



Australian Government
Australian Research Council

Laureate Fellowship

2014 Australian Laureate Recipient



PROFESSOR ALAN COOPER

Using ancient microbiomes and genomes to reconstruct human history
(FL140100260)

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| Current Organisation | The University of Adelaide |
| Administering Organisation | The University of Adelaide |
| Primary research field | Palaeoecology |
| Priority area | Promoting population health and wellbeing |

Fellowship project summary:

This project aims to generate unique insights into the processes and history that produced the current distribution of modern humans and the bacteria we carry with us (our microbiome). The project will use combined signals of bacterial, genomic and climate data to reconstruct the impacts of migrations, changes in diet, environment, and health in different parts of the world. A key aspect will be the creation of a program to map the genetic history of indigenous Australia, and the impacts of colonisation on indigenous people around the world. Research advances will be transferred to Early Career Researchers through an innovative program of workshops, and the resulting data will be used to create a new format for Australian genetic databases.

About Professor Cooper

Professor Alan Cooper specialises in using ancient genetic material to record and study evolutionary processes, especially those associated with environmental change and human evolution.

Professor Cooper has been an Australian Research Council Federation Fellow (awarded in 2004) and Future Fellow (2010) during which time he has specialized in the genetic analysis of evolution, biodiversity, climate change, paleoecology and microbiomes. He built his first research group as a postdoctoral student at the University of Oxford where he also established his first large research facility, the Henry Wellcome Ancient Biomolecules Centre (HWABC). He directed the HWABC as the Professor of Ancient Biomolecules from 2001-2005 during which time it published a series of ground-breaking studies in ancient population genetics and evolutionary research. He moved to the University of Adelaide in 2005 to establish the Australian Centre for Ancient DNA (ACAD), the first largescale ancient DNA research centre in the Southern Hemisphere. This international standard research facility provides the specialist equipment and ultra-sterile working environment required for the study of minute traces of preserved genetic material from hundreds to tens of thousands of years.

Recent research highlights include building a genetic history of Europe, the impacts of Ice Age climate changes, and the discovery that calcified bacteria on the teeth of ancient skeletons record the history of human disease, diet and migration. The search for ancient specimens takes Professor Cooper around the world, from the Arctic to Patagonia. He has just returned from excavating Ice Age mammals in the Yukon permafrost and a large Wyoming cave, and ACAD is using social media coverage of fieldwork such as this to encourage school student interest in scientific research.

Find out more about Professor Alan Cooper and his research by visiting [The University of Adelaide](#) and [ACAD](#) websites.

For more information on the *Australian Laureate Fellowships* scheme, visit the [ARC website](#).