

## 1330<sup>th</sup> Ordinary General Meeting of the Royal Society of NSW

### Minutes

---

The 1330<sup>th</sup> Ordinary General Meeting of the Royal Society of NSW took place at 6:25 pm on Wednesday 2 April 2025 in the Michael Crouch Room, Mitchell Building, State Library of NSW, followed by an open lecture. There were 44 Members and Fellows, and three visitors in attendance. The meeting was streamed and recorded.

#### 1. WELCOME AND APOLOGIES

The President, Em. Prof Christina Slade FRSN presided at the meeting. She welcomed members and guests.

Apologies were received from Mr John Hardie, Dr Jan Herrmann, Dr Jessica Milner Davis and Mr Bruce Ramage.

#### 2. MINUTES OF THE 1329<sup>th</sup> ORDINARY GENERAL MEETING

Minutes of the 1329<sup>th</sup> Ordinary General Meeting were reviewed and approved. There were no matters arising.

#### 3. ANNOUNCEMENT OF NAMES OF CANDIDATES FOR FELLOWSHIP AND MEMBERSHIP

The Fellows and Members Assessment Committee meets between Council meetings and makes recommendations to Council for the election of Fellows and Members. These are circulated to Councillors prior to the Council meeting, with sufficient time for Councillors to assess the nominations. If no valid objections are received from Councillors, they are proposed to Members for consideration at the next OGM.

At this meeting, the Council proposed the following candidates for admission to the Society:

##### **FELLOWSHIP**

##### **Professor Roger Chung**

*Laudation – Roger Chung has made notable contributions to the fields of neurobiology and neurochemistry.*

##### **Professor Helen Rizos**

*Laudation – Helen Rizos has made significant contribution to the biomedical sciences, notably in the field of cancer research.*

##### **Professor Buddhima Nalin Indraratna**

*Laudation – Buddhima Indraratna has made an international contribution to geotechnology.*

##### **Professor Lisa Wood**

*Laudation – Lisa Wood has made a substantial contribution to nutrition and respiratory medicine.*

##### **Brendon Hyde**

*Laudation – Victor Brendon Hyde has made a significant contribution to the field of civil engineering.*

##### **Dr Anna Maria Funder**

*Laudation – Anna Funder has made a significant contribution to Australian literature.*

##### **Professor Debbie Haski-Leventhal**

*Laudation – Debbie Haski-Leventhal has made a notable contribution to the field of*

*management especially in the area of corporate responsibility.*

**Gary Ian Zamel**

*Laudation – Gary Ian Zamel has made a notable contribution to the commercialisation of science and technology.*

**Professor Michael Newton Barber**

*Laudation – Michael Barber has made a substantial contribution to statistical mechanics research and Australian higher education.*

**Professor Yihong Du**

*Laudation – Yihong Du has made a substantial contribution to the discipline of mathematics, notably in the area of nonlinear elliptic and parabolic partial differential equations.*

**Professor Olivier Piguet**

*Laudation – Olivier Piguet has made a substantial contribution to clinical neuropsychology, notably in the area of dementia.*

**Dr Abul Khair Rizvi**

*Laudation – Abul Khair Rizvi has made a significant contribution to Australia's population and immigration policy and practice.*

**Dr Michael William Taylor**

*Laudation – Michael Taylor has an international reputation in financial regulation and has also contributed to the history of ideas.*

**MEMBERSHIP**

**Dr Merrilyn Clancy**

**Kim Man Ip**

**Dr Marissa Betts**

**Dr Mahendra Gunathilaka Samarawickrama**

**Dr Julie-Ann Robson**

**Sophie Charlotte Mary Ray**

**Lea Kannar-Lichtenberger**

**4. PRESENTATION OF FELLOWSHIP AND MEMBERSHIP CERTIFICATES**

No certificates were presented at the meeting.

**5. REPORT FROM COUNCIL AND COMMITTEES OF COUNCIL**

The President outlined key strategies for securing the Society's future. She expressed sincere thanks to Dr Susan Pond AM FRSN for her exceptional leadership and dedicated service as President over the past four years, and to Dr Donald Hector AM FRSN for his long-standing and valuable contributions to Council over the past 14 years.

**6. OPEN LECTURE**

***“Engineering the Future”***

***Professor Hugh Durrant-Whyte  
FRS FREng FAA FIEEE HonFIEAust***

***NSW Chief Scientist and Engineer***

Professor Durrant-Whyte has worked as an engineer in academia, industry and government for over forty years during which time he has witnessed and been an active participant in great change – driven primarily by the growing power of information and communication technologies. In the next forty years of engineering will deliver even more profound change for humanity through the intersection of four technology domains – Digital, Biology, Materials and Energy:

The digital and information age is still in its infancy. The positive potential of artificial intelligence (AI) and robotics to enable more productive lives, to make better decisions and to undertake tasks not yet possible, is just beginning. While mindful of the perils, Australia stands to benefit substantially from these developments – from increased and bespoke

manufacturing activity, through smarter defence, to managing fragile ecosystems. New physics, in quantum, photonics and organics, will also drive unprecedented advances in information technology hardware, from computing to sensing and communications.

The revolution in biology in the last two decades rivals that of the early information age. Biology is increasingly an engineering discipline as it becomes more concerned with design, computation and manufacturing. Engineering is already at the heart of new and developing biology industries from RNA to synthetic meats. Engineering thinking is also driving new directions in biology: the use of computational AI in protein structure prediction; understanding life as a complex web of protein nano-machines; and the use of tools from synthetic biology and gene editing to create new proteins and organisms. I believe that as biology becomes an engineering technology, its impact will surpass even that of the information age.

Materials science has changed beyond all recognition from forty years ago: what was once mainly about metal forming and finishing, is now about nano-structures and internal architectures, meta-materials and additive manufacturing, and about carbon and novel organics. This has been driven by a new understanding of materials at the atomic scale, by additive manufacturing technologies, and by the increasing use of novel chemistries – both organic and inorganic. Materials science is increasingly the key to progress across many engineering disciplines: from modern aerostructures and buildings, through energy storage and transmission, to silicon and compound semiconductors for sensing and computing.

The existential threat of climate change has brought a huge focus on new ways of producing, storing and managing energy. Renewable energy, in particular, is seeing unprecedented innovation and investment in all areas: from harnessing solar and wind generation of energy, to storage in batteries and hydrogen derivatives, to new methods of managing decentralised electricity grids. This, in turn, is driving a revolution in foundational technologies of electrical engineering, materials chemistry and computation. Global investment is also unprecedented and with this provides an opportunity for Australia to create a significant national industry in the coming decades.

This talk discussed this future vision of engineering.

***About the speaker***

**Hugh Durrant-Whyte** is the NSW Chief Scientist & Engineer and Natural Resources Commissioner.

From 2016 to 2018, Hugh was Chief Scientific Advisor to the UK Ministry of Defence. From 2014–16 and 2002–2010, he was a Professor and ARC Federation Fellow at the University of Sydney.

From 2010 to 2014, Hugh was CEO of National ICT Australia (NICTA) and, from 1995 to 2010, was Director of the ARC Centre of Excellence for Autonomous Systems and of the Australian Centre for Field Robotics (ACFR).

Hugh is a world-leading authority on machine learning and robotics and their applications in areas that include cargo handling, mining and defence. He has published over 300 research papers, graduated over 70 PhD students, and has won numerous awards and prizes for his work, including being named 2010 NSW Scientist of the Year and 2008 Engineers Australia NSW Engineer of the Year.

In his career, he has worked with many major companies and has co-founded three successful start-up companies. He is particularly well known for his work with Patrick in delivering the automated container terminals in Brisbane and Port Botany, and for his work with Rio Tinto in pioneering and delivering the automated 'Mine of the Future'. He is an honorary Fellow of Engineers Australia, a Fellow of the IEEE, a Fellow of the Royal Academy of Engineering, a Fellow of the Australian Academy of Science, and a Fellow of the Royal Society of London.

**7. VOTE OF THANKS**

A vote of thanks was given by Em. Prof Christina Slade FRSN.

**8. OTHER BUSINESS**

There was no other business.

**9. CLOSE**

The President closed the meeting at 8:00 pm.

The minutes were recorded by the Secretary, Em. Prof Trevor Brown FRSN.

Signed as a true record  
Em. Prof Christina Slade FRSN  
President