



## Message from our President

David Westmore

July in the Bute Hall at the University of Glasgow – please do come along and encourage any other interested parties to come along too.

IESIS Council will be bringing a Special Resolution to this year's AGM in April 2020 to change the Institution's name back to its original name of The Institution of Engineers in Scotland - very befitting in the 200th anniversary of the birth of our founder and first President, William Rankine. The change is being proposed because, when promoting the Institution, we continually come across the mis-conception that the Institution is for shipbuilders rather than all engineers, and, that shipbuilders are not engineers! Through our lecture programme we strive to represent all areas of engineering and would like our name to reflect today's engineering environment. I hope you will be able to attend the AGM and support the proposed change.

On another front we had a very successful lecture in association with RINA given by Stephen Payne, the QM2

designer, to celebrate 50 years since the last great Clydebuilt passenger vessel, QE2, entered service (pictured). The lecture was attended by over 300 guests in the city chambers and a welcome was given by the Depute Lord Provost Bailie Philip Braat. In fact, all our lectures have been well attended.

I had the pleasure of handing over a cheque for £3396 representing money raised at the James Watt Dinner for Glasgow Children's Hospital Charity at the Royal Hospital for Sick Children - ably supported by my grandchildren (pictured). I was also given a tour of the facility showing what the money is used for - very interesting and at times moving.

I hope you are able to relax and enjoy the festive fun and I look forward to seeing you at some of our lectures in the coming year.

Wishing you all the best for 2020

*David M. Westmore*

This year has already been very busy with the preparations for the Rankine Conference in July 2020, which will be held in celebration of 200 years since the great man's birth. The conference is shaping up to be an extremely successful event with over 100 papers submitted covering key areas of William Rankine's interests. There will be a public event on the morning of 27th



*(Scottish Engineering Hall of Fame Inductees at this year's James Watt Dinner: James Goodfellow, Naeem Hussain, James Watt (Portrait), Gordon McConnell and Hugh Gill)*



# FemEng in Rwanda 2019 and plans for 2020

FemEng in Rwanda is an innovative project to educate school children in Rwanda in the hopes to inspire them to pursue a career in STEM. A team of 6 female engineering students from University of Glasgow collaborate with 6 University of Rwanda students and 6 Rwandan high school graduates to deliver engineering-based workshops. The team created 5 workshops; Mechanical, Biomedical, Civil, Computer and Software and Mining Engineering and embarked on 12 school visits in Rwanda, reaching over 3600 school pupils from age 7-18 in order to teach them more about STEM subjects through these interactive workshops, with over 6500 pupils reached throughout the projects 4 year duration. We are optimistic that the results of this project will have a significant impact on the future of STEM in Rwanda.

We expanded our visits to Rwandan based companies, which



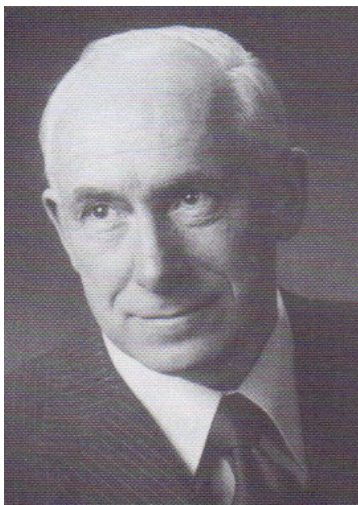
gave the team an extremely useful insight into industry. This was an amazing experience for the team as they experienced the unique opportunity to learn about women in different fields of engineering and their



journey towards success. We visited Zipline, a company who develop drone technology to deliver blood and medical supplies to remote hospitals; FarmPal, an entrepreneurial start-up which is a digital agriculture platform; Bridges to Prosperity, a non-profit which aims to eradicate poverty in communities caused by rural isolation; MASS Group, a architecture and construction firm which encourages the use of local and environmentally friendly materials to build schools, hospitals and universities across Rwanda. It was extremely important to us that all these companies encourage the importance of women in STEM, with some having more than 50% of women in their teams!

We are happy to say that the society created by the Rwandan team, FutureYou will continue to embark on STEM outreach visits in our absence. FutureYou will be particularly important in reaching a younger generation, especially those in impoverished areas as we face a language barrier which is fairly difficult for us to overcome. We are confident that we will be able to support FutureYou and continue to offer guidance on how to develop these outreach opportunities.

## Mr William Scrymgeour Ross



**1st July 1923 – 22 August 2019**

Bill had been a stalwart of the Institution for many years and it was with sadness that we heard of his passing earlier this year.

Bill was born in Forfar and studied at St Andrews University, located in University College in Dundee. He enjoyed the connection of studying in the same location as the famous Robert Watson-Watt.

Bill had a varied career; starting as an apprentice with British Thomson-Houston, in 1961 he started to work for AEI Turbines and enjoyed overseas trips to support customers in Australia, Canada, Germany, South Africa and USA. He recalled his experiences in South Africa later to friends and his deep dislike of the apartheid regime. In 1969 Bill moved to GEC Turbine

Generators, it was with this company where he developed his lifelong interest in power systems. In 1973 Bill joined Yarrow's shipbuilders in Glasgow and stayed there until his retirement. Bill was an early member of the IESIS Energy Strategy Group until his mobility stopped him attending meetings. Always ready with shrewdly observed comment or witty anecdote few could forget Bill's recounting of the dilemma facing power station bosses when faced with the prospect of a great British hope in a World title boxing match being broadcast from the states to the UK after midnight and was expected to last a couple of hours. Lighting, heating, tvs .... kettles boiling - how would they gear up for such an event? How could they manage staff and resources to cope with such unusual demand early in the morning? Calculations were made, predications were made, staff were brought in, the system was geared up.....and the contender was knocked out early in the first round!

Bill will be remembered as a great supporter of our Institution, he joined in 1974, he served on Council for the best part of 30 years, he contributed to meetings and committees and was recognised for his contribution with the Sir Robert Easton Award in 2013. Bill was an engineer who gave something back to the profession.



Gordon McConnell (b. 1951) aeronautical engineer. Gordon McConnell was the chief engineer of Airbus 2007-14 who delivered the Airbus 350



John Scott Russell (1808-1882), naval architect and shipbuilder. He was a polymath who advanced the science of naval architecture, sometimes at great personal cost.



Mary (Molly) Fergusson (1914-1997), leading consulting engineer, first woman Fellow of Institution of Civil Engineers. Molly reached the top of her profession in consulting engineering: the pioneering woman of her field.



William Murdoch (1754-1839), mechanical and gas engineer, Boulton & Watt partnership. William was an engineering genius who contributed greatly to the success of Boulton and Watt.

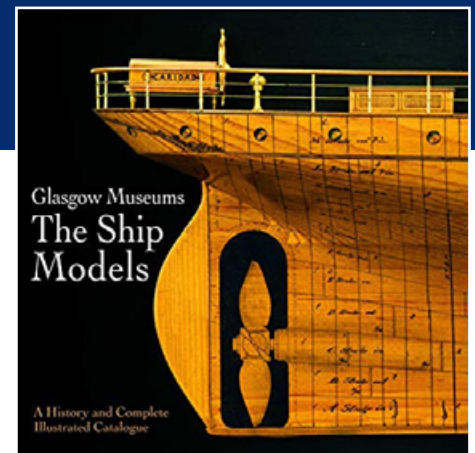
## Ship models: New catalogue charts Glasgow Museums collection

Emily Malcolm, who recently showed IESIS members around the facility at Glasgow Museums Resource Centre, has spent more than a decade working on the first fully illustrated record of all 676 ship models held in the Glasgow Museums collection.

Gathered across 150 years, the models represent ships built on every part of the Clyde. There are famous ocean liners, such as Cunard's three Queens – Mary, Elizabeth and QE2 – as well as river steamers, tea clippers, oil tankers, yachts, battleships, dredgers and tugs. Glasgow Museums: The Ship Models – A History and Complete Illustrated Catalogue, showcases a fascinating heritage and shines a spotlight on the craftsmanship and skill of the model makers.

"There are two purposes for ship models," says Malcolm. "One is to design the ship in the shipyard. The other is to be sent to an exhibition so that people will see it and marvel at this new ship. Models were also commonly found in booking offices."

Available from the Riverside Museum and by emailing [orders@booksource.net](mailto:orders@booksource.net)



## JWD 2019

Over 320 guests enjoyed a wonderful evening of good food and good company. Guests enjoyed the acceptance speech of Gordon McConnell as a 2019 Hall of Fame inductee. The formal part of the evening was completed with a sparkling performance from two young musicians from the Royal Conservatoire of Scotland, Jocelyn Pettit (pictured) and

Calum McIlroy which included a delightful display of step-dancing. This year our chosen charity was the Glasgow Children's Hospital Charity (GCHC) generous support raised £3396 on the night!



# Lecture Programme and Venues for 2020

## How can we build economically viable grid-scale energy storage?

**Win Rampen**

Chair of Energy Storage at the University of Edinburgh

This talk will explore the problems and possible solutions of energy storage. There is a severe mismatch between de-carbonised generation - most of which cannot be scheduled - and instantaneous demand on the electricity grid. Win's vision is to replace conventional power stations with a network of storage facilities, which can aggregate and be used to smooth non-firm renewable energy while also providing distributed back-up generation. Win launched SynchroStor in 2018 to develop and commercialise grid-scale pumped heat energy storage. He is a co-founder of Artemis Intelligent Power Ltd, an engineering R&D company that spun out of the University of Edinburgh in 1994.

18.00 for 18.30, Room 301, McCance Building, 16 Richmond Street, Glasgow, G1 1XQ

**Tuesday 14th January 2020**

Joint meeting with IMarEST

## Engineering on the buses - technical developments in the bus industry

**Jamie Wilson**

Head of Concepts & Advanced Engineering Alexander Dennis Limited

Jamie Wilson will describe the challenges and innovations that have faced bus builder Alexander Dennis Ltd in recent years in seeking to support the road to zero emissions. Alexander Dennis is Britain's biggest bus builder and the world's largest manufacturer of double decker buses. The bus industry punches well above its weight in terms of product and technology development, while facing the introduction of Low Emission Zones, the demand for 'greener' buses and a host of other features demanded by customers. Despite the challenging backdrop of a decline in passenger journeys, Alexander Dennis has grown every year from around £90M in 2004 to an expected £1b turnover in 2022.

18.00- 18.30 Room 301, McCance Building, 16 Richmond Street, Glasgow, G1 1XQ

**Tuesday 11th February 2020**

## Get your hands off my digital assets! Cyber security in 2020

**Dr Natalie Coull**

Head of Division of Cyber Security in the School of Design and Informatics, Abertay University

This lecture will explore how the public and businesses can protect themselves and their assets in a digital world. It will look at threats, defensive actions and what we are likely to face in the future! Dr Natalie Coull has research interests in secure coding, digital watermarks and computer memory-based security concerns. She is interested in exploring the role of computer games in cybersecurity training, in collaboration with a leading strategic consultancy company in security and public safety. Natalie is actively engaged in outreach, including promoting female participation in cybersecurity and supporting initiatives to address the skills gap on cybersecurity.

18.00 for 18.30, Room 301, McCance Building, Richmond Street, Glasgow, G1 1XQ

**Tuesday 10th March 2020**

## What's coming down the tracks for Scottish railways? Engineering a transformation of the network

**Alex Hynes**

Managing Director, ScotRail Alliance

This talk will examine the engineering challenges of modernising a largely Victorian railway, taking account of sustainability and environmental concerns. How can engineering help to improve the experience for passengers? What are the future aspirations for the service and what part will engineering play? Alex Hynes has 20 years of rail industry experience. He took on his current role as managing director of the ScotRail Alliance in 2017, a role which has been described as one of the most pressurised, high profile jobs in the railway industry.

18.00 for 18.30, Room 301, McCance Building, Richmond Street, Glasgow, G1 1XQ

**Tuesday 21st April 2020**

Joint meeting with RINA

## AGM 17.45 -18.00

## Celebrating the life and legacy of William MacQuorn Rankine

**Various speakers**

Head of Concepts & Advanced Engineering Alexander Dennis Limited

In celebration of the genius of William John MacQuorn Rankine and to mark his 200th birthday we have a sparkling programme of interesting, short lectures which will describe life in Glasgow in the 1850s and Rankine's impact on engineering science, education, thermodynamics, civil engineering, metallurgy and shipbuilding. Professor Rankine was the first president of IESIS. This is a public event which will be an introduction to the Rankine 2020 International Conference [www.ior.org.uk/events/rankine2020](http://www.ior.org.uk/events/rankine2020). The lecture will be held in the beautiful Bute Hall at the University of Glasgow on the morning of Monday 27th July 2020. It will be free but registration is required – registration will open on 1st April 2020 [www.iesis.org](http://www.iesis.org)

Monday Morning, The Bute Hall, Gilbert Scott Building, University of Glasgow, Glasgow G12 8QQ

CPD certificates will be available on the evenings

**Monday 27th July 2020**



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