

## Post-Doctoral Position – Funded through the Bill & Melinda Gates Foundation Pollution Research Group, University of KwaZulu-Natal (Durban, South Africa)

### 1. Context

The importance and need for Faecal Sludge Management (FSM) has been recognised worldwide. According to the World Health Organization, approximately 2 billion people worldwide, particularly in the developing world, suffer from the lack of proper or any sanitation service. In 2011, the Bill & Melinda Gates Foundation (BMGF) have initiated the “Reinvent the Toilet Challenge” programme to encourage the development of transformative technologies in order to solve the inadequate sanitation problems in developing countries.

One major gap in developing appropriate and adequate faecal sludge treatment and monitoring is the ability to understand faecal sludge characteristics, its quantification and correlation to source population. One of the major concerns is how to sample, transport, store and analyse faecal sludge safely and at the same time there are no standard methods for sampling and analysis of faecal sludge. This complicates the transfer of knowledge and data between different regions and institutions which often make the results incomparable. Currently standard methods for water, wastewater and soil are being adapted but they are not necessarily the most suitable for faecal sludge, which differs in its characteristics and can be highly variable based on the local context and its typical heterogeneity.

The Pollution Research Group (PRG), located at the University of KwaZulu-Natal in Durban (South Africa) has been awarded a grant by the BMGF to establish common methods and procedures adapted to faecal sludge in the form of a book publication – “Standard Methods for Faecal Sludge Analysis”. This is a collaborative project between PRG as the lead organisation and other organisations with extensive experience in the field - Asian Institute of Technology (Thailand), IHE Delft (the Netherlands) and EAWAG/SANDEC (Switzerland). This publication will provide a basis for FSM characterisation guidelines and allow for more efficient use and comparison of the data generated in this sector.

### 2. Post-Doctoral Position

Under this project, the advertised position will be based at the Pollution Research Group in Durban, South Africa. The postdoctoral fellow will be involved in both field and laboratory based activities. Laboratory based activities may include coordinating with laboratory manager and technicians regarding validation of existing, and development of new, methods for faecal sludge analysis. Field testing may include coordination of sampling and validation of sampling methods and techniques.

The post-doctoral research fellow will be responsible for overseeing and coordinating 4 or 5 platform technologists employed under a separate grant from the BMGF – Engineering Testing Platform, looking

at the field testing of transformative technologies developed under the “Reinvent the Toilet Challenge Programme”. One of the main tasks will be to identify, collate and report on data and information generated from the work conducted by the platform technologists that is relevant to the FSM book.

### 3. Candidates profile

Candidates with a PhD in the relevant Engineering discipline (e.g. Chemical, Civil, Mechanical, Environmental Engineering, or equivalent) will be considered. Experience in the Water and Sanitation sector, particularly in developing countries, will be an asset. This position involves laboratory and field work in communities situated in informal settlements and rural areas, with handling of faecal sludge and fresh human excreta (faeces and urine).

### 4. Financial conditions

The successful candidate will be paid between R180 000 and 200 000 p.a. (tax free), depending on the experience of the candidate. Healthcare will be covered; SA visa fees and a return airplane ticket may be covered for overseas candidates. This is a contract position for 18 months.

### 5. Applying for the position

UKZN is an equal opportunity employer. Applications should be sent by email to Dr Konstantina Velkushanova ([Velkushanova@ukzn.ac.za](mailto:Velkushanova@ukzn.ac.za)), with cc to Ms Susan Mercer ([Mercer@ukzn.ac.za](mailto:Mercer@ukzn.ac.za)).

Applications should include:

- A detailed CV, with two referees
- A covering letter
- A list of publications

Deadline for applications: 20<sup>th</sup> June 2017. Start date is as soon as possible (negotiable).

### 6. Contact – enquiries

Dr Konstantina Velkushanova – Project leader, Pollution Research Group, UKZN, Durban:  
[Velkushanova@ukzn.ac.za](mailto:Velkushanova@ukzn.ac.za)

