

Genomics research to benefit wine and biodiversity

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Two new research projects at the University of Adelaide will use leading genomic expertise and technologies to benefit the wine industry and biodiversity conservation.

The two projects have won funding from the Australian Genome Research Facility (AGRF), enabling them to access AGRF's genotyping and genome sequencing services.

Researchers aim to use the latest genomics technologies to provide the first definitive scientific explanation of [wine](#) terroir—the unique 'sense of place' captured in the world's leading wines.

Led by Dr Cassandra Collins and Dr Carlos Rodriguez Lopez in the School of Agriculture, Food and Wine, the researchers will investigate the interplay of genetics, plant physiology, environment (including climate, soil, topography and vineyard management) and wine quality.

Their long-term aim is to provide information that can be used by the industry to maximise the expression of terroir in Australian wines, helping to secure the future of the Australian wine industry.

In the second project, researchers will reconstruct crucial aspects of Australia's recent environmental history using the genomes of four iconic species to investigate why there is widespread, and potentially disastrous, lack of genetic diversity in Australia's native animals.

Led by Professor Alan Cooper, Australian Laureate Fellow and Director of the Australian Centre for Ancient DNA, the researchers will complete the first genomic reconstructions of the dingo, emu, red kangaroo and thylacine to generate evolutionary and population histories unavailable from the fossil record or other means.

This information will help us to understand the vulnerability of current biodiversity to future threats.

The project will also involve a training program in bioinformatics to help build the next generation of researchers to operate at the interface of informatics and evolutionary biology.

"The grants represent the first step towards establishing a proposed South Australian-based genomics centre to accommodate a national hub of agriculture and environment research," says Dr John Stephen, AGRF National Operations Manager and Adelaide Node Manager.

University of Adelaide Deputy Vice-Chancellor (Research) Professor Mike Brooks said the projects were tremendous examples of applying cutting-edge genomics research to challenges in agriculture and environmental biodiversity.

Provided by University of Adelaide

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