

Science Leadership Dynamic Roadmap

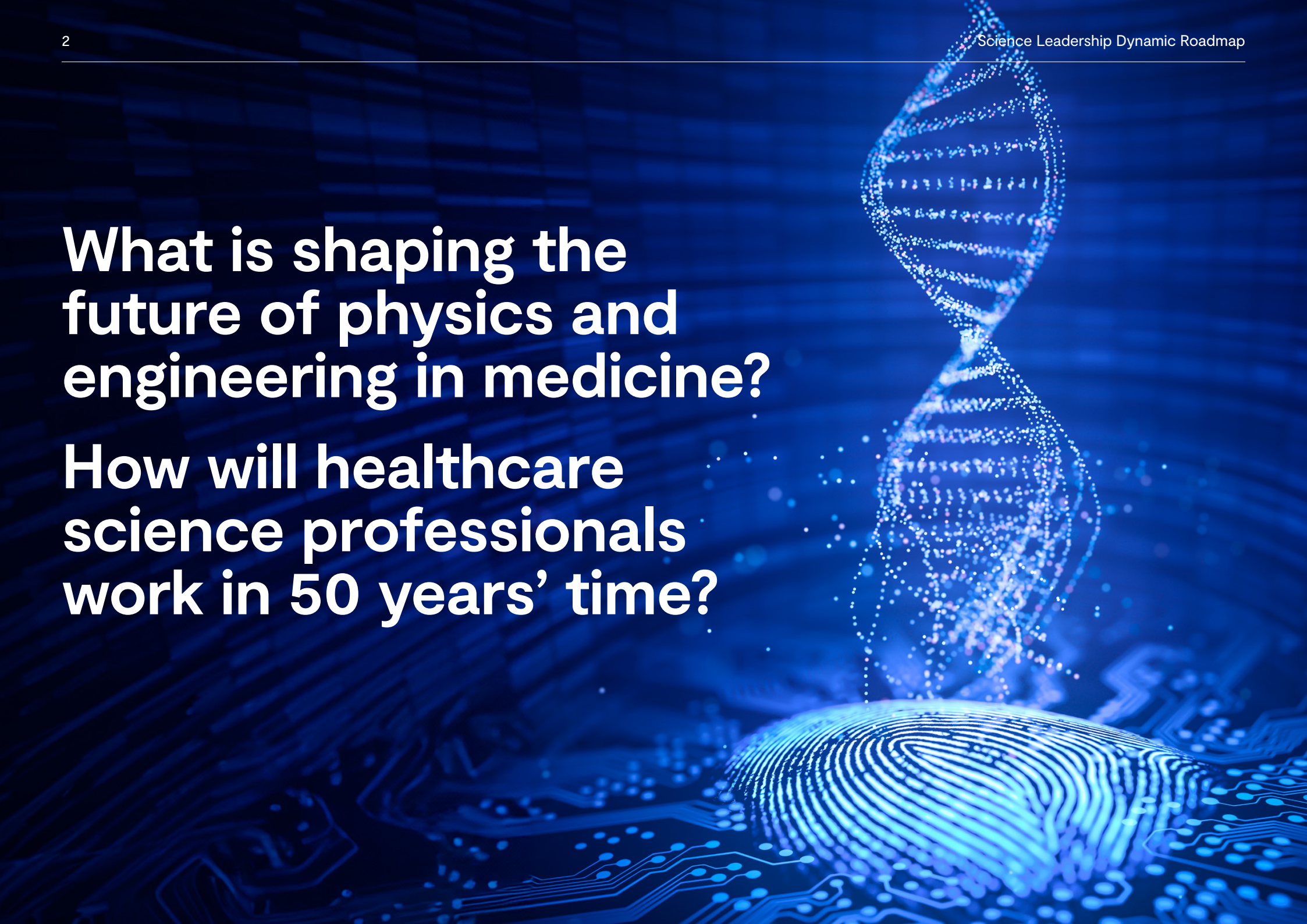
IPEM

Institute of Physics and
Engineering in Medicine



What is shaping the future of physics and engineering in medicine?

How will healthcare science professionals work in 50 years' time?



In 2022, IPEM published the Science Leadership Strategy. Its purpose is to enable IPEM to take a proactive approach to the future of physics and engineering in medicine, by understanding and responding to the grand challenges and emerging trends that will shape our long-term horizon.

Grand Challenges

1

Clinical Safety and Security

Includes topics such as AI, cybersecurity, resource scarcity and emerging data and techniques. IPEM actively engages in substantial efforts aligned with this Grand Challenge. This includes the publication of esteemed reports and papers focusing on technical and workplace safety, alongside the establishment of a dedicated AI group.



2

Climate Change and Sustainability

Covers aspects such as decarbonisation in healthcare, sustainable initiatives and the potential of changing disease patterns due to climate change effects. IPEM currently incorporates this Grand Challenge into its activity by providing funding to carbon footprinting studies, collaborating with external organisations and an active Environmental Sustainability Group which effectively tackles this Grand Challenge.



3

Workforce and Skills

Encompasses workforce challenges such as workforce shortages, multi-disciplinary working and skill mixes. IPEM has an active Workforce Intelligence Unit which gathers and disseminates data on the make-up of the Medical Physics and Clinical Engineering workforce. This data is used for IPEM to actively lobby to funding bodies. IPEM also provides dedicated training and educational resources to enhance our members' skills and facilitate professional development.



Emerging Trends

Personalised Health

Smart Digitisation

Alignment and Collaboration

On 29th September 2023, more than 70 IPEM members and staff came together at the Science Leadership Day in York to guide our response. Their ideas are summarised here.

We also want to know what you think IPEM can do to support you in your future. How do you think these issues can be tackled?

Let us know your thoughts by clicking [here](#) or scan the QR code for a chance of winning a £50 gift voucher!



Science Leadership Day Volunteer outputs

Empower our future members

Lobbying to educational institutions to influence training curricula to incorporate the Grand Challenges, with a particular focus on AI and climate change. Doing so will ensure that the future workforce is robust and has a comprehensive skill set so that all Grand Challenges can be effectively tackled.

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Persistent foresight exploration

Create an IPEM panel of 'futures thinkers' to actively horizon scan for future challenges and collaboration opportunities. This will provide an enhanced skill mix for our members, in addition to identifying breakthroughs in Clinical Safety and Security, and Climate Change and Sustainability.

1
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Amplify our connections

Further expand existing collaboration with external organisations with a particular focus on industry. This will enable innovative collaborations that can facilitate breakthroughs in Clinical Safety and Security and Climate Change and Sustainability.

1
2

Advocacy and unity

IPEM actively undertakes significant lobbying activity, particularly in workforce and resource scarcity issues and utilises relationships with other professional bodies and organisations. Our volunteers presented ideas around how we can expand on this.

Incentives and motivators

IPEM currently offers a range of monetary incentives to reward significant contributions to healthcare, academia and industry, in addition to providing a plethora of CPD opportunities. Our volunteers shared their insights on advancing these initiatives.

Reward meaningful innovations

Review the existing prizes, awards and grants portfolio to actively reward work that aligns with the Grand Challenges. For example, providing awards for sustainable initiatives or safe implementation of new techniques.

1
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Identification of mutual benefits

Strategically linking IPEM volunteer efforts to professional practice competencies or CPD efforts to streamline activity. This will enable new innovations and advances in best practice to be published in a timely manner, whilst also enhancing the skills of our members.

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Diversify volunteering opportunities

Offer a broader array of volunteering opportunities for IPEM members to join, providing them the chance to acquire desired CPD or skills without committing long-term.

3

What do you think IPEM can do to support you in your future?

Tell us your thoughts [here](#) or scan the QR code



Science Leadership Day Volunteer outputs

Inspire the aspirational

Expand existing outreach activity to inspire anyone from any background. This will allow us to engage with our future trainees, colleagues and service users.

3

Broaden publication horizons

Diversify our publications to be accessible by a range of audiences, resolve duplication of work and improve consistency. In particular, to focus on white papers and sharing best practice for clinical safety and sustainability.

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Empower through transparency

Improve communications around existing work being undertaken by IPEM committees, in particular on common topics such as AI and sustainability. This will enable transparency and identify areas of overlap and collaboration.

1

2

Connection and interaction

IPEM has existing outreach resources and an active range of publications utilised by both members and non-members. Our volunteers suggested how we can develop this work to have further impact.

Developing the professional

IPEM currently offers a range of successful training and educational resources, and our volunteers presented ideas on how we could grow it further.

Support career progression

Further align training and educational resources to provide supplementary learning for self-led qualifications (e.g. MPE and HSSR), to support our members in completing further education and developing their career and skills.

3

Enable career mobility

Continue to develop interdisciplinary training & education which will facilitate career mobility between academia, industry and the clinic. For example, training for writing grant applications or business cases, allowing direct skill transfers between all of our members.

3

Empower effective communication

Provide senior IPEM volunteers (such as VPs and SIG chairs) with training on communication - in particular communicating to influence. This will not only expand individual skill mix, but will enable effective communication regarding all three Grand Challenges.

1

2

3

What do you think IPEM can do to support you in your future?

Tell us your thoughts [here](#) or scan the QR code



With thanks to:

The speakers:

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The participants:

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