Meeting Programme

Tuesday 21 May

09:30 Registration

10:00 Jim Murray (University of Cardiff)
Welcome and introduction

Session 1: What is synthetic biology, and what can it be used for?
10:15 Jim Haseloff (University of Cambridge)
Engineering plant form
10:40 June Medford (Colorado State)
Rewiring a plant and digital-like controls
11:05 Andy Boyce (Biotechnology & Biological Sciences Research Council)
Research Council strategy and funding for synthetic biology
11:30 Belinda Clarke (Technology Strategy Board)
Funding new frontiers in synthetic biology

Session 2: From molecules to cells and circuits
11:55 Dek Woolfson (University of Bristol)
Generating and applying toolkits of de novo peptide components for synthetic biology
12:20 Lunch

13:15 Cameron Alexander (University of Nottingham)
Synthetic polymers – new containers and communication materials for synthetic biology
13:40 Lee Cronin (University of Glasgow)
Bottom up meets top down: From inorganic biology to synthetic biology manipulations in 3D printed wet-ware
14:05 Martin Howard (John Innes Centre)
Implementation of analogue arithmetic circuitry in plants
14:30 Anne Osbourn (John Innes Centre)
Making new molecules
14:55 Rob Edwards (University of York; FERA)
Plant synthetic biology: A new platform for industrial biotechnology?

Session 3: Plant synthetic biology
15:20 Chloe Singleton (University of Exeter)
Synthetic metabolons
15:45 Afternoon tea

16:05 Giles Oldroyd (John Innes Centre)
Redesigning the symbiotic signalling pathway for rhizobial recognition
16:30 Sebastian Schornack (Sainsbury Laboratory Cambridge)
Targeted variation of genomes using TAL effectors
16:55 Breakout groups: What can plants do for synthetic biology?

19:30 Dinner at the National College for School Leadership
Wednesday 22 May

08:45  Tea and coffee  
Exchange Atrium

Session 4: Synthetic biology tools  
Lecture theatre

09:00  Susan Rosser (University of Glasgow)  
Recombinases as tools for synthetic biology

09:25  George Lomonossoff (John Innes Centre)  
eVLPs for plant synthetic biology

09:50  Tom Ellis (Imperial College London)  
Assembling designer genomes

10:15  Sylvestre Marillonnet (Icon Genetics)  
Developing tools for synthetic biology: Golden Gate Cloning and the MoClo System

10:40  Jim Ajioka (University of Cambridge)  
A guide to Gibson assembly

11:05  Coffee break  
Exchange Atrium

11:30  Breakout sessions to discuss future community needs  
Various locations

12:30  Lunch  
Computer Science Atrium

13:30  Feedback from breakout groups  
Lecture theatre

14:00  Claire Marris (Kings College London)  
Responsible Research and Innovation for Synthetic Biology

14:25  Alistair Elfick (University of Edinburgh)  
iGEM

14:50  Natalio Krasnogor (University of Nottingham)  
Computational tools for rapid model prototyping in synthetic biology

15:15  Jim Haseloff (University of Cambridge)  
PlantFab registry of DNA parts for plants

15:40  Richard Kitney (Imperial College London)  
Foundational Resources from cSynBi

16:05  Guy-Bart Stan (Imperial College London)  
Taking a forward-engineering approach to the design of synthetic biology systems?

16:30  Close
Your breakout groups are the same for the two discussion sessions. The dots on your badges represent the group you will be in. The groups are also labelled in the delegate list. Your group chair, rapporteur, and meeting location is given in the table below.

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<thead>
<tr>
<th>Chair</th>
<th>Rapporteur</th>
<th>Location</th>
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<tbody>
<tr>
<td>Red</td>
<td>Andrew Spicer</td>
<td>TBC</td>
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<tr>
<td>Green</td>
<td>Rob Edwards</td>
<td>Tom Ellis</td>
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<td>Blue</td>
<td>Anne Osbourn</td>
<td>Dek Woolfson</td>
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<td>Yellow</td>
<td>Susan Rosser</td>
<td>Jim Murray</td>
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<td>White</td>
<td>Giles Oldroyd</td>
<td>Ruth Bastow</td>
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**Breakout Session 1: What can synthetic biology do for plants?**

**Tuesday**
16:55 Discussion in breakout groups
18:00 Feedback
18:30 Finish

1. What are the benefits of undertaking synthetic biology in plants?
2. What can plants contribute to synthetic biology?
3. If you were not limited by technology or resources, what new plants or plant products would you construct using synthetic biology approaches?
4. Which plant system(s) would provide a useful starting point for synthetic biology research?
5. What barriers would need to be overcome in order to carry out the projects outlined above?

**Breakout Session 2: A plant synthetic biology community**

**Wednesday**
11:30 Discussion in breakout groups
12:30 Lunch
13:30 Feedback

1. What current tools and resources exist to support plant synthetic biology?
2. What new tools and community resources are needed to allow plant researchers to make progress in this new sphere?
3. To what extent is the UK plant science community well placed to take advantage of the current opportunities in synthetic biology? What are the current barriers?
4. If there was an initiative to bring together a plant synthetic biology community, who should it include and what purpose would it serve?
5. Should such a community be limited to plant science, or should it be linked to communities that are already beginning to emerge in microbial or other areas?