

Three wins for UCT academics at NSTF-BHP Billiton Awards

For their contributions to the fields of science, engineering, technology and innovation in South Africa, three professors from the University of Cape Town were honoured at the 16th NSTF-BHP Billiton Awards.

The winners were announced at a gala dinner on 3 July 2014, while eight other UCT academics were among the 56 finalists for the prestigious awards.



Emeritus Professor Eric Bateman, Director and Founder of the UCT Lung Institute, Department of Medicine, received the accolade for an individual who has made an excellent contribution to science, engineering and technology over a lifetime.

Professor Keertan Dheda, Head of the Division of Pulmonology, Department of Medicine, was recognised for his exceptional support of the fields of science, engineering and technology through research and its outputs over the last five to ten years.

The third award went to Associate Professor Arnaud Malan at UCT's Department of Mechanical Engineering. The award recognised an individual or a team for an outstanding contribution to science, engineering and technology through research leading to innovation in a corporate organisation or institution. He is primarily responsible for developing Elemental software, which is described as a giant leap for technology.

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Professor Danie Visser, Deputy Vice-Chancellor for Research at UCT, says these awards underscore that UCT's research is in good shape.

"On the one hand, Professor Bateman's award celebrates a scientist that has spent a lifetime promoting lung health and who is still at it at 66 as an A-rated scientist and Director of the UCT Lung Institute. On the other hand, Professor Dheda's award recognises the vanguard of the next generation, by acknowledging his influential work in understanding the transmission and control of TB.

"The award to Professor Malan, as leader of the team that developed the Elemental software, also celebrates a brilliant young researcher and underlines the importance of innovation," says Professor Visser.

The NSTF-BHP Billiton Awards, a flagship project of the NSTF, are endorsed by the Department of Science and Technology.

Professor Bateman has been a leader on asthma research worldwide, as well as in improving methods of delivering primary care in low-middle-income countries. He has contributed to the understanding and treatment of asthma and related diseases in South Africa and globally. He has also been playing a significant role in developing methods for assisting and empowering health workers, predominantly nurses, in primary care facilities to deliver quality care for common chronic and infectious diseases.

Known for his seminal contributions to understanding the pathogenesis, diagnosis, management and control of drug-resistant TB in South Africa, Professor Dheda, is also a recipient of other awards. He was internationally and nationally recognised through the 2010 International Union Against Tuberculosis and Lung Disease Scientific Award, and the South African MRI Gold Award in 2013. He recently led a team that published their findings in *The Lancet*, showing that placing new rapid TB diagnostic technology (Gene Xpert) in a clinic was feasible when testing is performed by a nurse. This approach has led to

rapid diagnosis of drug-resistant TB, with more patients being placed on treatment.

Elemental, a next generation Computational Fluid Dynamics Software, is led by Associate Professor Malan. The software enables scientists to study the dynamics of fluid flow, and offer accurate predictions and unprecedented insights. A sophisticated analysis technique, it offers multiple predictions with diverse applications from aircraft design to heart valves

Airbus found Elemental "scientifically innovative while outperforming competing codes by a significant margin". Airbus Defence and Space, a top European space technology company, shares the sentiment. Elemental has attracted research contracts worth over R6m from Europe and resulted in a new UCT spin-out company.

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