cell	OM	Dept. of Physics
Starch suspension	OM	Dept. of Chemistry
Sugarcane rust	OM	Sugar Industry Research Institute
Synovial fluid	OM	Basic Med. Sci (Pharmacology)
Yam tissue	OM	Biotechnology Centre

Assistance in assessing, setting up and repairing various types of microscopes was rendered to departments of the UWI Mona Campus, a private Medical Laboratory and the Forensic Science Division of the Jamaica Constabulary Force.

Lectures and/or laboratory sessions were conducted in Electron Microscopy and OM in the undergraduate **Virology** course “BL38A” from the Department of Life Sciences and the graduate course **Research Methods** “C60M” from the Department of Chemistry. Dr. Wolf coordinated the graduate course **Research Methods for Biologists** “BL60E” from the Department of Life Sciences, which involved lectures and laboratories on microscopy and digital imaging. Contributions to the activities of Research Day included exhibits, demonstrations, posters and a tour of the Electron Microscopy Unit.

RESEARCH IN PROGRESS

Gamete structure and development in insects, using various microscopic techniques.

The collaboration with Zoologists from the University of Salzburg (Austria) on *Ciliates in tank bromeliads* continues and a new collaboration on *Jamaican Onychophora* (velvet worms) has been established with Zoologists at the University of Leipzig (Germany).

PUBLICATIONS

Refereed

- * Foissner, W., **Wolf, K.W.**, Yashchenko, V. & Stoeck, T. (2011). Description of *Leptopharynx bromelicola* n. sp. and characterization of the genus *Leptopharynx* Mermod, 1914 (Protista, Ciliophora). *J. Eukaryot. Microbiol.*, 58 (2):134-151.
- * Rheubert, J., Wilson, B.S., **Wolf, K.W.** & Gribbins, K.M. (2010). Ultrastructural study of spermiogenesis in the Jamaican Gray Anole *Anolis lineatopus* (Reptilia: Polychrotidae). *Acta Zool.*, 91 (4):484-494.

Non-Refereed

- * **Wolf, K.W.** & Munk, K. (2011). Fortpflanzung. In Munk, K. (Ed.), *Taschenlehrbuch Biologie: Zoologie* (pp. 273-297). Stuttgart: Georg Thieme Verlag.

With a staff complement of two, the per capita publication = 1.