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UCT forges ahead on TB research

11 nominated for prizes

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UCT RESEARCHERS have been nominated for BHP Billiton Awards for their work in the fight against tuberculosis, from using satellite tracking to identify "super spreaders", to proving that clinics can diagnose the disease within as little as two hours.

Eleven researchers at the university have been nominated in various fields, three for their TB research.

One of the most promising innovations is the TB smart mask, a face mask capable of tracking patients' movement and their level of infectiousness.

The smart mask was created by Professor Keertan Dheda, head of pulmonology at UCT and Groote Schuur Hospital, and his colleague Dr Grant Theron from the same division.

The mask has a satellite tracker and cough sampler which allow doctors to monitor the movement of their patients and the information can be SMSed to the researchers to model disease spread.

Its purpose is to identify trends in the spread of TB, and identify "super spreaders".

"Super spreaders only make up about 20 percent of those infected with TB, but are responsible for about 80 percent of new infections. However, hospitals don't have the time or resources to test every potential super spreader, so a definite method was needed to identify, isolate and treat them," said Theron.

The sensors measure the level of infectious cells in the cough, how often the patient coughs, and even whether the patient regularly uses public transport. This helps determine whether they should be hospitalised and isolated for treatment.

Theron said infectious patients using public transport could be targeted to help halt TB infection.

"TB patients are supposed to wear masks in public to prevent the infection of others, but because of social stigma, this is ignored and the disease is allowed to spread further, especially if public transport is used regularly.

"Now we are seeing teenagers infected with drug-resistant TB, despite never having had the disease before. This is a result of person-to-person or primary contact transmission."

Theron also worked on another project with Dheda to prove that minimally trained health-care workers were capable of using the GeneXpert to diagnose TB within two hours.

The GeneXpert, developed by a US company, amplifies TB DNA, so making it easier to identify. Theron said: "...it can be deployed in TB hotspots like prisons, mines or areas where the disease is concentrated."

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