

November 2017

### **Funding for a MScEng Study (Chemical Engineering): Survey of trash in pit latrines and urine diversion toilets**

The Pollution Research Group, School of Engineering (Howard College Campus, University of KwaZulu-Natal, Durban, South Africa), has secured funds from the Bill & Melinda Gates Foundation for a research and development project on faecal sludge management and the field testing of reinvented toilet prototypes. The presence of trash in pit latrine and urine diversion (UD) toilet waste is problematic for pit emptiers and downstream processing equipment. To understand the scale of the problem, the Pollution Research Group are recruiting a **Masters student** to undertake a study quantifying the volume and types that are found in pit latrines and UD vaults across eThekweni Municipality.

This will allow analysis of how trash volumes and types vary depending on the type of sanitation facilities, number of users and location.

This project will focus on:

- Undertaking a survey of solid waste disposal options in case study areas with pit latrines and/or UD toilets
- Analysing how trash volumes and types present in pit latrines and UD toilet vaults vary between case study areas across eThekweni Municipality
- Correlating trash volumes and types to context including but not limited to location (e.g. urban vs rural settings), sanitation facilities used and solid waste disposal options available
- Identifying potential drivers to reduce disposal of solid waste in pit latrines and UD toilets maintained by eThekweni Water and Sanitation

The expected outcome is to generate knowledge that will enable the relevant stakeholders to minimise or plan for solid waste disposal in pit latrines and UD toilets. This will support the commercialisation and scale-up of products and services being tested in the wider research project.

The **MScEng** research project will require a versatile and self-motivated candidate who ideally has knowledge of quantitative experimental design and carrying out household surveys. Experience in water and sanitation in developing countries will be an asset. The research will involve laboratory and field work in communities situated in informal settlements and rural areas, handling faecal sludge and fresh human excreta (faeces and urine). For health and safety reasons, the successful applicant will need to undergo the necessary inoculations.

The position will start from January 2018. A total bursary of **R 120 000** (over 1 to 2 years) will be provided. Payment is made on set deliverables being achieved. The project will also cover the cost of a computer, tuition fees and all research operating expenses for conducting field work.

The candidates should have an academic background in engineering, and be prepared to handle faecal material. In addition, for health and safety reasons, the successful applicant will need to undergo the necessary inoculations.

If you are interested in this position, please submit an electronic copy of your transcript, degree certificates and a CV with two referees and a covering letter explaining your motivation to **Ms Susan Mercer** ([mercerc@ukzn.ac.za](mailto:mercerc@ukzn.ac.za)). Only shortlisted applicants will be contacted and the deadline for applications is **31<sup>st</sup> December 2017**.

### **Pollution Research Group Discipline of Chemical Engineering, School of Engineering**

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