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UKRI Engineering and Physical Sciences Research Council

Approved minutes of the Council meeting held at BT, Adastral Park on 5 – 6 July 2023

- Council Members: Professor Mark E. Smith (Chair)
Professor Miles Padgett
Professor Alison Etheridge
Professor Deborah Greaves
Professor Nick Jennings
Professor Dame Jane Jiang
Ms Siân John
Dr Joe de Sousa
Professor Tim Whitley
Dr Peter Williams (from dinner on Day 1)
Professor Andy Wright (except 13:00-14:00)
- Observers: Mr Alex van Someren (from dinner on Day 1)
- Executive: Dr Andrew Bourne
Professor Jonathan Dawes
Ms Helen Morgan (Item 6-7 only)
Ms Jane Nicholson
Dr Kedar Pandya
Dr Neil Viner
Dr Samantha Francis (Items 1 and 8-12 only)
Dr Lucy Martin (Item 10 only)
Dr Derek Craig (Item 11 only)
Dr Ruth Kelman (Item 11 only)
- Others: Ms Siobhan Peters (Items 6-13 only)
Dr Neil Robinson
Dr Glenn Goodall
Ms Maria Cuevas (Item 9 only)
Mr Fraser Burton (Item 9 only)
Professor Ben Azvine (Item 9 only)
Mr Paul O'Brien (Item 9 only)
Mr Peter Brady (Item 9 only)
Mr Paul Graham (Item 9 only)
Dr Detlef Nauck (Item 9 only)
Ms Lisa Perkins (Day 1 only)
Ms Carol Fletcher (Day 1 only)
- Secretariat: Mrs Beth Amer
Ms Tracy Keys
Ms Kerry-Anne Young

1. Day One Tours and Talks

- 1.1 BT hosted the first day of this EPSRC Council meeting. Delegates received a welcome talk from Lisa Perkins, Director for BT at Adastral Park. Attendees received tours of BT's Adastral Park site. The tours included the Network Operations Centre, Sirius House (BT's research and innovation showcase centre) and the Robotics and Drone Lab. BT provided a virtual tour of their facilities for colleagues with access issues.
- 1.2 Council thanked BT colleagues for their enthusiastic hospitality, knowledge, and willingness to engage. Council appreciated the preparation BT colleagues had undertaken to demonstrate the strength and depth of BT's engineering and physical sciences research. It

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was very helpful to see how BT collaborate with UK Universities and where EPSRC investments were supporting these collaborations.

Colleagues from BT and Oracle attended dinner with Council members and EPSRC.

2. Meeting Formalities

- 1.1 Apologies were received from Martin Schröder. Alex van Someren joined from dinner on day one. Siobhan Peter and Samantha Francis joined virtually on day two.
- 1.2 Council welcomed Miles Padgett as EPSRC's new Interim Executive Chair.
- 1.3 Council thanked Neil Viner, EPSRC's Chief Operating Officer, who was retiring after 35 years of service. Dr Viner was thanked for his extensive contributions to the Engineering and Physical Sciences research community.
- 1.4 Council congratulated Tim Whitley, who has been awarded an OBE for services to Communications Technologies and Scientific Policy.
- 1.5 There were no new declarations of interest from Council members. Declarations of interest for item 12 are listed in the relevant minute below.

3. Draft Minutes of the Meeting 3 May 2023

- 3.1 Council agreed with the record of the last meeting.

4. Actions and Matters Arising

- 4.1 There were four outstanding actions from the last meeting. Council noted those which were either completed or in hand.

5. Review of Day One

- 5.1 Council summarised day one of the meeting, thanking BT colleagues for providing interesting, engaging, and informative presentations which covered an extensive range of research topics. Council was impressed with the demonstrated breadth and translation of science, as well as the engagement and communication of the presenters. The diversity of the presenters demonstrated BT's ability to attract the best talent internationally.
- 5.2 During the tours, Council was interested to learn more about how modes of funding are used to support research with practical applications. Examples included New Investigator Awards and Centres for Doctoral Training, Knowledge Transfer Partnerships, Impact Acceleration Account projects, and Prosperity Partnerships. Council also valued discussing examples of theoretical science being converted into deployable real-world applications.
- 5.3 Council emphasised the importance of understanding the translational pathway for different industries. BT clearly demonstrated how this could be achieved and highlighted that group science, where researchers from different disciplines work together, is an important approach.
- 5.4 Council asked that BT colleagues be thanked formally for a highly interesting day.

6. Executive Update

- 6.1 Council was updated on the 16 May UKRI Board and Council SIM Meeting. During this meeting, the UKRI Board Chair reflected on the Tickle, Nurse and Grant Review outcomes

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and the remaining work to be done to address the respective recommendations. The refreshed Terms of Reference for Councils' Councils was discussed. There was a discussion on how UKRI fits into the wider government landscape. Finally, there was an update on the UKRI Operating Model.

- 6.2 Council was updated on the recruitment timelines for the substantive Executive Chair and Chief Operating Officer roles at EPSRC.
- 6.3 Council received an update on Trusted Research and Innovation. EPSRC is working with central government and UKRI to understand the relationship between Trusted Research and Innovation, the National Security Investment Act and EPSRC funding. **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.**
- 6.4 Council was updated on engagement and communication with the Department for Science, Innovation and Technology (DSIT) on semiconductors, telecommunications, the Future Compute Review, and the Foundation Model Task Force.
- 6.5 Council was given an update on Horizon Europe. Council noted the Pioneer Prospectus announced a Pulse of funding to catalyse activity and private sector co-investment. **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.**
- 6.6 Council discussed the Pioneer Talent Transitional Scenario, which identifies four key challenges the UK will need to address to meet the demands of a future-facing research and innovation workforce. **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.** Council welcomed the planning that is being done by UKRI and EPSRC colleagues and offered their ongoing support.
- 6.7 Council received an update on the CDT outline stage outcomes. They welcomed the support of EPSRC's Science, Engineering and Technology Board (SETB) in advising EPSRC on the portfolio balance. Council is aware that the scientific community is concerned about the reduced number of CDTs being funded and is aware that UKRI is currently looking to understand the future of talent and skills.
- 6.8 Council discussed the high-level, initial findings of the UKRI's 2023 People Survey. Council welcomes further updates on this, where appropriate, when more information is available.
- 6.9 Miles Padgett was welcomed as EPSRC's Interim Executive Chair. Having only been in post for a short time, Professor Padgett reflected that his initial priorities include engaging with EPSRC colleagues and furthering positive engagement with UKRI. He will also focus on communicating the importance of training and supporting and mentoring the next generation of researchers so that they can thrive in academia, the private sector, and other sectors.

7. UKRI Colleague Update

- 7.1 Siobhan Peters, UKRI's Chief Financial Officer, was welcomed by Council. An overview of a number of topics was provided to Council, including the upcoming Board and Executive Committee away day, the UKRI Operating Model and change programmes, EPSRC's positive support to the Trusted Research and Innovation Agenda and Horizon Europe. UKRI is recruiting a permanent Chief Data Officer and Chief Information Officer.

8. EPSRC Engagement Presentations

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- 8.1 Samantha Francis and Glenn Goodall of EPSRC updated Council on the portfolio of activities and investments in the Digital Futures Delivery Plan Theme. This included discussions on EPSRC's response to the National Semiconductor Strategy, an overview of Digital Research Infrastructure, and progress made on EPSRC's Delivery Plan ambitions in this area. Council highlighted the importance of security, privacy, and trust, noting that this area is linked with other areas outside EPSRC's portfolio. Council welcomed the investment in people, skills, and knowledge output but expressed concern about the overall level of investment in the area, given its significant importance to UK plc.
- 8.2 Council expressed its appreciation for the interesting and informative presentation.

9. Technologies Roundtable

- 9.1 A round table discussion was held between EPSRC Council and Executive and Adastral Park colleagues from BT and Oracle. This provided an opportunity to discuss the future of AI and telecommunications.
- 9.2 The discussion highlighted the following key points:
- AI and telecommunications are rapidly evolving technologies that are converging to create new opportunities for innovation and economic growth. The UK needs to invest in research and development to realise these opportunities. This includes funding for the development of new AI algorithms and applications and the development of new telecommunications infrastructure that can support AI-powered services. Funding for fundamental science by both the UK Government and industry was highlighted as important.
 - AI and telecommunications are complex technologies that require the expertise of researchers from a variety of disciplines. Academia, industry, and government must collaborate to ensure the most is made of these technologies. The UK needs to work with other countries to share resources and expertise. This will help to accelerate the pace of AI research and development.
 - Academia has a key role in AI research, but it needs to be highly engaged with industry. This will help to ensure that AI research is relevant to the needs of businesses and society. The KTP model was discussed positively, as it ensures researchers are embedded in industry.
 - UKRI is key to delivering skills and talent. Skills gaps in AI were discussed, with a focus on the need for people with skills in AI model building, data management, and system operation at scale. This includes understanding and applying machine learning algorithms, collecting and cleaning data, designing and implementing scalable architectures, and monitoring and troubleshooting systems.
 - The rapid pace of change in AI raises governance challenges. The UK needs to develop clear rules and regulations for AI research and development. It was also acknowledged that there is a need to address security risks associated with AI.
 - The convergence of AI and telecommunications presents several opportunities, such as improving the efficiency of telecommunications networks and developing new telecommunications-based services. However, there are also significant challenges, such as the need to balance energy efficiency with the increasing volume of data, which inevitably requires more energy.
 - The importance of NetZero was discussed, as AI is a very energy-intensive technology. As AI models become more complex, they require more energy to train and run. This is not only a major challenge for the environment, but also for business due to the associated costs and energy supply demands. Challenges highlighted included: developing a 6G network that focuses on energy reduction, investigating new ways to transport energy, and funding fundamental research on AI, which would be essential to understanding how AI can be used to optimise the efficiency of our energy grid and other energy-intensive systems.

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- 9.3 Professor Smith thanked Adastral Park colleagues for joining the session and providing insightful inputs and provocations for a rich and informative discussion.

10. UKRI Environmental Sustainability Strategy

- 10.1 Council was given an overview of the UKRI Environmental Sustainability strategy, including the progress made by UKRI and EPSRC. Council's advice was sought on where EPSRC should now prioritise efforts towards environmental sustainability.
- 10.2 **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.**
- 10.3 Council thanked colleagues and looked forward to a further focussed discussion later in the year.

11. International Update

- 11.1 Council's advice was sought on EPSRC's proposed key international partner countries and the planned approach to building stronger ties with these countries.
- 11.2 Council agreed with the approach and prioritisation for engaging key partner countries. **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.** Council recognised the excellent work done by colleagues to progress this area at a particular challenging time against the backdrop of wider geopolitical events, noting the extensive resource required. Council advised EPSRC colleagues to collaborate closely with UKRI colleagues wherever possible.

12. UKRI Infrastructure Fund Phase 3

Secretary's Note: For this item, declarations of interest were recorded for Professor Miles Padgett and Professor Deborah Greaves who have personal engagement in live bids currently being discussed for the Infrastructure Fund. Professor Miles Padgett and Professor Deborah Greaves did not actively participate with this agenda item. Professor Andy Wright and Professor Mark Smith also declared institutional conflicts of interests. Professor Martin Schröder was absent from the meeting.

- 12.1 Council had received an update on the ongoing operational costs of the EPSRC bids being prepared for the UKRI Infrastructure Fund for Round Three. This followed a previous discussion at the May meeting where Council endorsed the decision to proceed based on the science but requested further clarification on the ongoing operational costs.
- 12.2 **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.**

13. Any Other Business

- 13.1 Jonathan Dawes has taken on a Senior Responsible Officer role for UKRI's Trusted Research and Innovation Programme.

14. Next Meeting

- 14.1 The next EPSRC Council meeting will be held in Swindon on 4 October 2023.

15. **Minute not included as contains exempt material, at the time of publication, under the terms of the Freedom of Information Act 2000.**