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**veski**

**veski  
innovation  
fellow**

**Professor  
Kenneth Crozier**



#### research project

**Advancing the frontiers  
of imaging through  
optical micro- and nanostructures**

#### project summary

Optical technologies play a key role in everyday Australian life from the lasers and optical fibres required for high-speed Internet, to the image sensors for digital photography, to the microscopes in research institutes across the country, and the lasers used for surgery.

Professor Kenneth Crozier will deliver an integrated program of research, education and commercialisation that will also involve training the next generation of Australian optical scientists.

Through this project he will develop optical technologies based on nanoscience that could enable digital cameras to 'see' more than colour, individual viruses and molecules to be held in place and observed, and large area biological samples to be imaged at high resolution with unprecedented speed.

Not only will the project benefit Australian society, it will also give industry access to cutting-edge breakthroughs in optical science.

With a combination of support from the **veski** innovation fellowship and the University of Melbourne, Professor Crozier will recruit a team of PhD students and research fellows, which will further enhance Victoria's knowledge economy.

Professor Crozier will also form close collaborations with industry. The goal will be for the technology developed in the program to be commercialised and deliver more benefits for Victorians.

Kenneth firmly believes that communicating the excitement and societal relevance of his work to the general public will have a beneficial impact upon fostering the next generation of innovators in Victoria.

#### personal history

After an impressive start in Victoria, Professor Kenneth Crozier has gained an international reputation as one of the leading researchers in micro- and nano-optical structures and their applications in imaging, sensing and lab-on-a-chip.

Professor Crozier brings his expertise and track record developed through his time at Stanford University as a postgraduate student and postdoctoral fellow, and through his time at Harvard University as a faculty member to the State of Victoria.

Kenneth joined Harvard as an assistant professor of electrical engineering in 2004. He was promoted in 2008 to John Loeb Associate Professor of the Natural Sciences, a distinguished position. His team has included seven PhD students, 13 postdoctoral research fellows and five undergraduates.

During this time, Kenneth led a group of electrical engineers, applied physicists and chemists working on a range of research problems in micro- and nano-optics. He has been an Advisor to PhD students and postdocs who have gone on to faculty appointments, industry positions and postdoctoral fellowships in leading laboratories.

## Professor Kenneth Crozier

“Australian society will benefit in two ways from this research. Firstly, with applications in new types of digital cameras and high-speed microscopes. Secondly, we’re building the human infrastructure required for future advances in this field in Australia.”

### other innovation fellowship recipients

### background information

Kenneth returns to the University of Melbourne where he completed his undergraduate degrees in Electrical Engineering and Physics. He was awarded the L.R. East Medal by the Institute of Engineers, Australia for graduating as top student in engineering at the university.

Kenneth has an outstanding publication track record of 80 journal publications and his research has attracted an impressive record of 3000+ citations since 2009<sup>1</sup>. He is also committed to collaborations and commercialisation and has 12 provisional and issued patents.

<sup>1</sup> Data sourced from Google Scholar

Professor Andrew Holmes AM FRS FAA FTSE  
 Professor Marcus Pandy  
 Dr Gareth Forde  
 Dr Alyssa Barry  
 Professor Michael Cowley FTSE  
 Professor Sarah Hosking  
 Professor Ygal Haupt  
 Dr Ross Dickins  
 Dr Mark Shackleton  
 Professor Edwin van Leeuwen FTSE  
 Dr Matthew Call  
 Associate Professor Christopher McNeill  
 Dr Seth Masters  
 Associate Professor Tiffany Walsh  
 Professor Cameron Simmons  
 Dr Luke Connal  
 Professor Colette McKay  
 Dr Ethan Goddard-Borger  
 Dr Mark Dawson

In 2014 **veski** celebrates 10 years of inspiring innovation.

**veski** delivers a range of Victoria's most prestigious science and innovation programs including the **veski** innovation fellowships which bring world-leading scientists and researchers back to Victoria.

Since 2004, 20 **veski** innovation fellows have returned to Victoria with funding worth more than \$4 million delivering a return on investment in excess of \$45 million. Their research covers semiconductors, epigenetics, audiology, optics and nanotechnology, enzymes, dengue, malaria, cancer, inflammatory diseases, musculoskeletal health, geothermal energy and obesity.

**veski** is supported by the State Government of Victoria.

### further information

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