



The Genius of DNA

How DNA Research has Impacted Forensic Science,
Wildlife Conservation, Health and Genealogy.

SEMINAR 2019

Program

10.00 – 10.15 Opening by Emeritus Professor Alan Robson AO CitWA – Patron U3A (UWA)

10.15 – 11.00 Forensic Biology and DNA Profiling

Dr Gavin Turbett, Head of Department, Forensic Biology, PathWest Laboratory Medicine WA

This presentation will provide an overview of the technology associated with modern forensic DNA profiling as used in criminal investigations. It will describe where forensic scientists look to recover DNA from crime scene exhibits and will discuss the critical role of forensic DNA databases. It will also explore some of the myths surrounding forensic science

11: 00 – 11.45 Non-Human DNA in Forensic Science

Dr Shane Tobe, Senior Lecturer in Forensic Science, Medical, Molecular and Forensic Sciences, Murdoch University

This presentation will provide an overview of the ways in which animal DNA can be used in forensic science. It will describe the use of non-human DNA in criminal investigations as well as how we are using forensic science to help conserve some of the world's most endangered species.

11.45 – 12.30 Establishing Personalised Nutrition and Health: The Metabolic Phenotyping Approach

Dr Ruey-Leng Loo, Premier's Early to Mid-Career Fellow, Health Research Centre, Murdoch University

This presentation will provide an overview of metabolic phenotyping (fingerprinting) technologies to capture a large number of signatures in biological specimens such as blood and urine. Applications, particularly in the area of precision nutrition and precision health will be described. Some of the research work to be undertaken at the Australian National Phenome Centre (ANPC), the nation's first phenome hub, will also be addressed.

12:30 – 13:30 LUNCH

13:30 – 14.15 The Search for Your Ancestry

Christine Harris, Vice President and Volunteer IT Manager at FamilyHistoryWA

This presentation will provide an overview of the history of genealogy from the days of microfiche to today's genetic genealogy. Computers and the increasing accessibility of old records has meant that the number of people chasing their ancestors has grown to astonishing numbers. From the microfiche of the 1960 through the introduction of the home computer in the late 70s; from the development of genealogical software to the introduction of online Family Trees, genealogy has reacted to the changes in technology. Genetic Genealogy is the latest development in that history of progress.

14.15 – 15.15 The Saturday Night Strangler

Emeritus Professor Bob Mead, Medical, Molecular and Forensic Sciences, Murdoch University

This presentation documents the remarkable resolution of a case involving the sequential murders of three young women who left a nightclub in South Wales in 1973. The perpetrator was identified after his death, some 30 years later, due to advances in DNA profiling, the use of family-related DNA, the advent of DNA databases, the use of psychological profiling and the adoption of modern police-based investigative tools. The presentation is designed to illustrate the application of techniques discussed in earlier presentations. It also features an interview with Professor Sir Alec Jeffreys who initiated the technique of DNA "fingerprinting"

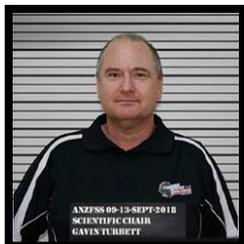
15:15 Closing Remarks – Denise Beer – President of U3A (UWA)

SPEAKER PROFILES



Emeritus Professor Alan Robson, AO CitWA - Patron of U3A (UWA)

Emeritus Professor Alan Robson retired as Vice Chancellor of The University of Western Australia in 2012. During his career he held many positions including: Deputy Vice Chancellor, Dean of the Faculty of Agriculture, Head of the School of Agriculture and Professor of Agriculture. Currently Professor Robson is Chair of the Western Australian Museum Board of Trustees.



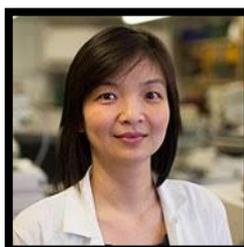
Dr Gavin Turbett, Head of Department, Forensic Biology, PathWest Laboratory Medicine WA

Dr Turbett is the Head of the Department of Forensic Biology at PathWest. He has published 34 scientific papers and is an Adjunct Professor at Murdoch University and an Adjunct Associate Professor at Curtin University and the University of Western Australia. He lectures regularly to the WA Police, the judiciary, university students and others about forensic biology and DNA profiling. In 2011, he became a Founding Fellow of the Faculty of Science, Royal College of Pathologists of Australasia.



Dr Shane Tobe, Senior Lecturer in Forensic Science, Medical, Molecular and Forensic Sciences, Murdoch University

Dr Tobe completed his B.Sc. Honours in Forensic Biology at Laurentian University in Canada. He continued his studies at the University of Strathclyde, in Glasgow, Scotland, obtaining an M.Sc. and Ph.D. His research focused on taphonomy, presumptive testing and species identification. Shane has published over 50 peer reviewed papers and conference abstracts, and co-authored a text book on DNA in Wildlife Forensic Science.



Dr Ruey-Leng Loo, Premier's Early to Mid-Career Fellow, Health Research Centre, Murdoch University

Dr Ruey-Leng moved to Perth in 2019 from the University of Kent where she worked as a Senior Lecturer. Her research focuses on transforming biological, spectroscopic and patient data into useful information that can improve healthcare.



Christine Harris, Vice President and Volunteer IT Manager at FamilyHistoryWA

Christine has been pursuing her interest in family history for more than thirty years. With an enduring passion for technology, she was an early participant when Ancestry.com first introduced DNA testing and is now a charter member of the DNA Special Interest Group at FHWA.



Emeritus Professor Bob Mead, Medical, Molecular and Forensic Sciences, Murdoch University

Dr Mead is a biochemist and molecular toxicologist. His teaching at Murdoch University focuses on the application of biochemistry and toxicology to medicine and forensics within a problem based learning framework. He is a passionate teacher and has drawn upon his experience in the hospital system and from his regular preparation of expert testimony reports to write two case-oriented textbooks. In 2004 he established the Forensic Biology and Toxicology degree at Murdoch University.