**SSAC Meeting Wednesday 4 December 2013**

**National Museum of Scotland**

**Chambers Street, Edinburgh**

**Attendees:** Professor Muffy Calder (Co-Chair)

Dr Chris Masters (Co-Chair)

Professor Nigel Brown

Professor David Cumming

Mr Stuart Farmer

Professor Julian Jones

Professor Jon Oberlander

Professor Jason Reese

Professor Marian Scott

Professor George Salmond

Mrs Anna Milne SSAC Secretariat

Ms Clare Hicks Office of the Chief Scientific Adviser

Mr Douglas Brown, Office of the Chief Scientific Adviser

Professor Andrew Morris, Chief Scientist Health, Scottish Government (ex-officio member).

**Apologies:** Professor Ian Boyd, Dr John Brown, Professor Ian Diamond, Professor Jim Hough, Mrs Angela Mathis and Professor Louise Heathwaite.

**1. Welcomes and apologies:**

1. Professor Calder welcomed SSAC members to the meeting and gave apologies from Professors Boyd, Diamond, Heathwaite and Hough, Dr Brown and Mrs Mathis. She thanked Dr Rintoul, Director of the National Museum of Scotland for inviting SSAC to hold their meeting at the Museum.

2. Professor Calder noted that SSAC members would be joined during the meeting by Mr Russell, Cabinet Secretary for Education and Lifelong Learning and Dr Allan, Minister for Learning Science and Scotland’s Languages to discuss the Scottish Government’s White Paper and future research funding in Scotland. SSAC members took time to prepare for this discussion.

**2. Synthetic Biology Workstream Update**

3. Professor Calder welcomed Dr Mark Morrison to the meeting. She explained Dr Morrison had been appointed as a researcher to support the Synthetic Biology workstream. Professor Calder handed over to Professor Brown to update colleagues on recent activities of the group. Professor Brown explained that since the last SSAC meeting the group had appointed Dr Morrison as a researcher on the project and Professor Joyce Tait had also agreed to join the group. Dr Morrison gave a presentation on his activities since his appointment he reported that he had undertaken a literature review of the topic and organised a stakeholder workshop on 28 November at the University of Glasgow. Dr Morrison then went on to explain that the next steps in the project were to follow-up with individuals for clarification or further detail where necessary, direct engagement with NGOs, a further multi-stakeholder workshop in late January to present and discuss project findings to date and invite other viewpoints. He noted that his final report would be presented to the SSAC meeting in March.

**Discussion**

4. Professor Calder thanked Dr Morrison for his presentation and opened up the meeting for questions and discussion.

**3. SSAC report update: Science Education; enhancing support for Schools through collaboration. Presentation from Scott Bryce, Education Support Officer, Higher Education and Industry Links, SSERC**

5. Dr Masters welcomed Scott Bryce to the meeting. He explained that SSAC published its report Science Education: Enhancing the Support for Schools through Collaboration in December 2011. The main recommendation in that report was that SSAC recommend the creation of one or more industry/academic school liaison coordinator for science posts. This action was realised and Mr Bryce now holds that position. Mr Bryce is attending SSAC to update colleagues on his activities and progress to date.

6. Mr Bryce explained that he was a physics teacher and had taken this post as a secondment opportunity. He was based at the Scottish Schools Education Research Centre (SSERC) and that post was supported by Education Scotland, Scottish Universities through the Deans of Science and Engineering, SSERC, Learned Societies and industry bodies.

7. He explained that the objectives of the post were to:

* To map, evaluate and co-ordinate current schools engagement with Higher Education and Industry
* To map, evaluate and co-ordinate existing STEM Continuing Professional Development (CPD) activity offered by Higher Education and Industry
* To map and stimulate the use of learning support materials
* To contribute to the development and Interdisciplinary approaches to enhance the learning experience

8. Mr Bryce explained that Higher Education, Industry, Learned Societies, Researchers and creative others, can support the provision of rich experiences and contexts to help teachers to deliver an experience that will embed STEM curiosity, knowledge and skills into Scotland’s future.

9. He gave members an overview of his progress to date and provided a number of examples of the variety of work that is going on to support schools.

10. Mr Bryce commented that some activities were linked directly to the CfE Curriculum, which is beneficial to the schools. He suggested that his role can support with this to ensure that the work is pitched at an appropriate level.

11. Mr Bryce then went on to describe a number of projects which support the development of interdisciplinary learning, i.e. astrobiology summer school, smartphone microscope and a project where teachers anodise Titanium to make jewellery. He commented that there must be more examples out there that can showcase current research.

12. He concluded by summarising his next steps:

* Support for new qualifications including research and Biology teacher day working with Moredun and SSERC.
* STEM Map – Continue to investigate the benefits of this for the STEM Education community and the logistics of setting this up and maintaining it.
* Continued work on IDL materials – he suggested that he need more recognition of the role from HE/Research Institutes and Industry
* Setting up a Biology Teacher network.

***Discussion***

13. Dr Masters thanked Mr Bryce for his presentation and opened up the meeting to questions and discussion.

**4. Scottish Government White Paper on Independence and future research funding – Discussion with Mr Russell Cabinet Secretary for Education and Lifelong Learning and Dr Allan, Minister for Learning, Science and Scotland’s Languages**

14. Dr Masters welcomed Mr Russell and Dr Allan to the meeting and thanked them for the opportunity to discuss the White paper and future research funding in Scotland. Dr Masters reminded the Ministers that the SSAC had recently published its paper Science and Engineering in Scotland in the Independence Debate. The paper is a collation of views received by the SSAC from the Science and Engineering community in Scotland, intended to inform Ministers within the context of the current debate.

15. Dr Masters noted that most of the issues raised by the Science and Engineering community concerned future research funding. SSAC however would also like to hear from the Ministers what they see as the opportunities for Scottish Science in an independent Scotland. He further added that UK operates as a common research area and therefore Council would also be interested to hear how Scottish Government proposed to maintain and build on collaboration and current funding in an independent Scotland

16. Mr Russell thanked SSAC for the opportunity to hear the views of the science and engineering community. He noted that Scottish Government was looking for a strong and productive debate and the final decision on independence would be made by the people of Scotland. Mr Russell reported that the current Government has demonstrated its commitment to research. In an independent Scotland an SNP Scottish Government would protect free tuition fees for Scottish students and would continue to provide levels of public investment in university research that would enable our researchers and universities to remain internationally competitive. He further suggested that continued expansion of the sector, after independence, would be vital to achieving sustainable economic growth.

17. Mr Russell commented on future research funding and collaborative partnerships with the rest of the UK. He reported that the UK and other research funders benefit from the quality of the research undertaken in Scotland, our centres of excellence and infrastructure, and the lack of barriers to research collaboration. After a yes vote in the referendum this Government would seek to continue the current arrangements for a common research area and funding through established Research Councils and he suggested this would benefit both Scotland and the rest of the UK in supporting collaboration. He reminded colleagues that Scotland already contributes to the funding of the Research Councils through the UK tax system. Following a yes vote in the referendum, sensible negotiations with the Westminster Government would commence to ensure a fair funding formula for Scotland’s contribution based on population share but taking reasonable account of the fact that the amount of competitive research funding received by Scottish institutions from the Research Councils may fluctuate. He suggested that providing a direct contribution from the Scottish Government budget in this way would create more transparency and clearer accountability around this investment, enabling Scottish interests to be better and more consistently reflected in the identification of Research Council priorities.

18. Mr Russell noted that he looked to bodies such as the SSAC to take a leading role in negotiations with the Research Councils. He suggested that independence offered the opportunity to influence policy in areas that are currently not available. He asked SSAC to consider what currently works, what does not and areas that we would wish to protect.

19. A member asked about future charity funding in an independent Scotland. The Cabinet Secretary responded that charities were autonomous bodies but early indications were positive and that it is likely they would wish continue to fund research in Scotland based on excellence and reputation.

20. Mr Russell suggested that independence has the ability to give Scotland a voice. There are currently problems with funding decisions made a UK that affect Scotland – the example of Research Council funding going to Research institutes was given. The Cabinet Secretary responded that we need a different method of funding but it is currently not on offer. Independence offers the solutions to solve these problems.

21. A member asked about the implications of the rest of the UK voting to leave the EU after the independence vote? Mr Russell responded that the advantage of independence is that the people of Scotland will have the sole and final say. We will not be taken out of the EU against our wishes as may turn out to be the case if we are not independent. Independent membership of the EU would ensure that the Scottish Government is able, for the first time, to participate at every level in the EU legislative and policy process.

22. A member asked about tuition fees for students from the rest of the UK studying in Scotland. Mr Russell responded that following independence, the Scottish Government proposes to maintain the status quo by continuing our current policy of charging fees to students from the rest of the UK to study at Scottish higher education institutions. He stated there was an objective justification for this position.

23. A member asked how other entities such as the TSB and the Met office which have a function across the whole of the UK would operate in an independent Scotland. The Cabinet Secretary pointed SSAC to the Annex of the White paper which gave details on how each of these organisations would be handled after the vote. He asked members to consider on a medium to a long terms basis the value of these organisations and whether there were better ways of doing it i.e. do they meet our needs. These discussions would then feed into the negotiation process.

24. The Cabinet Secretary concluded by highlighting the advantages for the science and engineering community of an independent Scotland:

* An opportunity for the people of Scotland to take responsibility for their future
* Strategic approach – as a full and equal partner
* A democratic choice
* Immigration – the ability for Scotland to develop our own immigration system ensuring that we benefit from the skills of those highly educated people who want to make Scotland their home. The current policy doesn’t work for Scotland we need a more generous open policy.
* Tax raising powers

25. Professor Calder and Dr Masters thanked Mr Russell and Dr Allan for the opportunity to discuss the White Paper.

**5. Big Data**

26. Professor Calder introduced Professor Oberlander. She explained that at the last meeting Professor Oberlander had agreed to produce a paper for SSAC reviewing the landscape of Big Data and Data science in Scotland. Since that meeting Professor Oberlander had presented his draft paper to Mike Neilson Director of Digital in Scottish Government and colleagues who had welcomed the paper. It was agreed that once SSAC had signed off on the paper the final version would be submitted to the Scottish Government’s Data Management Board. Professor Calder congratulated Professor Oberlander on an excellent piece of work that was already having an impact in Scottish Government.

27. Professor Oberlander thanked Professor Calder for her introduction. He then went on to give an overview of the paper which is broken down into the following 4 sections:

1. Setting the scene: compares big data, data science, open data and open government.
2. Immediate context: notes the policy background to recent developments in Scotland
3. Scottish Landscape: sketches recent activities around scientific research and infrastructure, health and medical research; public sector information; and innovation centres and training.
4. Discussion points; raises questions to seek views on how to resolve them.

**Discussion**

28. Professor Calder thanked Professor Oberlander for his presentation and opened the meeting for further questions and further discussion. Professor Calder confirmed that the finalised paper would be submitted to the SG Data Management Board for their meeting on the 16 December. The intention was then to call a ministerial meeting with interested parties across Scotland.

29. SSAC members agreed that they were content to approve the paper with minor changes.

**6. Horizon 2020**

**Karen McAvenue and Anne Buchanan, Scottish Government**

30. Professor Calder welcomed Karen McAvenue and Anne Buchanan from the Scottish Government Innovation and Life Sciences team. Ms Buchanan gave SSAC members an overview of the new Horizon 2020 programme. She highlighted opportunities to engage and noted that the Commission was widening its search for experts from all fields to participate in the delivery of Horizon 2020. There is currently a call for organisations including research institutions and agencies, universities, civil society organisations or enterprises for independent experts with an active interest in research and technological development. The Commission is looking for independent experts who could be called on to:

* evaluate proposals;
* monitor the implementation of actions carried out under Horizon 2020 as well as of previous Research and/or Innovation Programmes;
* oversee implementation of Union research and innovation policy or programmes including Horizon 2020, as well as the achievement and functioning of the European Research Area;
* evaluate Research and Innovation Programmes;
* design of the Union research and innovation policy including the preparation of future programmes.

31. Professor Calder asked for a country profile i.e. the number of experts from the UK for example that would be expected to be selected. Ms McAvenue agreed to look into this.

32. Ms Buchanan reported that the first Horizon 2020 calls were to be launched on 10 December. She then went onto describe the structure of the work programmes and the strategic programmes.

33. Ms Buchanan highlighted the EU research and innovation steering group, which was formed in 2010 with the over-arching aim to give strategic direction to, and facilitate effective coordination of Scotland’s preparations for the European Union’s research and innovation programme, Horizon 2020.

34. She concluded by reviewing recent activities, which had taken place across Scotland to prepare for the new funding programme. One new initiative which she focused on was the Horizon 2020 SME engagement scheme, which aims to give more support to companies.

35. Professor Calder thanked Ms Buchanan and Ms McAvenue for their presentation.

**7. Unconventional Gas Update**

36. Dr Masters reported that the Scottish Government had convened an independent group of scientific experts to provide an independent, impartial evidence base upon which to inform future policy on unconventional oil and gas. He had been invited to Chair this group. Dr Masters outlined the terms of reference of the group and noted that they will produce a final report by April 2014.

**8. Views on Research Pooling and Innovation Centres**

37. Professor Calder opened a short discussion on the future of research pooling in Scotland. She also asked members to provide evidence on their experience of the new Innovation centres.

38. SSAC members had a wide ranging discussion and provided input from their personal experiences of each initiative. Professor Calder thanked members for their input which she said would be very helpful to her.

**9. SSAC Minutes 11 September 2013**

39. The SSAC agreed and approved the minutes of the last SSAC meeting held on the 11 September 2013.

**10. Matters Arising**

**SSAC Innovation report**

40. Professor Calder reported that the meeting with Mr Swinney was cancelled but will now take place on 22 January.

**11. Chairs updates**

***Honours***

41. Professor Calder reminded colleagues of the opportunity to recognise the achievements of worthy individuals in the Science and Engineering community through the UK Honours System. She suggested that if members would like to nominate individuals for an Honour this could be done through her office.

***CSA Activities in Whitehall***

42. Professor Calder updated colleagues on her recent meetings and engagements in Whitehall and the Chief Scientific Adviser network.

**12. Members Updates**

43. Members updated colleagues on topics of interest from their areas.

**13. Date of the Next Meeting**

44. The next SSAC dinner and meeting would be held on 19-20 March 2014. Full details will be provided in due course.

SSAC Secretariat – December 2013