The call for nominations for the posts of President Elect and Professional Development Director on the INCOSE UK Council closed on the 14th September 2020. Both roles went uncontested and we are delighted to announce that Malcolm Thomas has been appointed as President Elect and Steven Turner has been appointed as the Professional Development Director. Both roles will be officially appointed into the respective roles at the AGM in November.

Their personal statements can be read on page 2.

As yet, no candidate has come forward to apply for the Assistant Director for Events role. The Council will be discussing the appointment for the role at the next meeting on Thursday 3rd December.

If you are interested in applying for the role, the Terms of Reference can be found here, and the application form can be found here.

Please send your completed application form to the INCOSE UK Company Secretary.
INCOSE UK Council Elections

Both posts were uncontested. The successful candidates will not start in their role until after the AGM on November the 16th.

President Elect - Malcolm Thomas

I have been involved in Systems Engineering for over 30 years and have worked in most of the lifecycle stages from early requirements development through to operations and through life support.

After 20 years in Aerospace / Defence I made the leap to the Rail industry where I have continued to develop my SE skills over the last 19 years. I joined INCOSE in 2010 and have been the UKAB Point of Contact for WSP since 2013.

In my role as the Technical Discipline Lead for Systems Engineering within WSP UK I am responsible for the quality, capability and the management of the competency of our systems engineers. My team in WSP specialises in the integration of the large complex rail programmes through the application of systems thinking. We have developed a suite of processes and tools that enable us to present complex information to stakeholders in easily understandable formats, allowing them to make better informed decisions. As the use of Systems Engineering is maturing in the rail industry, we are incorporating MBSE techniques into our methodology to provide increased rigor to our approach without it impacting the accessibility of our outputs to the stakeholders we deal with.

I am a firm believer in and advocate of “Pragmatic Systems Engineering” and that tailoring the approach to suit the stakeholder needs is the key to success in gaining acceptance of the benefits that Systems Engineering can deliver.

My vision for INCOSE UK is continue along the path established by the recent Presidents in establishing Systems Engineering as a “mainstream engineering discipline, fully engaged with the Engineering Council and a respected voice at key decision-making forums.

Steven Turner - Professional Development Director

I am Steve Turner CEng CSEP and I would like you to consider voting for me as INCOSE UK’s Professional Development Director.

As an Engineering Consultant I have been fortunate to work as a System Engineer on some of the UK’s biggest infrastructure projects, including Heathrow T5, Thameslink, The Greater West and HS2. My career has also afforded me opportunities to work internationally and present at INCOSE International Symposium and ASEC.

At WSP, I am a Technical Discipline Leader for the System Engineering and Integration team where I am principally responsible for raising our people’s individual competency and the team’s capability overall. My objective has been to increase the number of people in the team with a formal System Engineering qualification and for System Engineering to be widely recognised as a professional technical discipline. I strongly believe that System Engineering is a fantastic career and a valuable skillset and I am passionate about raising the standard for all. As part of this I have mentored a number of engineers through their Professional Registration, initiated a rolling programme of Level 7 System Engineering apprentices, coached staff through their SEPS exam and worked to establish strong links with partners in academia. I believe our team of 65+ system engineers in WSP are amongst the most qualified operating in the transport infrastructure sector currently.

The present and past INCOSE UK council members have worked hard and done a tremendous job in gaining Licensed Membership of the Engineering Council, allowing INCOSE UK to award CEng, IEng and EngTech status to its members. This is another big step forward for System Engineering being recognised in its own right as an engineering technical discipline. This is a very exciting time to be a practicing system engineer! I would like to offer my skills and experience to the INCOSE council and help to promote ongoing Professional Development across INCOSE UK members and extend the influence and interests of INCOSE UK to the Engineering Council and affiliated institutes.

ASEC 2020

Booking is open.

This year’s conference will take place on 17 and 18 November 2020 with presentations being streamed live in an interactive virtual environment.

Access to the event portal will remain open to delegates until mid December.

Registered delegates will receive their log-in credentials and user guide for the virtual portal from the beginning of November 2020 in preparation for the event.

This event gives a platform for our presenters and practitioners to provide engaging content as they explore the theme ‘The Challenges of Contemporary Systems Engineering’.

Keynote Speakers Announcement

We are pleased to announce the two Keynote speakers at this year’s Virtual ASEC 2020.

Dr Nira Chamberlain

Dr Nira Chamberlain will be giving this year’s M’Pherson Lecture of the Top 100 Most Influential Black, Asian and Minority Ethnic leaders in the UK’s Tech.

He has two mathematical doctorates and is also listed by the PowerList Top 100 Most Influential Black Person in the UK for three years running (2018-2020). In 2018, he was the winner of the Big Internet Math Off title – World’s Most Interesting Mathematician, which was an invited international mathematical communication tournament and voted for by the general public.

Listed by the Science Council as ‘one of the UK’s top 100 Scientists’, in 2015 he joined the elite list of distinguish mathematicians who featured in the biographical reference book Who’s Who.

Currently working for SNC-Lavalin Atkins as a Principal Consultant, he has over 25 years of experience in writing mathematical models/simulation algorithms that solve complex industrial problems in industrial sectors such as the defence, aerospace, automotive, retail and energy. This has included periods in France, the Netherlands, Germany and Israel.

Dr Nira Chamberlain PhD HonDSc is the President of the Institute of Mathematics and its Application (IMA) and is a Visiting Fellow of Loughborough University Mathematical Sciences Department. In 2019 the Inclusive Tech Alliance named him as one
Dr. Ronnie S. McKenzie

Dr. Ronnie S. McKenzie will be giving this year’s Arnold Lecture.

Ronnie is well known as a specialist in the fields of Water Demand Management, Hydrology, Water Resource Planning and Systems Analysis, with more than 30 years of experience in these fields. He has been involved in the analysis of many large water resource systems, particularly in Southern Africa where he is currently based. He was a key member of the Vaal River System Analysis team which pioneered the water resources systems analysis techniques now used throughout South Africa and numerous other countries. He also developed Leakage Benchmarking software for the South Africa Water Research Commission as well as the Australian Water Supply Association and the New Zealand Water and Waste Association.

In the past few years, Ronnie has initiated several large leakage reduction projects throughout South Africa including the Khayelitsha Advanced Pressure Management Project and the Sebokeng/Evaton Advanced Pressure Management PPP, both of which won several national and international awards for technical excellence (SAACE, SAICE, IWA and IMESA). He was responsible for the development and presentation of many training courses in Water Resource Systems Analysis and Water Demand Management and has personally presented more than 50 courses throughout South Africa as well as in Ethiopia, Brazil, Australia, Puerto Rico, USA, New Zealand, Namibia, Botswana, and Lesotho. He is a fellow of the SA Institution of Civil Engineering, IWA and WISA and is a past Chairman of the IWA Water Loss Specialist Group.

Water Master Plan and the verification of the Lesotho Highlands hydrology for royalty calculation purposes.

He has developed and presented more than 100 papers, courses and workshops in many parts of the world, and was responsible for introducing the internationally recognised Burst and Background Estimate (BAE) water demand management techniques to South Africa and numerous other countries. He has published numerous papers in many parts of the world and has written textbooks on Water Demand Management and Water Supply Planning and Management.

In conclusion, Ronnie’s knowledge, passion and tenacity led the department into a position of intellectual leadership in applying Systems Thinking.
As President of INCOSE UK, Kirsty Akroyd-Wallis welcomed everyone, highlighting the importance of diversity to enable innovation in the sector. By bringing together varied experiences and world views, diverse teams are likely to achieve higher levels of innovation, and greater levels of risk reduction in projects and programmes through greater diversity of thinking and experiences, making the performance of our work stronger and better.

Joining Kirsty in the discussions were Professor Emma Sparks, Head of Centre for Systems & Technology Management at Cranfield University, Serrie Chapman, Director of Women’s Tech Hub Bristol, Matthew David, INCOSE UKAB representative and Equality Champion at HMGCC and Sam Williams, System of Systems Policy Assistant Head at Ministry of Defence and STEM Ambassador. Panelists all agreed that greater efforts needed to challenge the status quo.

Professor Emma Sparks’ presentation on “Thinking skills for effective leadership” was a great insight. Emma’s approach to all aspects to diversity starts with the way we think. “For me this is about the way we think and how we apply that thinking in decision making as leaders”. She took us through some concepts and approaches that can support greater diversity and a culture of equality.

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We also heard about the value of women’s support network by Serrie Chapman, the Co-founder and Director of Women’s Tech Hub in Bristol. Drawing on her experience with over 20 years in the engineering field, Serrie was acutely aware of the lack of female representation in conferences and leadership and the barriers that preventing women to network and progress in their career. In 2015 Tech Hub was born with the aim to improve the gender balance in the industry through networking, workshops, careers fairs and careers support. The Hub is hugely successful and they are hosting regular meet-ups, workshops and provide career advice and mentoring for women.

In discussions about their own experience, the panelists agreed that, despite a growing consensus on the need for gender parity, there is a long way to go before it is achieved in the profession. We need more solutions to break down barriers such as balancing a career with family arrangements, the shortage of inspirational leaders and role models, and the need for leadership training programmes and mentoring for women. As Kirsty said: “We were asked some really great questions, one of which was ‘Is it a requirement to have a mixed panel for assessing Chartered Engineers. I suddenly realised that I am the only female assessor available to INCOSE UK. I am the only female mentor available to our registrants. I hadn’t noticed being the only woman in the room at the meetings, I’m so used to it that I have grown comfortable with that normality. This must change and I will be making what changes I can.”

As he wrapped up the event, Chris Lamb, Outreach Director for INCOSE UK and Managing Director of Optima Systems Consultancy, thanked the audience and panels for attending the event and for the liveliness and depth of dialogue and the level of insight provided.

He is also committed to keep striving for equality. “INCOSE UK intend to build on this by instigating what I hope becomes a fully fledged programme, with the help of our Council, UK Advisory Board and volunteers. Kirsty and I have already spoken with Royal Academy of Engineering about the toolsets and support they offer to Professional Engineering Institutes, which we will draw upon. Our next step is a workshop with Council and UK Advisory Board next month. We intend that further events of the sort we held in September will feature again in our activities next year. Most importantly, we will need action from you all, at your respective levels, to accelerate the change.”

You can access the recorded presentations here.
In a joint paper compiled by the NEPC, over 40 engineering organisations representing more than 450,000 UK engineers call for the government to invest in its proposed actions to help decarbonise the economy, and create a national workforce planning strategy to create jobs and spread opportunities more evenly across the nation. It says the UK could position itself as a market leader in low carbon technologies. But achieving net zero carbon emissions depends on a resilient infrastructure system – the net zero and resilience agendas must be achieved together.

INCOSE UK President, Kirsty Akroyd-Wallis said: “INCOSE UK are delighted to be a partner of the National Engineering Policy Centre (NEPC) paper containing recommendations related to the Government’s 2020 Spending Review. We feel that addressing the challenges in engineering a resilient and sustainable future requires cross-government action, and are proud to have been involved with the development of the key priorities to begin this.”

The 2020 Spending Review is one of the most important in a generation, coming at a time when the UK is in recession and the impact of the pandemic has increased inequality. Careful and considered decisions must now be made about physical and digital infrastructure in order to drive economic recovery and provide skilled jobs. The paper calls for long-term evidence-based infrastructure to be addressed, with individual regions being given the freedom to create infrastructure strategies. It also recommends building world-class digital connectivity and infrastructure that is fast, secure, and resilient enough for an advanced digital economy.

Key actions for government recommended by the paper include:

- **Education**: Address the long-term UK skills challenges across all sectors through the creation of a national workforce planning strategy. Support this with a new evidence-based STEM education strategy to address issues such as chronic shortages of physics, mathematics, computing and technology teachers and diversity challenges in STEM subjects.
- **Education**: Ensure long-term funding sustainability of high-cost, laboratory-based subjects in further and higher education. Boost the number of people completing higher technical qualifications and engineering apprenticeships, which have flattened over the past five years.
- **Infrastructure**: Incentivise offsite manufacturing for new projects and low-carbon retrofitting for existing buildings to improve efficiency and reduce carbon emissions.
- **Digital**: Invest in broadband and 5G to support an advanced digital economy and expand the Made Smarter pilot to support small businesses across the UK to upskill, adopt digital technologies and create new supply chain opportunities.
- **Innovation**: Make the UK more attractive for businesses to invest in R&D here through funding mechanisms and joint ventures between government and industry and increase innovative UK’s budget and freedom on how they spend it.
- **Energy**: Invest, at the scale needed to trigger transformational change, in low carbon heat technologies, carbon capture, usage and storage, low-carbon hydrogen production and nuclear generation capacity.

You can read the full paper and the open letter which was sent to the Chancellor, by visiting The Royal Academy of Engineering website.

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**Professional Registration Online Sessions**

Have you considered registering as a Chartered Engineer (CEng), Incorporated Engineer (IEng) or Engineering Technician (EngTech)?

INCOSE UK offers a route to **Professional Registration** for Systems Engineers, and we are accepting both new applications and transfers now.

In order to provide information and guidance, we have set up a series of interactive Professional Registration Zoom sessions. These sessions are open to all potential candidates and there is no requirement to be a member in order to attend. The following sessions are available to book.

**Dates:** 11 November 2020, 16 December 2020

**Times:** 12:00 - 12:45

**Location:** Zoom - Link will be provided to confirmed attendees

The sessions are 45 minutes long and will include:

- **An overview** from Kirsty Akroyd-Wallis, President of INCOSE UK and experienced assessor, interviewer and mentor
- **Practical information** on the process and how to apply from Lynn Davis, Professional Development Manager
- **An insight** into the process from the applicant’s perspective from a recent INCOSE UK registrant
- **Question and answer** session

The session is designed to give applicants an overview on Professional Registration with INCOSE UK and equip them with information to begin a draft application.

To book a place for you or a colleague, please send us an email.
**Certification**

**Systems Engineering Professional Certification**

We would like to send congratulations to the following who have attained ASEP, CSEP and ESEP since the last ePreview.

Members listed have given their consent to be published.

- Rob Gabrielszky
- Matthew Harrison
- Paul Omerod
- Matthew Potts
- James Tewers
- Steve Watkin
- Anthony Pont
- Karl King
- Thomas Westbury
- Josue Vivas
- Anthony Pont
- Karl King

**ASEP:** Carl Prewett, William Burnham, Niel Joseph and David Foggie

**ESEP:** Andrew Fyfe

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**SEP Exam**

In order to gain ASEP or CSEP accreditation it is necessary for INCOSE UK members to pass the certification knowledge examination.

The date for the next exam is:

**Date:** Thursday 26th November 2020
**Time:** 10:00 Start. Registration from 09.30
**Venue:** Parish Hall, Ilminster, TA19 0DG

More information regarding the exam, including booking fees, can be found here.

For more general information on the Certification Process with INCOSE UK download our U1 – guide to Professional Certification here.

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**“I’m a Systems Engineer and I do”**

**Matt Potts**

We asked Matt to contribute to our “I’m a Systems Engineer and I do” feature.

Matt started to recognise the importance of Systems Engineering as a key influencer in defence capability during his time as an Engineering Officer in the Royal Air Force.

Matt says “As a systems engineer, I can provide a valuable perspective to organisations delivering digital transformation and complex projects and programmed using the techniques, processes and skills of he field. This systems perspective, that spans the micro and macro, the technical and the enterprise, can deliver considerable value to organisations and allows me to exert a differential influence, far above what I feel I could offer if I had stayed within a more narrow engineering field.

The full feature can be read here.

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**Systems Engineering Foundation Training**

Learn about the principles and practices of systems engineering including an overview of the processes required for successful systems engineering project delivery. Registration is now open for the following United Kingdom (UK) dates:

- 09-10 February
- 27-28 May
- 21-22 September
- 07-08 December

**Systems Engineering Preparation Training**

For those working towards the International Council Of Systems Engineering (INCOSE) Certified Systems Engineering Professional (CSEP) accreditation, our preparation course is specifically designed to prepare you to confidently sit the examination. Registration is now open for the following UK dates:

- 08-12 March
- 14-18 June
- 13-17 September
- 13-17 December

We take a flexible approach to the delivery of our training courses and we can deliver training on customer site for multiple delegates. For more information and to secure your place visit: https://bit.ly/2RwVcmA

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**2021 SYSTEMS ENGINEERING TRAINING**

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