

FOCUS

Lectures



INSPIRATION • INSIGHT • INNOVATION



Dr Susan X. Ying FRAeS, FAIAA

Innovation in Aeronautical Sciences: The Art of the Possible

The Joint Board for Aerospace Engineering invites members, professionals and the general public to attend the Focus lecture series “Innovation in Aeronautical Sciences: The Art of the Possible”. These lectures will be held in Newcastle, Sydney, Canberra, Melbourne, Perth, Adelaide and Brisbane in April 2018.

The aerospace industry has given the world over 100 years of incredible innovation.

Technical miracles, thought impossible at the time, have been developed including flight controls, jet engines, new materials and satellite navigation, just to name a few. These advances have moved flight from basic stick and rudder to a multitude of systems and capabilities that did not exist a decade ago including commercial autonomous vehicles. How can the aerospace industry become even more innovative and agile to meet the challenges of the next phase of development? How can Australian innovators work with global aerospace players to embrace emerging breakthroughs as the catalyst for innovation?

This presentation provides a glimpse of aeronautical science innovation trends together with their associated challenges and opportunities. Three key components covered are: transformational tools and processes; evolutionary innovation in the near mid-term; and, game-changing products and services. For example, with the Internet of Things (IoT) and Data Analytics, value will multiply throughout the whole product life cycle. In the near mid-term future, products

will trend towards “going soft” (software), going green, and going fast. Finally, the presentation discusses innovations which enable further game changing capabilities such as autonomous and intelligent systems that could find their way into application in the next decade.

The global aerospace industry is now on the cusp of its Third Revolution. The First Revolution took us to the jet age. The Second Revolution brought us to today where at any given time, there are thousands of commercial jets in the air. With the convergence of breakthrough innovations (e.g. as discussed in this presentation) potentially yielding unprecedented integrated capabilities, aerospace engineers can now open the design space beyond the traditional “tube and wings” and fossil-fuel based power plant. Building on our past successes, we must work together to seize the opportunity to innovate by leveraging the global supply chain like never before for achieving the art of the possible!

About the speaker

Dr. Ying is currently the President of the International Council of the Aeronautical

Sciences (ICAS). During her distinguished career she has demonstrated success both at individual and team levels, and has been recognised as recipient of many honours, including the People’s Republic of China Friendship Award, Asian American Engineer of the Year Award, Boeing Professional Excellence Award from the Chief Technology Office, NASA Group Achievement Award, Boeing Amelia Earhart Society Award; AIAA Applied Aerodynamics Best Paper Award and NASA Group Achievement Award.

With 35 years of aerospace industry experience including the Commercial Aircraft Corporation of China (COMAC) and the Boeing Company, Dr. Ying specialises in large-scale integration of aerospace programs, especially in international collaboration in aircraft development.

Dr Ying holds a commercial pilot license and is a FAA-Certified Flight Instructor. She earned her BA in Mechanical Aerospace Engineering from Cornell University, and received her PHD in Aeronautics and Astronautics from Stanford University, and Brookings Institute in Brussels.





Photo credit: Lijium

Dates & Venues

Click on the location **below** to register for the FOCUS Lecture

When	Where
Newcastle > Tuesday, 3 April 2018 5.30 pm - 7.00 pm	Engineers Australia Newcastle Suite 3, Tonella Commercial Centre 125 Bull Street, Newcastle West, NSW 2302 (entry via Dick Street)
Sydney > Wednesday, 4 April 2018 6.00 pm - 8.00 pm	University of Sydney New Law School Lecture Theatre, (F10) Eastern Avenue, Camperdown Campus, NSW 2006
Canberra > Thursday, 5 April 2018 6.00 pm - 7.30 pm	Questacon Canberra, Japan Theatre King Edward Terrace, Parkes ACT 2600
Melbourne > Tuesday, 10 April 2018 5.30 pm - 7.00 pm	Engineers Australia Melbourne, Innovation Hub, Level 31, 600 Bourke St, Melbourne VIC 3000
Perth > Thursday, 12 April 2018 5.30 pm - 7.00 pm	Curtin University, Tim Winton Lecture Theatre B213:R104 Kent Street, Bentley WA 6102
Adelaide > Monday, 16 April 2018 5.30 pm - 7.00 pm	University of South Australia Mawson Lakes Campus, Room MM 1-05 Mawson Lakes Blvd, Mawson Lakes SA 5095
Brisbane > Monday, 23 April 2018 5.30 pm - 7.00 pm	Engineers Australia Queensland Hawken Auditorium, 447 Upper Edward Street Brisbane QLD 4000

Agenda

Registration | Welcome tea & coffee (available at some venues)

Dr Susan X. Ying FRAeS FAIAA

President, International Council of the Aeronautical Sciences
Innovation in Aeronautical Sciences: the Art of the Possible

Q & A Session

Tickets

All tickets: Complimentary

Registration enquiries:

focus@engineersaustralia.org.au

CPD

Eligible for **(1)** Continuing Professional Development (CPD) hour.

Hosts

Joint Board for Aerospace Engineering – Engineers Australia and Royal Aeronautical Society, Australia Division.

Engineers Australia – Engineers Australia is the Australian national forum for the advancement of engineering and the professional development of our members.

The Royal Aeronautical Society, Australian Division (RAeS) – The RAeS is “the one multidisciplinary professional institution dedicated to the global aerospace community.” The RAeS is the world’s only learned society dedicated to the entire aerospace community.

FOCUS Lecture registration includes

- Attendance at the FOCUS Lecture and Q & A session
- Networking opportunities at the welcome tea and coffee
- Access to the senior industry delegates during the event
- Access to the presentation slides

Sponsors

Australian Society for Defence Engineering (ASDE) is a technical society established by Engineers Australia in order to provide a forum to engage with various engineering fields and contribute to the practice of Defence engineering.

Aerospace Maritime and Defence Foundation of Australia Limited is a not-for-profit corporation limited by guarantee and established to promote the development of aviation and Australian industrial, manufacturing and information/communications technology resources in the fields of aviation, aerospace, maritime and defence.