UNILEVER CENTRE FOR ENVIRONMENTAL WATER QUALITY

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# Activity Update : March 2008

## Research projects and consultancies.

The UCEWQ has started 2008 with a flurry of activity. As current research projects and consultancies are finalised for the end of March, we are already eyeing the new projects we've been awarded for the next financial year by the WRC. Starting in April is a one year funded project which begins to look at the development of sediment quality guidelines for South Africa. In addition, there is another one year project which aims to identify the source of faecal contamination using chemical and microbiological biomarkers. We continue to work on the following research projects and consultancies:

- Investigating the responses of macroinvertebrates to EDCs and insecticide DDT
- Developing toxicity test methods for indigenous algae
- Investigating physiological responses to stress such as osmolality, respiration, growth and reproduction
- Investigating biochemical responses to stress such as acetylcholinesterase, lipid peroxidation, stress proteins and DNA strand damage
- Assessing the application of various measureable endpoints in the derivation of water quality guidelines
- Investigating microbials and diatoms as indicators of water quality changes
- Undertaking water quality monitoring programmes for industries such as SASOL and Richards Bay Minerals
- Assessing the impact of alien fish eradication using piscicides on invertebrates in the western Cape
- Integrated water quality management plan for Boksburg Lake and Wetland.

## New equipment.

In support of our new and ongoing projects we have recently acquired a range of new equipment:

- An Olympus research microscope equipped with a camera and a workstation running AnalySIS image analysis software. The microscope will be used whenever high-grade magnification is required and is currently used for diatom identification (for biomonitoring), general algal identification (for toxicological research) and for bacterial population analysis
- A laminar flow cabinet will provide a sterile environment for the isolation and maintenance of axenic algal cultures and minimize contamination of the algal cultures by other micro-organisms such as bacteria and fungi
- A refrigerated centrifuge for biochemical sample processing at temperatures close to 0ºC
- A Biotek microplate reader
- An incubator for culture preparation and growth
- An autoclave

## The workers.

There is one current MSc student, Bonga Zuma, and six PhD students, four of whom are based in Grahamstown (Alex Holland, Pearl Gola, Andrew Slaughter and Andrew Gordon) and the remaining two based in Tanzania (Devolent Mtui) and Uganda (Irene Naigaga).

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