MACQUARIE University

Professor Lorne Cummings

ASSOCIATE DEAN HIGHER DEGREE RESEARCH
FACULTY OF BUSINESS & ECONOMICS

Lorne is a Professor of Accounting and is currently Associate Dean for Higher Degree Research (HDR) in the Faculty of Business and Economics at Macquarie University. In his role as Associate Dean, he oversees the doctoral cohort within the Faculty as is responsible for developing, documenting and implementing strategies to improve its higher degree research profile, reputation and performance (enrolments, supervision, and completions).

Further responsibilities include developing linkages with external parties including potential employers and overseas higher education institutions, program marketing, as well as the technical development of new research programs within the University. He currently serves on the University's Higher Degree Research Committee and is a former Head of Department, past Deputy Chair of the University's Human Ethics Committee, and has been both postgraduate and undergraduate program Director for the Department.

Lorne teaches in International and Financial Accounting and has researched across a wide spectrum of the financial accounting field, including Sustainability Accounting and Reporting, International Financial Reporting Standards, Not-for-Profit accounting, and Accounting History. He has led a major competitive grant on developing training materials on energy efficiency for accountants, funded by the NSW Office of Environment and Heritage ($240,000), and has also been involved in grants on assessing the draft Australian Water Accounting Standard for the Australian Bureau of Meteorology ($28,000) and not-for-profit sector accountability ($7,000). He has supervised a number of PhD students to successful completion in the area of sustainability and international accounting.

Lorne has published in leading International and Australian academic and professional journals including *Advances in Accounting, European Accounting Review, Financial Accountability and Management, Accounting, Auditing and Accountability Journal*, *The International Journal of Auditing*, *Accounting History*, the *Asian Review of Accounting* and the *Journal of Business Ethics*.

He is involved in the development and delivery of professional development programs for CPA Australia.

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MACQUARIE University

Professor Lucy Taksa

ASSOCIATE DEAN RESEARCH
FACULTY OF BUSINESS & ECONOMICS

Professor Lucy Taksa has been Associate Dean of Research in the Faculty of Business and Economics at Macquarie University since January 2015 after having been Head of the Department of Marketing and Management in the same Faculty since August 2009. Previously worked at the University of NSW for 18 years where she was Head, School of Organisation and Management, Director of the Industrial Relations Research Centre and Associate Dean Education.

Lucy is currently responsible for the oversight of the Faculty Research Unit and implementation of research strategy. She chairs the Faculty Research Committee, oversees the Faculty's Ethics sub-committee, implements a range of initiatives to enhance research performance and promotes research mentoring, cross-disciplinary and collaborative problem focused and solution focused research among staff at Macquarie and other universities around the world as well as with external industry partners. She is a member of the University's Research Management Committee and of the University Senate, the Australian Research Council College of Experts and an independent board member of Settlement Services International Ltd., a leading community-based not-for-profit organisation providing a range of services in the areas of migrant and refugee settlement, housing, disability support and employment services in NSW.

Lucy supervises PhD students in organisational and management studies, cross- and inter-cultural relations in organisations, diversity management and leadership. She has led numerous Australian Research Council funded projects focusing on management, work, gender and cultural diversity in the rail industry, industrial heritage and multiculturalism (total: $642K) and has collaborated with a range of colleagues and external organisations on research projects: on outsourcing and contracting chains in the aviation sector ($30k), the impact of population and residential trends on residential housing markets ($60,444), the impact of lympheodema on employment and economic outcomes ($97,934) and historical and demographic trends in NSW education ($99412).

Lucy has published on: management, work and the history of occupational safety; gendered workplace cultures in transport and finance; migrant employment, Equal Employment Opportunities and Diversity Management, and management education in leading journals such as: *Labour History*, *Australian Historical Studies*, *Historical Archaeology*, *Historic Environment*, *Journal of Industrial Relations*, *Economic and Industrial Democracy*, *Economic and Labour Relations Review*, *Studies in Higher Education*, *Equality, Diversity and Inclusion*, *International Journal of Work Organisation and Emotion*, as well as in major edited books and Oxford Handbooks.

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Associate Professor Judi Homewood

ASSOCIATE DEAN HIGHER DEGREE RESEARCH
FACULTY OF HUMAN SCIENCES

Associate Professor Judi Homewood completed her PhD from Macquarie University, as well as a Masters degree in Public Health at the University of Sydney. She is currently the Associate Dean, Higher Degree Research in the Faculty of Human Sciences at Macquarie University. Prior to taking this role in 2011 she was the Associate Dean, Learning and Teaching in the Faculty of Human Sciences. Judi also works in the Department of Psychology in a teaching and research role.

Research Interests

My research interests span several areas of health psychology including eating disorders, the biological underpinnings of addiction and barriers to organ donation.

Selected Publications

Knopman, A, Wong, C, Stevenson, R, Homewood, J, Mohamed, A, Somerville, E, Eberl, S, Wen, L, Fulham, M, and Bleasel, A (2015) The relationship between neuropsychological functioning and FDG-PET hypometabolism in intractable mesial temporal lobe epilepsy. Epilepsy & Behavior, 44, 136-142.

Shaw, L-K and Homewood, J (2015) Exposure to Eating Disorder Memoirs in Individuals with Eating Pathologies. Journal of Nervous and Mental Disease. 203(8) 591-595

Knopman, A, Wong, CH, Stevenson, RJ, Homewood, J, Mohamed, A, Somerville, E. Ebert, Wen, L, Fulham, M and Bleasel, A (2014) The cognitive profile of occipital lobe epilepsy and the selective association of left temporal hypometabolism with verbal memory impairment. Epilepsia, 55(8), e80- e84.

Winchester-Seeto, T, Homewood, J, Thogersen, J, Jacenyik-Trawoger, C, Manathunga, C, Reid, A and Holbrook, A (2014) Doctoral supervision in a cross-cultural context: issues affecting supervisors and candidates. Higher Education Research & Development, 33(3), 610-626.

Harris, J, Homewood, J, Roberts, R, Hammond, S, Dudgeon, P, Cranney, J, Darlaston-Jones, D, and Herbert, J. (2013) Increasing Indigenous participation in psychology education: the Australian Indigenous Psychology Education project (AIPEP) InPsych: The Bulletin of the Australian Psychological Society Ltd, 35(5), 24-25.

Murray L, Miller A, Dayoub C, Wakefield C, and Homewood, J. (2013) Communication and consent: discussion and organ donation decisions for self and family. Transplant Proceedings, 45(1), 10-12.

Johns, A., Homewood, J, Stevenson, RJ, and Taylor, A (2012) Implicit and explicit olfactory memory in people with and without Down syndrome. Research in Developmental Disabilities, 33(2), 583-93.

Pardey, M.C, Kumar, N., Goodchild, A.K, Clemens, KJ, Homewood,J, and Cornish JL (2012) Long-term effects of chronic oral ritalin administration on cognitive and neural development in adolescents. Brain Sciences, 2, 375-404.

Mahmut, MK, Menictas, C, Stevenson, RJ, and Homewood, J (2011) Validating the Factor Structure of the Self-Report Psychopathy Scale in a Community Sample. Psychological Assessment, 23, 670-678.

Ridley, N, Homewood, J, and Walters, J (2011) Cerebellar Dysfunction, Cognitive Flexibility and Autistic Traits in a Non-Clinical Sample. Autism, 55 (6) 728-745.

Wakefield, C, Reid, J, and Homewood, J (2011) Religious and ethnic influences on willingness to donate organs and donor behavior: An Australian perspective. Progress in Transplantation, 21(2), 161-168.

Schaafsma, M, Homewood, J, and Taylor, AJ (2010) Subjective cognitive complaints at menopause associated with declines in performance of verbal memory and attentional processes of verbal memory and attentional processes. Climacteric, 13(1), 84-98.

Wakefield, CE, Homewood, J, Taylor, A, Mahmut, M, and Meiser, B (2010) Time Perspective in hereditary cancer: Psychometric properties of a short-form of the Zimbardo Time Perspective Inventory in a community and clinical sample. Genetic Testing and Molecular Biomarkers, 15(5), 1-11.

Wakefield, CE, Watts, KJ, Homewood, J, Meiser, B, and Siminoff, LA (2010) Attitudes toward organ donation, willingness to donate and donor behaviour: A review of the international literature. Progress in Transplantation, 20(4), 380-91.

Pardey, MC, Homewood, J, Taylor A, and Cornish, JL (2009) Re-evaluation of an animal model for ADHD using a free-operant choice task Journal of Neuroscience Methods, 176(2), 166-171.

Mahmut, MK, Homewood, J, and Stevenson, RJ (2008) The characteristics non-criminals with high psychopathy traits: Are they similar to criminal psychopaths ? Journal of Research in Personality,42 (3), 679-692.

Wakefield, CE , Meiser, B, Homewood, J Peate, M, Taylor, AJ, Lobb, E , Kirk, J, Young, M-A, Williams, R, Dudding, T, Tucker K and the AGenDA Collaborative Group (2008) A randomised control trial of a decision aid for women seeking genetic testing for breast cancer.Breast Cancer Research and Treatment, 107(2), 289-301.

Wakefield, CE, Meiser, B, Homewood, J, Ward, R , O'Donnell, S , Kirk, J and the Australian GENetic testing Decision Aid Collaborative Group (2008) Randomized trial of a decision aid for individuals considering genetic testing for hereditary nonpolyposis colorectal cancer risk. Cancer, 113 (5), 956-965.

Wakefield, CE, Kasparian, NA, Meiser, B, Homewood, J, Kirk, J, and Tucker, K (2007). Attitudes toward genetic testing for cancer risk after genetic counseling and decision support: A qualitative comparison between hereditary cancer types. Genetic Testing, 11 (4), 401-41.

Wakefield CE, Meiser B, Homewood, J, Barlow-Stewart, K, and Tucker, K (2007) A comparison of community, clinician, and patient preferences for naming a cancer-related mutation. Clinical Genetics, 71(2), 140-7.

Wakefield CE, Meiser, B, Homewood, J, Peate, M, Kirk, J, Warner, B, Lobb, E, Gaff, C, and Tucker K (2007) Development and pilot testing of two decision aids for individuals considering genetic testing for cancer risk. Journal of Genetic Counseling. 16(3), 325-39.

Wakefield, CE, Homewood, J, and Taylor, AJ (2006) Early blindness may be associated with changes in performance on verbal fluency tasks. Journal of Visual Impairment and Blindness, 100(5), 306-310.

Book Chapters:

Cranney, J, Morris, S Martin, F, Provost, S, Zinkiewicz, L, Reece, J, Milne-Home, J , Burton, LJ, White, FA, Homewood, J, Earl, JK, and McCarthy, S (2011) Psychological Literacy and Applied Psychology. In Cranney, J and Dunn, DA The Psychologically Literate Citizen: Foundations and Global Perspectives. Oxford, Oxford University Press

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Professor Roger Chung

ASSOCIATE DEAN RESEARCH AND HIGHER DEGREE RESEARCH
FACULTY OF MEDICINE & HEALTH SCIENCES

Professor Roger Chung is currently a Professor of Neurobiology and Neurochemistry, and since 2014 has held the position of Associate Dean (Research & Higher Degrees Research) in the Faculty of Medicine & Health Sciences at Macquarie University. His main areas of research interest involve a multi-disciplinary approach to understanding the basic biochemical, molecular and cellular mechanisms that underpin how neurons respond to injury or neurodegenerative disease, and how non-neuronal cells (glia) are involved in modulating this process. He completed his PhD in molecular biology in 2003, and has since led a research team at the University of Tasmania (2004-2012) and at Macquarie University since 2012. During his career, he has attracted more than $13 million in national competitive research funding, published 53 papers (h-index = 19), and received several awards including the Tasmanian Young Achiever of the Year.

Current research programs: His main areas of research interest involve a multi-disciplinary approach to understanding the basic biochemical, molecular and cellular mechanisms that underpin how neurons respond to injury or neurodegenerative disease, and how non-neuronal cells (glia) are involved in modulating this process. A major achievement in the past five years has been his leadership and key involvement in the establishment of Australia's largest research program dedicated to motor neurone disease (MND) at Macquarie University. The most common form of MND is amyotrophic lateral sclerosis (ALS), and these names are used interchangeably. The MND research program currently includes 45 researchers (about 15 are HDR students). He is an inaugural Co-Director of the Research Centre, with the responsibility for direct administrative and scientific leadership of the team.

In recent years a common genetic link has been made between MND and frontotemporal dementia (FTD), the second most common form of dementia after Alzheimer's disease. Therefore, many of the genes that cause MND are also found to cause FTD, there are shared pathological features between both diseases, and many MND patients display mild-to-moderate dementia (and many FTD patients display a motor phenotype). Their expertise in this area has led us to be awarded one of only six National Dementia Research Team Grants, to investigate the molecular origins of MND and FTD (2016-2020).

His individual research within the MND/FTD program focuses upon three thematic approaches to understanding MND;

1. Understanding the role of abnormal protein aggregates in MND/FTD disease mechanisms

"This project aims to understand how mutations in MND/FTD proteins cause them to inappropriately aggregate and accumulate inside neurons, and how this leads to degeneration. Our studies have focused upon characterizing a new MND/FTD gene recently identified by A/Prof Blair, and we have now mapped out in precise detail how the resultant mutant MND/FTD protein causes specific defects in the ubiquitin-proteasome system (UPS), ultimately leading to aberrant accumulation of proteins that causes apoptosis (recently accepted for publication in *Nature Communications*). Interestingly, our studies have identified several convergence points that link this pathway with other known MND/FTD genes, and subsequently our studies are now targeted at understanding the convergent disease mechanisms associated with UPS impairment that are shared by the key MND/FTD-causing genes. This work is being undertaken by Dr Albert Lee (Senior Postdoctoral Fellow), and Stephanie Rayner (PhD student)."

2. Using zebrafish to visualise neuron-glia interactions underlying MND/FTD disease mechanisms

"We use transgenic zebrafish to observe MND/FTD

disease processes within the nervous system of a living animal, overcoming the technical constraints associated with readily observing these processes in mammals. We have determined that when a single motor neuron degenerates (we specifically induce this by UV ablation or chemically using single-cell molecular approaches), MND/FTD proteins are released and are relatively resistant to degradation. These MND/FTD proteins are mostly phagocytosed by microglia, which we suspect is a protective mechanism. However, small amounts of MND/FTD proteins are internalised by surrounding neurons and appears to trigger degenerative pathology in these neurons. We suspect this represents the pathway that ultimately underlies the progressive spread of neurodegeneration that occurs in patients. This work involves Dr Marco Morsch (Senior Postdoctoral Fellow), Isabel Formella (Research Assistant), and PhD students Serene Gwee and Rowan Radford)."

3. Nanoparticle-based theranostics for MND and other neurodegenerative diseases

"One of the key roadblocks in this field is the ability to specifically detect and visualize dysfunctional/diseased neurons in the spinal cord and brain of MND/FTD patients (and in fact all other neurodegenerative diseases). This is key to not only developing predictive/diagnostic tools, but also ultimately for targeted molecular therapies. The blood-brain barrier represents the major hurdle, but subsequently we require imaging molecules compatible with deep tissue imaging (ie: in the brain and spinal cord). In collaboration with Prof Dayong Jin and Prof Ewa Goldys (ARC Centre of Excellence in Nanoparticles), we are testing their various nanoparticles for ability to cross the blood-brain barrier, and label diseased neurons. Concurrently, we are modifying their particles (and other types) to develop drug-delivery vehicles that can be used to deliver therapeutic payloads to diseased neurons. This work involves Dr Bingyang Shi (NHMRC Dementia Fellow), and PhD students Libing Fu and Meng He."

Top 5 publications during last 5 years.

RSC1. Williams KL et al (2016) *CCNF* mutations in amyotrophic lateral sclerosis and frontotemporal dementia. ***Nature Communications*** (in press, accepted 23/2/16). Reports discovery of a new causative gene (*CCNF*) for ALS and FTD, which occurs at similar frequency in ALS patients as *TDP-43* mutations. The contribution of my team identified how disease mutations disrupt the ubiquitination function of Cyclin F (protein encoded by *CCNF*). My team's data comprises all of Figure 3 (there are only four figures in total).

RSC2. Morsch M, Radford R, Lee A, Don EK, Badrock AP, Hall TE, Cole NJ, Chung R (2015) In vivo characterization of microglial engulfment of dying neurons in the zebrafish spinal cord. ***Frontiers in Cellular Neuroscience***. Reports the development of live-imaging techniques to enable single-cell visualisation of microglial responses to neuronal apoptosis. We demonstrate the dynamic formation of phagocytic structures as individual microglia phagocytose a dying neuron. This represents a unique experimental model for future studies that will evaluate molecular origins of ALS *in vivo*.

RSC3. Leung et al (2012) Metallothionein promotes regenerative axonal sprouting of dorsal root ganglion neurons after physical axotomy. ***Cellular & Molecular Life Sciences*** demonstrates that MT can undergo intercellular transfer between glia and neurons, and provides a novel experimental model for understanding neuron-glia interactions. On this basis, **RSC3** forms the scientific foundation for a recently funded ARC Discovery Project for which I am CIA (DP140103233; 2014-2016). These experimental neuron-glia methodologies will be used in this new NHMRC proposal.

RSC4. Lewis KE et al (2014) Microglia and motor neurons during disease progression in the SOD1G93A mouse model of amyotrophic lateral sclerosis: Changes in arginase1 and inducible nitric oxide synthase. ***Journal of Neuroinflammation*** provides systematic characterisation of microglial activation and the intercellular interaction between activated microglia and motor neurons in mutant SOD1 mice, an ALS disease model.

RSC5. Cong Y et al (2016) One-step Conjugation of Glycyrrhetinic Acid to Cationic Polymers for High-performance Gene Delivery to Cultured Liver Cells. ***Scientific Reports*** presents work developing new polymeric nanoparticle delivery systems. Our new nanoparticles display significantly reduced cytotoxicity and improved cellular targeting over existing particles. These techniques will be used to develop nanoparticles for future targeting to CNS for drug delivery and diagnostic applications.

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