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Establishing Australia's first Body Farm - The Australian Facility for Taphonomic Experimental Research (AFTER)

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Taphonomy involves the study of human and animal remains from the time of death to the time of discovery. The aim of research in this field is to better understand the physical, chemical, and biological processes of soft and hard tissue decomposition [1]. The process of decomposition is inherently impacted by the surrounding environment, including climatic conditions, geological formation and the ecological community (Figure 1). At present, the only facilities that conduct human decomposition research are based in the USA (colloquially known as 'body farms') however their data cannot always be extrapolated to Australia due to our distinctly different environment.



This presentation will discuss the development of Australia's first 'body farm' that uses donated cadavers to study the process of decomposition in a terrestrial environment. The facility involves collaboration between universities, police agencies, and forensic science services in Australia and New Zealand. Research carried out at AFTER encompasses a range of disciplines including soil science, geology, geophysics, chemistry, molecular biology, microbiology, entomology, anthropology, archaeology, and palaeontology.

Figure 1: Animal remains in a terrestrial environment

AFTER opened in 2016 as a national research and training centre that will revolutionize the way in which criminal and death investigations are conducted in Australia. A greater understanding of the decomposition process can assist police and forensic investigators to search for [2], locate [3], recover, and identify victim remains, as well as understand their taphonomy. Such research is particularly important for investigations involving missing persons, and/or victims of homicide, genocide, or mass disaster.

References:

[1] Forbes, S.L. and Carter, D.O. Processes and mechanisms of death and decomposition of vertebrate carrion, in M.E. Benbow, J. K. Tomberlin and A.M. Tarone (eds.) *Carrion Ecology, Evolution and Their Applications*, Taylor and Francis, Surrey, UK, 2015. pp. 13-30

[2] Ruffell, A., Pringle, J.K., and Forbes, S.L. Search protocols for hidden forensic objects beneath floors and within walls. *Forensic Science International*. 237: 137-145, 2014.

[3] Forbes, S.L., Hulsman, S., and Dolderman, M. Locating buried canine remains using ground penetrating radar. *Canadian Society of Forensic Science Journal*. 46: 51-58, 2013.

