The Seminar: The mature CNS has limited intrinsic capacity for repair after injury. I will summarize results from the lab over the past 10 years that have quantified the effects of various pharmacotherapy and gene therapy regimes on the survival and regenerative capacity of injured adult retinal ganglion cells. The injury models mostly involve optic nerve crush or transection followed by transplantation of autologous peripheral nerve onto the cut nerve. Possible cellular mechanisms involved in the regenerative process are considered. I will also describe the long-term impact of rAAV-mediated expression of CNTF or BDNF on the dendritic morphology of adult retinal ganglion cells, and discuss new data on the effect of sustained production of these trophic factors on endogenous gene expression in retinal tissue.

The Speaker: Alan Harvey was born in London and educated at the University of Cambridge before undertaking a PhD at the Australian National University in Canberra. After postdoctoral work in the USA and at Flinders University in South Australia, he moved to The University of Western Australia in 1984, where he is now Winthrop Professor in the School of Anatomy, Physiology and Human Biology. His main experimental laboratory interests are in neural development, neurotrauma and neurotherapy, the research primarily focused on the CNS, with an emphasis on the visual system. He is testing a range of approaches including combinations of gene therapy, pharmacotherapy and cell/tissue transplantation in an effort to enhance neuronal survival and axon regeneration after adult CNS injury. Professor Harvey retains an interest in developmental neurobiology, currently using gene expression and cell culture studies to discover how developing neurons switch from a target-independent to target-dependent state as their axons grow into appropriate target sites, and identifying maturational changes in neuronal growth states. He has published about 200 papers/book chapters. He currently receives funding from the National Health and Medical Research Council and the Australian Research Council. He serves on numerous Editorial Boards of international journals and he is a Board member/Director of the Neurological Council of WA, and The Western Australian Institute for Neuroscience (WANRI). He is one of 8 international faculty that is named in The National 111 Project (5 years) entitled “CNS Injury and Repair” that has been awarded to Jinan University in Guangzhou, PR China.