



20th International Longevity Risk and Capital Markets Solutions Conference

Monday 8th and Tuesday 9th September 2025





Welcome to Longevity 20

Dear participants!

We would like to take the opportunity to thank you for joining us at *Longevity 20: The Twentieth International Longevity Risk and Capital Markets Solutions Conference*. This conference provides a unique and vital global opportunity for practitioners, policy makers and academics to get together to discuss one of the most pressing challenges of our time.

Over the last decade, it has become increasingly apparent that longevity risk is a crucial risk to recognize, quantify and manage for both pension plan and annuity providers, as well as for governments and individuals. Managing this risk, however, has proven to be very challenging. Even official agencies have systematically mis-estimated changes in mortality. While pension plan and annuity providers are now seriously questioning whether they should continue to bear longevity risk unhedged, the capital markets are gradually emerging to offer solutions for managing and transferring longevity risk to investors seeking a risk that is uncorrelated with other asset classes.

Over the next two days, we will be discussing and exploring how longevity risk can be modelled, projected and transferred. Discussions will cover a wide range of emerging solutions, from new hedging instruments in capital markets to innovations in pension and insurance design.

This year's conference themes also reflect the complexity of modern longevity challenges: from health and inequality to developments in the longevity risk market and the lasting impact of pandemics. We will also explore the intersection of longevity with broader issues such as climate change and socioeconomic factors, and explore the evolving landscape of longevity-related products, such as pensions, annuities, and reverse mortgages, and what the future holds for each.

We would particularly like to thank our sponsors for their financial support, Valerie De Souza, Marilyn Parris-Bell and Emmanuel Lawrence for their superb organizational skills – without which this event would not have been possible.

Now, we wish you all a thrilling event with many inspiring new insights!

A blue handwritten signature of Wenjun Zhu.

Wenjun Zhu

A blue handwritten signature of David Blake.

David Blake

A blue handwritten signature of Andrew Cairns.

Andrew Cairns



Plenary Sessions (Plenary Room - Heliconia 3401AB-2, 3501AB-2)

Monday 8th September 2025

Chair of morning session: David Blake

Chair of afternoon session: Guy Coughlan

08:00 – 09:00 Registration and Refreshments

09:00 – 09:30 Opening Remarks – Jun Yang (Dean of Nanyang Business School), David Blake (Bayes Business School and Pensions Institute) and Wenjun Zhu (Nanyang Business School)

09:30 – 11:00 **Plenary Session 1 – Hot Topics in Longevity**

- ***Longevity horizons: Emerging life expectancy trends and disparities in the Asia-Pacific Region***
Tim Adair (Demographer and Principal Research Fellow, University of Melbourne)
- ***Strategic responses of the Asian insurance industry to the Longevity Era***
Tiger Li (CEO & Executive Director, BeeTech and Head of Business Development Asia, SCOR Digital Solutions)
- ***Medically underwritten annuities and how alternative product design can lead to better outcomes for the insurer and consumer***
Han Yan (Senior Actuary, Longevity Research, SCOR) and Mark Flint (Head of Product Development, Global Longevity, SCOR)

11:00 – 11:30 Coffee break – Sponsored by EY

11:30 – 12:30 **Parallel Session I**

12:30 – 14:00 Lunch – Sponsored by RGA

14:00 – 15:30 **Parallel Session II**

15:30 – 16:00 Tea break - Sponsored by Canada Life Re



16:00 – 17:45 **Plenary Session 2 – Global Derisking and Reinsurance Trends: US, Europe and Asia**

- ***Longevity in Asia: Mortality improvements and longevity risk transfer opportunities in Asia***
Patrick Cheung (RGA)
- ***Is the time for Index Based Longevity Hedging here – and the case for capital relief?***
Paul Kitson (EY)
- ***Global derisking and reinsurance trends: US, Europe and Asia***
Rohit Mathur (Prudential Financial) and Paul Forestell (Brookfield)

18:00 – 22:30 Drinks Reception and Gala Dinner – Sponsored by Prudential Financial

Tuesday 9th September 2025

Chair of morning session: Guy Coughlan

Chair of afternoon session: David Blake

08:00 – 09:00 Tea and Coffee on arrival – Sponsored by GAIP

09:00 – 10:30 **Parallel Session III**

10:30 – 11:00 Coffee Break – Sponsored by Club Vita

11:00 – 12:30 **Plenary Session 3 – Longevity issues in Asia**

- ***Mortality improvements and post-pandemic mortality in a selection of Asian populations***
Mark Woods (Head of Research & Development, Canada Life Re)
- ***The applications of address-based mortality models to emerging markets***
Douglas Anderson (Club Vita)
- ***Navigating longevity risk in Asia (overview of some relevant Asian markets, their markets, problems, challenges and opportunities)***
Cord-Roland Rinke (Hannover Re)

12:30 – 14:00 Lunch - Sponsored by SCOR

14:00 – 15:30 **Parallel Session IV**

15:30 – 16:00 Tea Break - Sponsored by Hannover Re



16:00 – 17:30

Plenary Session 4 – Hot Topics in Longevity II

- ***Findings from the GAIP Retirement Protection Gap Project (focusing on longevity, long-term care, healthcare, pension systems, public health insurance, and private markets)***
Shinichi Kamiya and Joey Zhou (NTU, Singapore)
- ***Benjamin Gompertz: the Financial Economist***
Moshe Milevsky (York University, Canada)
- ***Biohacking meets luxury: The science and business of longevity in the wellness economy***
Guy Coughlan (COO, Clota Varde)

17:30

Closing remarks from David Blake, Wenjun Zhu and Valeria D'Amato



Parallel Session I

Monday 8th September 2025 - 11:30 - 12:30	
Breakout Room A: Heliconia 3403 & 3404	1A – Mortality Modelling I
Jiacheng Min	Quantifying Climate-Driven Mortality Risk: An Application using High-Frequency Data
Runze Li (Chair)	Dynamic Mortality Forecasting via Mixed-Frequency State Space Models
Breakout Room B: Heliconia 3405 & 3406	1B - Mortality Modelling for Small Populations
Hsin-Chung Wang	A Simulation Study on the Bias and Standard Error in Estimating Life Expectancy for Small Populations
Xiaochuan Lu (Chair)	Universe of Individual-Level Mortality Models
Plenary Room: Heliconia 3401AB-2, 3501AB-2	1C - Mortality and Financial Risk Analysis
An Chen	Optimal Life Contingent Payoffs: A Peer-to-Peer Solution
Anne Balter (Chair)	The Impact of Uncertainty in Risk Preferences and Risk Capacities on Lifecycle Investment
Breakout Room C: Heliconia 3503 & 3504	1D – Reverse Mortgages I
Deyu Bai	Arbitrage Free Pricing of Tenure Based Reverse Mortgage Insurance with Neural Stochastic Differential Equations
Sharon Yang (Chair)	Evaluating the Impact of Multi-State Health Models and Spousal Dependency Structures on Reverse Mortgage Pricing
Breakout Room D: Heliconia 3505 & 3506	1E - Longevity Pooling & Product Design
Gayani Thalagoda	An Assessment Framework for Equitable Longevity Pooling Arrangements
Tzuling Lin (Chair)	Risk Analysis in Tokenization of Life Insurance
Breakout Room E: Heliconia 3411 & 3511	1F - Pension Systems I
Gene Lai	The Impact of Retirement Benefit Cuts: Evidence from a Natural Experiment in Pension Reform
Haoxuan Jiao (Chair)	Reform of Basic Pension Insurance Benefit Calculation: Evidence from China



Parallel Session II

Monday 8th September 2025 - 14:00 - 15:30	
Breakout Room A: Heliconia 3403 & 3404	2A - Longevity Hedging/Longevity Risk Management
Yawei Wang	Optimal Hedging of Longevity Risks for Group Self-Annuity Portfolios
Min-Teh Yu	Valuation and Hedging of Longevity Swaps under Counterparty Risk
Ziv Cohen (Chair)	Longevity Risk Management: A Sustainable Framework for Fiscal Stability and Economic Growth
Breakout Room B: Heliconia 3405 & 3406	2B - Mortality Modelling II
Zijia Wang	Mortality Modeling via Vitality: Model Constructions and Actuarial Applications
Yunyun Wang	Beyond Linearity: A Bayesian Additive Tree Approach to Mortality Forecasting and Nowcasting
Yanxin Liu (Chair)	Regime Switching in U.S. Mortality Trends: Evidence and Underlying Drivers
Breakout Room C: Heliconia 3503 & 3504	2C – Health I
Malene Kallestrup-Lamb	Competing Demographic Drivers of Healthcare Expenditures: Coexistence of the Red Herring and the Steepening Hypotheses
Alexander Marin	Forecasting Macro-Level Healthcare Expenditures: A Unified Model for Healthcare and Mortality
Hong Beng Lim (Chair)	Fairness Issues in Long-Term Care Insurance via AI-inspired Methods
Breakout Room D: Heliconia 3505 & 3506	2D - Climate
Andreas Milidonis	Desert Dust Storms: Insurability and Financial Solutions
Pin-Xuan Huang	Pollutant Specific Health and Economic Burdens of Ambient Air Pollution in Taiwan: A Multi-Pollutant Exposure of Assessment Integrated with National Health Insurance Data
Kara Clark (Chair)	The Impact of Wildfires and Air Pollution on Mortality Risk
Breakout Room E: Heliconia 3411 & 3511	2E - Annuities
Yinan Ying	Gender-neutral pricing, socioeconomic differentials and crowd out effects in annuities
Francesco Ungolo (Chair)	An Augmented Variable Dirichlet Process Mixture Model for the Analysis of Dependent Lifetimes
Plenary Room: Heliconia 3401AB – 2, 3501AB – 2	2F – Mortality Modelling III
Eman Elmeaddawy & Severine Arnold	Spatial Dependence of Cause-specific Mortality in Europe
Valeria D'Amato (Chair)	Incorporating Vitagions into Stochastic Longevity Models
Roshan Tajapra & Kishore Ananda	Mortality models in the age of medical innovation: A fireside chat



Parallel Session III

Tuesday 9th September 2025 - 09:00 - 10:30	
Breakout Room A: Heliconia 3403 & 3404	3A – Mortality Modelling IV
Kai Kaufhold	Mortality Differentials Modelled in Continuous Time
I-Chien Liu	A Limit to Human Life Expectancy under a Time-Varying Mortality Model
Dale Hall (Chair)	Quarterly Mortality Monitoring Report for the U.S. Population
Breakout Room B: Heliconia 3405 & 3406	3B - Reverse Mortgages II
Lingfeng Lyu	Enhancing Retirement Welfare Outcomes with the Australian Home Equity Access Scheme
Yeonjae Lee	Mental Accounting, Annuities, and Retirement Asset Allocation Limitations of Annuity and Reverse Mortgages Innovation
Yen-Chih Chen (Chair)	Government Policy Uncertainty and Non-Negative Equity Guarantees
Plenary Room: Heliconia 3401AB – 2, 3501AB – 2	3C – Inequality
Tim Adair	Revealing the Hidden Inequality in Longevity in Australia
Andres Villegas	Towards Fairer Retirement Outcomes: Socio-Economic Mortality Differentials in Australia
Andrew Cairns (Chair)	A Socio-Economic Mortality Index for Scotland
Breakout Room C: Heliconia 3503 & 3504	3D – Pension Systems and Retirement Choices II
Runhuan Feng	The Pension Dilemma: Financial Sustainability Versus Intergenerational Equity
Hua Chen (Chair)	Longevity Risk, Health Shocks, and Housing: Optimal Retirement Choices in a Life Cycle Model
Breakout Room D: Heliconia 3505 & 3506	3E – Cause of Death and the COVID Pandemic
Kenneth Zhou	The Long Shadow of Pandemic: Understanding the Lingering Effects of Cause-specific Mortality Shocks
Ayse Arik	Cause-specific Mortality Improvements and Excess Deaths: A Socio-economic and Post-COVID Analysis
Jack Yue (Chair)	Spatiotemporal Analysis of Mortality Rates of Major Death Causes Among Men and Women in Taiwan

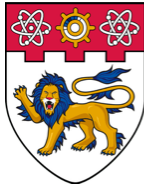


Parallel Session IV

Tuesday 9th September 2025 – 14:30 - 15:30	
Breakout Room A: Heliconia 3403 & 3404	4A – Multi-population Modelling
Xiaobai Zhu	A Bayesian Approach in Projecting Future Mortality at the Provincial Level in China
Chou-Wen Wang	Deep Autoregressive Neural Networks with Time-Varying Copulas for Multi-Population Mortality Dependence
Yang Qiao (Chair)	Graph Neural Networks for Multi-Population Mortality Modeling: Uncovering Lead-Lag Structures and Mortality Determinants
Breakout Room B: Heliconia 3405 & 3406	4B - Health II
Katja Hanewald	Cohort Trends in Intrinsic Capacity in Europe
Lan Zou	What Do Consumers Do When They Select Health Insurance Plans?
Yuxin Zhou (Chair)	Multi-state Health-contingent Mortality Pooling: A Heterogeneous, Actuarially Fair, and Self-sustaining Product
Plenary Room: Heliconia 3401AB – 2, 3501AB – 2	4C – Future Mortality
Nicky Draper	GLP-1 Receptor Agonists and the Future of Mortality: What Actuaries Need to Know
Kara Clark	Long-Term Impacts of Exposure to the COVID-19 Pandemic in a Cohort Perspective Remaining Life Expectancy, Scarring, and Selection
Polin Wang (Chair)	Mortality Compression and Postponement: Two Competing Approaches
Breakout Room C: Heliconia 3503 & 3504	4D – Corporate Exposure to Longevity Risk
Zhanhui Chen	Longevity Shocks and Corporate Debt Markets
Ze Chen	Firm-Level Longevity Risk: Measurement and the Role of Enterprise Risk Management
Yijia Lin (Chair)	Pension Buyouts: Tackling the Solvency Challenges in Multiemployer Defined Benefit Plans
Breakout Room D: Heliconia 3505 & 3506	4E - Annuity Behavioral and Market Insights
Meitong Ai	Health Cost Risk, Informal Insurance and Annuitization Decisions
Jiamin Yan (Chair)	Can improving Longevity Literacy Motivate Interest in Life Annuities?
Breakout Room E: Heliconia 3411 & 3511	4F - Pension Systems III
Nana Ding	Challenges of China’s Pension System and Potential Solutions
Zhi Qiao (Chair)	Synergistic Reform of Pension Contribution Rates and Delayed Retirement



Hosts



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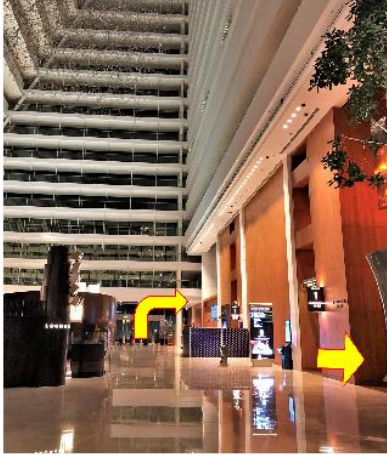
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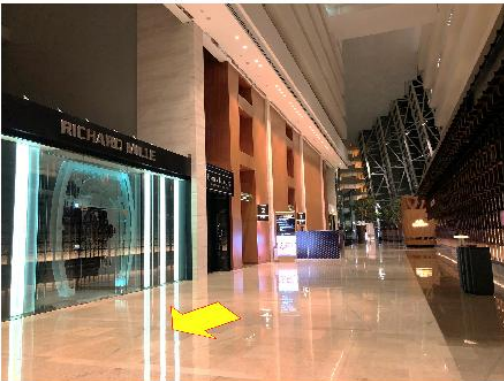


Via Underpass

There are 2 way to get to Convention Centre from Hotel Tower 1.

1. You may exit the glass doors and cross the road to Convention Centre.
2. You may take the underpass located between tower 1 and 2.

HOTEL TOWER 2



Guest may take the underpass to Convention Centre from Hotel Tower 2. Facing the restaurant Wakuda, turn right for the underpass and head to Convention Centre.

HOTEL TOWER 3



Guest may take the underpass to Convention Centre from Hotel Tower 3. Facing the concierge or cafe, turn right for the underpass and head to Convention Centre.

Underpass



Via underpass, enter the walkway between Piaget and IWC. Walk pass Bovet and Luggage Counter, take the escalator up to Convention Centre.



Conference Floor Layout

