



**Gabrielle (Gaby) Coppez** has the distinction of being the **first DBREV Scholar**.



Her 2011 MSc (Elec.Eng.) was completed at UCT in the Department of Electrical Engineering and entitled 'Optimal Sizing of Hybrid Renewable Energy Systems for Rural Electrification'.

While the thesis looked at problems and challenges facing electricity supply in rural areas of South Africa in particular, Gaby's object was the creation of a software tool for feasibility assessment that can be used to calculate the size and type of the Hybrid Renewable Energy System (HRES) that is best suited, in view of the energy demands calculated, for a particular rural area.

The tool analyses information input about the climate of the area, including temperature, wind speed and solar irradiance, and the load demand. The resulting HRES can include wind turbines, solar panels and batteries for storage of energy and are optimized for cost while keeping the reliability of the system high.

Following initial model development, rural areas which are currently electrified are used as case studies using their load and climatic data and designing and sizing HRES for these areas.

Gaby writes: "Receiving this scholarship from DBREV was momentous for me. As well as being a great financial help, it introduced me to many people who expanded my vision on rural electrification and what it means in South Africa. The mentors that I had during this time, Wendy Annecke and Dave Gale, were amazing, walking alongside me, asking good questions and being available when I needed them. It really made a big difference to have a group of people that I could call on and discuss things with, who asked hard questions and helped me to focus on, not only the academic side of things, but the real, practical implications of things too. That was really invaluable."

Gabrielle currently lives in Brussels, Belgium, and is working for Pall LifeSciences as an automation engineer, developing and supporting a range of controllers designed for bioreactors used in the Pharmaceutical industry for creating lower cost vaccines. She is still passionate about South Africa and the use of renewable energy and plans to return to South Africa in the coming years and, once again, become involved in this area of work.



**Riaan Opperman**, the **2012 DBREV Scholar**, completed his M Tech (Eng) at the Nelson Mandela Metropolitan University (NMMU).



His project involved the development of a Hydrokinetic Coil Pump (HCP) which is a pump powered by flowing water. A test rig was designed and built to identify and analyse factors that would optimise the use of a HCP in rural applications. The potential output of a HCP is sufficient to supply a small rural community with running water.

Riaan is currently working as a project engineer at eNtsa, a technology station at NMMU. One of the projects he is involved with is the design of a completely renewable energy powered LED street light with WiFi capabilities. A vertical axis wind turbine and a solar panel will provide the RE power supply to the system.

Riaan is thankful for the support provided by the DBREV Scholarship, as he would otherwise not have been able to complete his studies and consequently not have been able to accept his current position at eNtsa.



**Sean Kirsten**, the **2013 DBREV Scholar**, will complete his Masters in Business Science (Economics) in April 2014.



His research topic explores energy efficiency in low cost houses in the Western Cape, using the community of Mamre as a case study. This involves the compilation of a cost benefit analysis and survey report on the importance of ceilings in low cost houses looking at the health, economic and energy benefits. This report will hopefully be used by policy makers to advocate for future ceiling retrofit programmes.

For Sean, the DBREV Scholarship has enabled him to link up with academics and professionals in the energy field to gather information and share thoughts. This has been an invaluable experience in shaping, finalising and gathering momentum for his thesis. Having funding has removed financial pressure and allowed him to focus solely on his Masters and allowed him the freedom to work consistently and diligently.

**Kimenthrie Pillay** is the recipient of the **2014 DBREV Scholarship**.



Originally from Durban, she is now undertaking a M Phil in Energy Development Studies at UCT's Energy Research Centre.

Kimenthrie's interest in Renewable Energy and Energy Access began through her long time involvement in Greenpeace Africa's Renewable Energy initiatives. Her studies in Environmental Science and wide reading have exposed her to a broad range of issues which have helped to focus her interests on problems of climate change, globalisation and inequality of access to energy resources.

During her Masters studies, she hopes to gain further understanding, knowledge and skills that would help her to make a positive contribution towards addressing energy poverty, especially in rural Africa. Kim writes "I hope to make a difference to the situation by bridging the gap between good science and policy to exact well informed social and environmental decisions".