



Synthetic Biology Leadership Council – Meeting 22

Tuesday, 19th March 2019

BEIS Conference Centre, 1 Victoria Street, London SW1H 0ET

Attendees:

Lord Henley, Prof Lionel Clarke, Prof Richard Kitney, Prof Joyce Tait, Prof Janet Bainbridge, Dr Rowan McKibbin, Prof Anne Osbourn (on behalf of Prof Dale Sanders), Dr Tim Brears, Dr Yvonne Armitage, Prof Petra Oyston, Dr David Tew, Dr Jason Vincent, Dr Gordon Ford, Dr Dana Heldt, Paul Henderson, Gillian Whitworth

Apologies:

Dr Louise Ball, Dr Jo Bray, Prof Dale Sanders, Prof Tim Dafforn, Jonathan Hoare

1. Welcome and Internal Business

- Lionel Clarke welcomed the SBLC members to the meeting. He outlined the meeting's agenda and the importance of this meeting. The [Bioeconomy Strategy](#) was launched in December 2018 and we need to ensure the SBLC is contributing and that synbio is reflected in the delivery plan and outcomes. Interaction with other communities such as the IBLF are crucial to ensure commercialisation from synbio is achieved.
- Lionel welcomed Tim Brears to the SBLC. Tim has taken over as chair of the Engineering Biology Advisory Committee (EBAC) for BIA. He is also the CEO of Evonetix and chair of the board of the Quadram Institute.
- The minutes from SBLC 21 and actions were reviewed.
Action: Circulate outputs of open meeting break-out sessions. Revised action 21-4 will be carried forward as 22-1

Actions	Description	Responsibility	Progress /outcome
21 – 1	Meeting between Lord Henley, Joyce Tait and Lionel Clarke on regulatory matters	Joyce Tait, Lionel Clarke, Paul Henderson	Done. Discussion have been taking place.
21 – 2	Provide summary of Oxford iGEM team project for Lord Henley	Dana Heldt	Summary was not made available by iGEM Team
21 – 3	Summary on UKs iGEM success (for Lord Henley)	Dick Kitney	Info has been collected and will be shared
21 – 4	Draft 'Commercialising UK SynBio' report	Lionel Clarke, Dana Heldt	New Action: Outcomes of the open meeting break-out sessions to be summarised and shared with attendees for feedback.

2. Discussion with Lord Henley

- Lionel welcomed the minister. He explained there were a few points the SBLC members would like to discuss.
- Bioeconomy strategy
 - Bioeconomy strategy was published at the end of last year (2018). Discussion with the minister focused on integration of synbio, for example the use of synbio technology provides a huge opportunity in industries such as the chemical sector.
 - Working groups are being formed to ensure delivery of the outlined plan and representatives of the synbio sector will be participating in those.
 - Importance of access to facilities and the under-utilisation of available facilities were discussed, e.g. demonstration plants can provide open access to SMEs and start-ups. GSK facility was given as an example: their plant (Worthing) is not fully used and can be made available for industry and the wider community. The requirement for a UK infrastructure document/manual, outlining where people can get access to scale up, was investigated. Rowan pointed out that UKRI are currently developing an infrastructure roadmap (commissioned by BEIS). The roadmap will be published late summer.
- SynbiTech 2019
 - The conference organised by SynbiCITE is taking place between 24th-25th of June at the QE2 in London. International and national attendees.
 - A ministerial delegation from Kenya will be attending the conference. They have expressed their interest in collaboration with the UK Synbio community. Lord Henley offered support for the engagement with the representatives from Kenya. Dick Kitney will work with Paul Henderson on an engagement plan for the delegation.
- Ministerial Working Group
 - Joyce Tait highlighted the opportunity for the UK to adapt own regulation and input into the EU decisions. DEFRA needs to play an important role and should connect with Joyce.
Action: Joyce to connect with DEFRA to discuss opportunities
 - Janet stressed the point that science has moved on. Different governmental departments have slightly different viewpoints and a joint, high level group is important.
 - UK's potential to be the Biodesign capital was highlighted. Anne Osbourn emphasised the enormous opportunities provided by plants. Norwich based company Leaf Expression Systems uses a rapid transit plant expression system, enabling the production of small molecules/chemicals in 5 days. The system, introducing genes in plants and making millions of drug doses in the plant, is already being used in the US
 - Regulation impact on bioremediation was discussed. Petra Oyston pointed out how the regulation holds back defence-related developments using plants. As there no way to use GM/GE plants outside of contained environments, Dstl will not be exploring those approaches and currently only fund work that can be translated/exploited.
 - The effects of climate change such as drought and the need for effective solutions to tackle the issue are responsible for the increased market pull
 - New regulatory framework is needed to allow developments in those areas
 - Syngenta was given as an example where R&D has moved to countries such as the US and China where regulatory climate less highly constrained

- potential visiting opportunities for Lord Henley were discussed, eg Open Plant in Norwich and the other major centres of synthetic biology research.

3. Science and Technology Subgroup

- Dick Kitney provided an update from the ST Group. The meeting took place on Wednesday, Feb 27th 2019 in London.
- Main discussion points of the ST meeting were:
 - Bioeconomy strategy paper
 - Security Matters
 - Metropolitan Police has developed UK Biosecurity Liaison Desk to protect against bioterrorism (dedicated email address, phone number)
 - SBLC member PO pointed out a NATO workshop in the summer where legislation and internal regulation will be discussed
 - Education and Training paper:
 - Report on education and training activities for SBRCs has been updated and demonstrates lots of activity. Now ready to be circulated.**Action:** circulate report
 - SynbiCITE updates:
 - SynbiCITE has moved to Imperial West (I-Hub at Imperial College White City Campus). Co-locating with companies. Biofoundry has moved as well.
 - SynbiTECH (June 24th-June 25th) is being organised. Conference will give an overview of the UK Synbio activities besides international speakers.
 - SBRCs provided updates and success stories.
 - Subgroup Synbio highlight and achievements document
 - written by Dick Kitney summarising the information provided in previous meetings.
 - Document gives overview of SBRCs, IKC and UK Biofoundries achievements and highlights the education and training opportunities in the synbio field (ranging from iGEM to 4-Day MBA course). The business landscape is summarised and covers access to funding. Two sections focus on cross governmental integration (BEIS, UKRI) and learning from international community.
 - Document can be used as reference when addressing Ministers, Investors, other Stakeholders
 - discussion took place on how we feed through the key messages (of delivering value and impact) to the BioEconomy Delivery Plan.

Action: Consider publication of an overarching success document/paper. Anne, Dick, Petra, Jamie Parkin (UKRI-BBSRC) and BEIS can provide support. Key messages we want to bring across need to be tangible, eg what does success look like? who is the audience, (eg Internal UK Audience, Minister, Investors) and international (to attract investment), societal impact (jobs, growth). SynbiTECH 2019 would be a good initial target.

4. Governance Subgroup (GSG)

- Joyce Tait provided an update of the meeting (Tuesday, Feb 26th 2019 in London)
- The minutes can be found [here](#).
- Main discussion points of the GSG meeting focused on:
 - Updates from SBLC

- Updates provided by Lionel Clarke focused on the launched the Bioeconomy strategy paper and the role synbio is playing
- Members of the GSG felt that initiatives in AI, robotics and data-driven innovation are proceeding without consideration of biology and biotechnology, this needs to be addressed to get synergies rather than fragmentation
 - Rowan McKibbin (UKRI BBSRC) addressed the concern and pointed out that UKRI are dealing on nearly daily basis with this
- BEIS/BIS development of standards for responsible innovation
 - Standards in industrial companies being developed, funding from IUK
 - Market research underway: 40 interviews will be conducted across categories (eg AI, Data, Life Sciences, Robotics, Social Media, and Novel Materials) including SMEs and large organisations,
- Convention on Biological Diversity
 - 3 topics discussed under the CBD 1) risk assessment 2) risk management and 3) digital sequence information
 - New Ad hoc Technical Expert Group (AHTEG) will be set up, with first meeting taking place in June.
 - AHTEG will develop a report including the contributions of the Online Forum. Report will go to the COP-MOP meeting in Beijing in 2021.
- Comment from Anne Osbourne addressed the potential implications for large-scale international projects such as the Earth Biogenome, as countries are likely to focus on their own native species.

5. Review of Membership and ToRs

- Discussions around the SBLC membership and term of reference took place.
- The SBLC vision has not been updated since being implemented in 2013. Do we need to reflect the requirement of Skilled workforce within the ToRs?
Action: Consider rephrasing/rewording of the vision (all)
- Discussion on the requirement of open meeting. There is currently no funding available for the open meeting. Divided opinions on the need and format of the open meeting. It was noted that an open meeting is needed to be transparent and enable engagement with the wider synbio community, but a smaller format might be more appropriate.
Action: KTN to work offline with Stakeholders (Lionel Clarke, BBSRC, Innovate UK, BEIS) to find alternative solutions for continued SBLC support.
- Better SBLC engagement with the centres needed.
Action: Ensure SBLC representation at the annual networking meeting of the Synthetic Biology for Growth (SBfG) investments, which occurs adjacent to the SBUK conference (Warwick, 9th -10th December 2019. Rowan to provide dates once available
- Discussions on members and needed representation from different synbio areas/sectors. SBLC needs to consider a skills matrix highlighting the areas need to be covered and the representation gaps within the SBLC, enabling a targeted approach. Clear guidelines are needed to outline members representation (eg organisation or ad hominem. It was suggested to invite Roger Kilburn from IBioIC.
Action: Lionel to approach Roger for invitation. All to suggestions potential members [*note post meeting: Roger Kilburn has resigned from IBioIC – need to consider another possible candidate*].

6. Synthetic Biology for the Bioeconomy delivery plan

- The Bioeconomy strategy document, launched December 2018 was discussed in detail and how to ensure synbio representation across the different working groups
- Paul H set the scene stating that this is not about setting strategy any more but now about delivering actions
- 5 Working groups organised around the foundation-related actions are being formed to ensure the delivery of bioeconomy strategy
- Discussions took place on inputs and outcomes needed from a synbio perspective and people were asked to consider volunteering for the groups.
 - 1) Ideas
 - Importance of obtaining investment. Investment from UK VCs needed. Need to develop appropriate model for funding, promote multi-disciplinary approaches to get the right challenges addressed. Need to create Synbio funding framework.
 - Academia and industry need to work together.
 - Potential areas: new and/or designer molecules, materials, Bio-revolution, Agri-food,
 - Increasing market pull defines the idea, eg environmental impact, plastics,
 - Need to ensure synbio supports the disruptive technologies
 - Dick volunteered to be in the group
 - 2) People
 - Considering Synbio is a platform technology, multidisciplinary skills are needed to be able to address all synbio sectors
 - 3) Infrastructure
 - Link into UKRI Infrastructure Roadmap (see discussion section 2)
 - 4) Places
 - Spin outs/SME formation from/in Bristol, Imperial, Norwich, Nottingham were discussed

7. AOB

- No other topics or concerns were raised

8. Actions

The actions from SBLC 22 are summarised in the table below

Actions	Description	Responsibility	Due date	Progress /outcome
22 – 1	Summarise outcomes of the open meeting break-out sessions and circulate with attendees for feedback.	Dana Heldt, Yvonne Armitage	By next meeting	shared with attendees, awaiting further feedback
22 – 2	Generate and publish synbio successes document	Lionel Clarke, with all SBLC support	SynbiTECH 2019 if possible	done
22 – 3	KTN to work offline with Stakeholders (Lionel Clarke, BBSRC, Innovate UK, BEIS) to	Dana Heldt	ongoing	KTN Internal Synbio

	find alternative solutions to continue support to SBLC			planned shared with BBSRC and Innovate UK
22 – 4	Enable SBLC representations at the SBUK pre-meetings.	Rowan McKibbin	As and when dates become available	done
22 – 5	Review of SBLC ToR: Rephrasing of SBLC vision	All (Dana to collect)	Next meeting	In progress
22 – 6	Develop synbio skill/platform matrix	Dana	Next meeting	Pre-reading material paper paper 7)
22 – 7	Suggest members to invite, to reflect cross sector synbio representation	All (Dana to collect)	Next meeting	In discussion
22 – 8	Invite Roger Kilburn to join SBLC	Lionel Clarke	Next meeting	Roger Kilburn has left IBioIC – need to identify another.
22 – 9	Support Bioeconomy strategy Working Group reps	all	n/a	ongoing
22- 10	Circulate Education and Training paper	Dick Kitney	Next meeting	In progress