Brief Biography of Associate Professor Loic Yengo, PhD

Global health systems are currently threatened by the rise of chronic diseases such as heart disease, diabetes and cancer. To date, these diseases cannot be permanently cured. Therefore, our best chance of reducing their burden is to prevent their onset in a way that is equitable to all people across the world.

Associate Professor Loic Yengo from The University of Queensland's Institute for Molecular Bioscience has developed new statistical methods for analyzing big genomic data and is applying these methods in an effort to develop the most accurate technologies to predict an individual's risk of multiple diseases from their unique DNA profile.

This is set at birth, giving doctors, patients and families a unique opportunity to prevent disease decades before symptoms occur, improving patient outcomes and reducing healthcare expenditure. Increasing the representation of people with non-European ancestries in genetic health data globally will help overcome the bias in risk prediction that has developed from previous genetic studies, which mostly involved individuals of European ancestry. Loic Yengo's discoveries aim to equally benefit all communities worldwide.

This landmark research builds on a track record of excellence. Since completing his PhD in applied mathematics less than 10 years ago, Dr Yengo has co-authored over 125 research articles in top-tier scientific journals, including 17 publications with more than 500 citations each, and 8 publications totalling over 1000 citations each. Since 2019, he has been awarded more than $10M in competitive funding.

He has discovered genes causing differences between individuals in complex traits such as height, blood glucose levels, and susceptibility to common diseases such as type 2 diabetes. In 2022, he led the largest genomic study ever conducted to investigate the genetic determinants of human height. With 5 million participants, this milestone study identified variations at 12,000 sites on the genome. This is a key step towards fully understanding the biological mechanisms underlying skeletal growth, accelerating the discovery and personalization of treatments for growth disorders.

Another major contribution has been to advance theoretical and empirical understanding of why findings from genetic studies based on people of European ancestry have reduced transferability in other populations. This ground-breaking

research has enabled novel approaches to increase the benefit of genomic technologies for disease prevention in minority communities.

Dr Yengo established an independent laboratory in 2020. His former staff and students have taken the expertise gained under his leadership to pharma companies across the globe, improving their techniques for developing new treatments.

Dr Yengo's original contributions to the field of human genetics were recognized in 2022 by the Australian Academy of Science's Ruth Stephens Gani Medal, and by the scientific journal *Nature Medicine,* which named him the only Australian-based researcher of 11 early-career researchers worldwide blazing a trail in their field. He is also the recent recipient of the prestigious Snow Medical Foundation Fellowship, one of only two in 2024.