

## Professor Melinda Fitzgerald

### BSc (Hons), PhD

**Research specialisation:** Neurotrauma: understanding pathology, testing therapies

**Experience:** Recently appointed Professor of Neurotrauma, jointly with Curtin University and the Perron Institute, located at the new Sarich Neuroscience Research Institute in Western Australia. Prof Fitzgerald has 14 years' post-doctoral experience (note parental career disruption 1998-2005) and is an independent researcher leading a team of 12 researchers and post-graduate students. Australian representative for the Asia Pacific Regional Committee for IBRO, serves on the international scientific committees for BIOMATSEN2016 and ICNT2016. Currently Held Grants/Projects total \$2 million; she is CIA for all of these; total funding awarded for her career is \$6.5 million, \$3.9 million as CIA. Currently holds an NMHRC Career Development Fellowship, a CIA Project Grant and has previously held two NHMRC Project grants as CIA. A patent entitled 'Multifunctional Nanoparticles' reached international PCT stage and was developed by a biotechnology company. Chairperson and Convener of the annual Symposium of Western Australian Neuroscience (SWAN), and the UWA neuroscience seminar series. Member of the UWA Faculty of Science Planning Task Force addressing Grantsmanship, Mentoring and Expectations, and coordinates dissemination of collated information regarding all seminars in science and health in Perth. Reviews for numerous scientific journals including EJN, IOVS, Neurochem. Int., international funding bodies including fight for Sight UK, MS Australia and the Alzheimer's Australia Dementia Research Foundation and serves on NHMRC and MS Australia Grant Review Panels. Instituted a UWA Faculty of Science gender equity group and coordinates the UWA Faculty of Science mentoring program for PhD students and early career researchers, which extends across Institutional boundaries. Member of the Perkins Institute EMCR Mentoring Committee and regularly speaks at events regarding gender equity in science.



**Research overview:** Prof Fitzgerald's research is focused around understanding and preventing the loss of function that occurs following neurotrauma. She uses innovative analytical techniques to demonstrate changes to key biochemical, cellular and structural components of nerves following injury and is assessing treatment strategies including nanotechnologies and combinatorial pharmacotherapeutics. Her drive to translate her research findings to the clinic is evidenced by her current collaborative clinical trial assessing biomarkers and MRI for prediction of post-concussion syndrome.

**Postgraduate supervision:** In the past 5 years A/Prof Fitzgerald has supervised 20 Honours students or equivalent, 10 PhD students (5 completions), 6 post-doctoral researchers and gives regular guest lectures.

**Research publications:** In her 14 post-doctoral years A/Prof Fitzgerald has published 66 papers. Handling Editor for the *Journal of Neurochemistry*, an Editorial Board Member for *Neural Regeneration Research*, *Frontiers Journals* and an Associate editor for *PeerJ*. Example publications:

- Halstrom, A., MacDonald, E., Neil, C., Arendts, G., Fatovich, D. and Fitzgerald, M. (2017) Elevation of Oxidative Stress Indicators in Plasma Following Traumatic Brain Injury. *J Clin Neurosci*. 35: 104.
- Lozić, I., Hartz, R.V., Bartlett, C.A., Shaw, J.A., Archer, M, Naidu, P.S.R., Smith, N.M., Dunlop, S.A., Swaminathan Iyer, K., Kilburn, M.R. and Fitzgerald, M. Enabling Dual Targeting of Polymeric Nanoparticles to Macrophages and Astrocytes for Treatment of Neurotrauma. (2016) *Biomaterials* 75: 58.
- O'Hare Doig, R.L., Bartlett, C.A., Maghazal, G.J., Lam, M., Archer, M., Stocker, R., Fitzgerald, M. Reactive species and oxidative stress in optic nerve vulnerable to secondary degeneration (2014) *Exp Neurol* 261: 136.
- \*Savigni, D.L.\*, O'Hare Doig, R.L.\*, Szymanski, C.R., Bartlett, C.A., Lozić, I., Smith, N.M., Fitzgerald, M. (2013) Three Ca<sup>2+</sup> channel inhibitors in combination reduce chronic secondary degeneration following neurotrauma *Neuropharmacology*, 75: 380.
34. Payne S.C, Bartlett, C.A, Harvey, A.R, Dunlop, S.A, and Fitzgerald, M. (2012) Myelin sheath decompaction, axon swelling and functional loss during chronic secondary degeneration in rat optic nerve *IOVS* 138(5):865



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