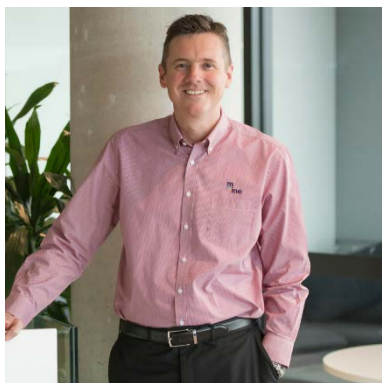


MDUF v1

Coordinators and lead authors

Leaders of the research project including paper writing and modelling. Lead authors effectively act as project champions.

David Bell



David Bell is a lead author in relation to MDUF v1 and the Chief Investment Officer of Mine.

He has 20 years of experience in investments, portfolio management, retirement outcomes, and risk management. He has managed investment portfolios and investment teams, and consulted to and educated many groups onshore and offshore within the financial services industry, as well as academia.

At Mine, his team of 10 manage close to \$10 billion in member retirement savings. David is responsible for overseeing the investment portfolio, enhancing the skills and capability of the investment team, and is involved in product development.

Previous roles include running his own boutique advisory firm (St Davids Rd Advisory) for five years and overseeing hedge fund investing at Colonial First State Global Asset Management for 12 years.

David holds a Bachelor of Mathematics (Applied Mathematics and Statistics) from the University of Newcastle and a Master of Applied Finance from Macquarie University. He is currently studying towards a PhD on investment management at the University of New South Wales, where he is researching multi-period portfolio construction. David is an honorary fellow at Macquarie University, where he lectures on hedge funds.

Between work and study, David is a busy man and enjoys the great outdoors in his downtime.

Estelle Liu



Estelle Liu is a Quantitative Analyst at Mine Wealth + Wellbeing focusing on retirement outcomes. She holds a Bachelor of Commerce degree with a first class Honours in Actuarial Studies at UNSW Australia. During her Honours year, she received three scholarships and completed a thesis focusing on immunization and hedging of longevity risk under the supervision of Professor Michael Sherris. She worked as an academic tutor and research assistant at the School of Risk and Actuarial Studies at UNSW Australia while completing her studies.

Estelle specialises in mortality modelling, longevity risk, interest risk modelling and retirement outcome modelling.

Estelle joined the investment team at Mine Wealth + Wellbeing in November 2014. Her focus has been on retirement outcome research including stochastic mortality risk modelling and retirement product design. In addition, she also developed and manages the internal investment performance reporting system.

Adam Shao, PhD, ASA



Adam is a Senior Quantitative Analyst (Retirement Outcomes) at Mine Wealth + Wellbeing Super and is affiliated with ARC Centre of Excellence in Population Ageing Research (CEPAR) as an associate investigator. He holds a PhD degree from the School of Risk and Actuarial Studies at UNSW and has qualified as an Associate of the Society of Actuaries (ASA) since December 2015.

Adam's expertise includes retirement outcome modelling, pricing and risk analysis of retirement products (e.g., annuity, reverse mortgage, and long-term care insurance), solvency capital requirements, longevity risk, and multiple state health transitions modelling.

After completing his PhD, Adam worked at CEPAR UNSW as a Research Fellow, focusing on projects including optimal dynamic retirement strategies, post retirement product design, and aged care modelling. Since February 2016, Adam has worked at Mine Wealth + Wellbeing in the investment team focusing on retirement outcome modelling projects, e.g. member's default utility function design, post-retirement product risk analysis, etc.

Working Group Members

Working Group Members have been contributors who also endorse the MDUF v1 as a sensible starting point when determining a set of preferences for Trustees to assume on behalf of those members whom they have little insight into.

Dr Anthony Asher

Anthony Asher is Associate Professor in the School of Risk and Actuarial Studies at the University of New South Wales. He currently teaches senior actuarial students in the Part II A courses and Risk and Capital Management. He has written a book *Working Ethically in Finance: clarifying our vocation* - for his students and others who might be interested in the topic.

The major theme in his current research are understanding needs in retirement to inform the development of appropriate retirement advice and products in Australia. He is Convenor of the Actuaries Institute Retirement Income Working Group, that is undertaking research into annuity design, the spending patterns of retirees, and investment advice – and provides technical input into the Actuaries Institute submissions on retirement income.

Living in Australia from 2003, he first served three years in the policy and research division of APRA then five as a consulting actuary with Deloitte. Prior to that, he was the Professor of Actuarial Science at the University of the Witwatersrand, and has served in a variety of non-executive positions.

Nick Callil, BSc(Hons) FIAA



Nick Callil is Head of Retirement Solutions for Willis Towers Watson Australia and a senior member of the firm's Australian Retirement Practice.

Nick leads Willis Towers Watson's research and consulting in the areas of retirement strategy for superannuation funds and financial institutions. He has researched and consulted on retirement and related matters, spanning topics such as default investment option design, longevity risk, safe spending rates in retirement, comparing retirement income strategies and asset allocation for retirees. He also consults on risk tolerance modelling, demographic and retirement adequacy analysis, assessment of dynamic lifecycle strategies and preparation of retirement income projections and use of fintech to present retirement risk effectively.

Nick is a regular speaker at conferences and seminars in Australia and globally on risk, retirement, investment, and longevity related issues. He is a member of the Association of Superannuation Funds of Australia (ASFA)'s Super System Design Policy Council.

Nick is a Fellow of the Institute of Actuaries of Australia and holds a first class Science degree with Honours in pure and applied mathematics from Monash University.

Geoff Kingston, PhD

Professor Geoff Kingston obtained his Bachelor and PhD degrees from the Australian National University. Before moving to Macquarie University in 2009, he lectured at the University of Western Ontario, the University of Queensland, the University of Sydney and the University of New South Wales.

He has published in the Quarterly Journal of Economics, the Economic Journal, The Journal of International Economics, the International Economic Review, the Journal of Money, Credit and Banking, the Journal of Monetary Economics, the Journal of Public Economics and the Journal of Economic Dynamics and Control. His co-authored book on superannuation was published in 2001 by Cambridge University Press.

His industry experience includes expert evidence in court cases arising from foreign currency loans, and expert evidence to the Jackson inquiry into a fund set up on behalf of former James Hardie employees suffering from the ill effects of asbestos exposure.

Dr David Knox BA PhD FIAA

David is a Senior Partner at Mercer and Senior Actuary for Australia. He is the National Leader for Research and Policy and the actuary to the Tasmanian and Western Australian public sector superannuation plans. He is the author of the Melbourne Mercer Global Pension Index.

Before joining Mercer in 2005, David was at PricewaterhouseCoopers and prior to that was the Foundation Professor of Actuarial Studies at The University of Melbourne.

He has acted as a consultant to a range of financial organisations, in both the private and public sectors, specialising in the superannuation and retirement incomes area. He has spoken and written widely in this area and served on many Government and industry committees.

David was an independent Board member of Australian Prudential Regulation Authority from 1998 to 2003 and President of the Actuaries Institute in 2000.

David Schneider BSc, FIA, FIAA



David is the CEO and founder of 10E24, a company that specialises in the development of software to determine the optimal investment and consumption strategy for retirees.

David is an actuary with over 20 years' experience in financial services, proven expertise in programming actuarial and investment software, strategic asset allocation (SAA), investment research, stochastic asset liability modelling, product development and pricing of financial service products.

Between 2005 and 2015 David was the Head of Research and Quant Methods at UniSuper. David had primary responsibility for UniSuper's SAA, and David's team managed two internal international equity quant mandates with over \$2B.

Before joining UniSuper David was a partner at Deloitte's. Prior to that, David was the founder of Actuarial Solutions, the first actuarial consultancy in Botswana. David was the statutory actuary to a variety of life offices, and pension funds.

David has served on several research and professional bodies, including being the Convenor of the Actuarial Society of South Africa's AIDS committee. He has written a variety of papers on the epidemiological, demographic and financial impact of HIV/Aids in sub-Saharan Africa as well as four papers on investments.

Tim Unger

Tim is a Senior Investment Consultant in Willis Towers Watson's Sydney office and leads the Australian practice's Advisory Portfolio Group. The primary aim of this Group is to ensure that Willis Towers Watson's best portfolio construction ideas are communicated in a timely and efficient way to all of our clients. This includes both top down (asset allocation) and bottom up (manager research) ideas. Tim previously led the Strategy team in Australia, which is responsible for strategic asset allocation modelling and advice.

Tim has worked with a wide range of institutional investors, including superannuation funds, insurance funds, endowments/ charities and public sector funds, and has advised them on all aspects of their investment arrangements.

Tim joined Watson Wyatt in 2001 and previously worked as an investment analyst for four years, firstly for a fund manager in South Africa and then for an investment bank in the United Kingdom. He also has two years' experience as a superannuation actuary in Zimbabwe, providing advice to fund trustees and sponsors.

Dr Geoff Warren

Dr Geoff Warren was Research Director at the Centre for International Finance and Regulation until its funding expired at the end of 2016. He has since returned to an academic position at the Australian National University, where he is also a member of the ANU Finance Committee and will be the convener of a new Student Managed Fund and a related course.

Geoff is a researcher who focuses on investment-related areas with a very much applied emphasis, covering topics such as portfolio construction, evaluation of investments, funds management, superannuation and governance. He is widely published in leading academic and practitioner journals, including the Journal of Portfolio Management and the Financial Analysts Journal.

Prior to pursuing an academic career, he spent over 20 years in investment markets, including as the Director of Capital Markets Research at Russell Investments; as an analyst, Chief Strategist and Head of Research with investment bank Ord Minnett / JPMorgan Australia; and as an equity portfolio management at AMP Capital. Geoff has a PhD from the AGSM, and a BComm (Hons) with the University Medal from UNSW.

Informal Contributors

Informal Contributors have participated in the MDUF v1 project but make no endorsement.

Jack Ding

Jack is an actuarial consultant within Milliman's Australian practice. He is mainly responsible for the technical developments of Milliman's objectives-based financial advice system.

His other responsibilities include research and consulting with clients on the area of financial advice, retirement income products and investment strategies.

Jack joined Milliman in early 2015, having previously worked with Rice Warner since 2010.

Jack has experience working in many areas of the superannuation and wealth management industries, including the development of stochastic models and investment strategies, assisting various clients on review and improvements of their retirement income products, and the modelling of population retirement outcomes and government superannuation policies.

Jack also has 3 years academic experience doing PhD research. The topic of his thesis is post-retirement financial planning and optimal pension income strategies.

Wade Matterson

Wade is a principal and leader of Milliman's Australian practice. He joined the firm in 2004 and is responsible for the development, delivery and oversight of Milliman's Australian operations across Product Development and Retirement as well as Risk and Capital Management service lines.

Wade has over 15 years' actuarial experience in the life insurance and wealth management industries and has been involved in a variety of projects across the globe. Wade has worked actively with clients in Asia, Europe and North America and prior to establishing the Australian practice was based in Milliman's London office.

Wade works with Milliman clients across the full spectrum of issues that affect their businesses. In particular, Wade has worked with wealth management organisations, insurance companies and pension funds on a range of assignments including strategy development, assessment and execution as well as new product initiatives, including the development of communications and marketing material, financial planning tools and frameworks.

Wade also has responsibilities for Milliman's fund solutions as well as capital and risk management services. In this capacity, Wade has worked with clients to assess capital requirements as well as develop and implement risk management frameworks and hedging strategies for a wide range of products and market exposures across the Asia-Pacific region.

Craig McCulloch

Craig is a Principal and consulting actuary within Milliman's Australian practice, where he leads Milliman's financial modelling and objectives-based advice analytic work. Craig also takes an active lead in many of Milliman's local life insurance consulting projects.

Craig has 18 years' actuarial experience in the life insurance and wealth management industries and has been involved in a wide variety of projects in Australia, the UK, the US and Europe.

Craig has advised clients on a wide range of life insurance, pensions and financial risk management issues. He has advised on the valuation and risk management of capital market guarantees and options, insurance company capital management, enterprise risk management, regulatory and economic capital issues and developed a range of asset-liability and economic scenario generator models and services. He has extensive expertise in modelling and managing capital market risks, including equity, interest rate and credit risks.

Prior to joining Milliman, Craig was responsible for OnePath Life's variable annuity hedging program. Before this, he was a consultant with KPMG in Australia, Barrie and Hibbert in the UK, and was an actuary in a variety of roles in both the UK and Ireland with Standard Life.

Nicolette Rubinsztein



Nicolette is a non-executive director at UniSuper, SuperEd and the Actuaries Institute. She is an experienced senior executive in the wealth management industry, having held three General Manager roles at CBA/ Colonial First State as well as senior positions at BT Funds Management and Towers Perrin prior to that.

She was a director of ASFA for eight years and chair of its Super System Design Council.

Nicolette is a qualified actuary, holds an executive MBA from the AGSM and is a graduate of AICD.

For her work in superannuation policy, Nicolette was awarded an ASFA Distinguished Service Award and an inaugural Financial Services Council Industry Excellence Award. She is a UNSW Alumni Leader and is a member of Macquarie University's Faculty of Business and Economics Industry Advisory Board.

She is author of the book "Not Guilty", a guide for career mums. In 2014 she was named one of the top 10 "most powerful part-timers". She is married to Jonathan Rubinsztein and they have three daughters.