

## Network Updates



December 2020

**The Carbon Recycling Network:** is one of 6 BBSRC NIBB Phase II networks. The network will promote those aspects of carbon recycling that support the re-use and exploitation of single carbon (C1) greenhouse gases, CO, CO<sub>2</sub> and CH<sub>4</sub>. The focus is on gas fermentation, primarily using chemoautotrophs, and seeks to explore the potential of anaerobic digestion (AD) as a gas fermentation feedstock generator. The Network provides a cross-sector forum with the goals to foster and enhance collaboration between industry and academia; develop skills and expertise; share best practice; define common research priorities; and target funding opportunities in this area.

**Progress:** Our membership continues to grow and currently stands at 467 with 71 from Europe and 33 International, including: USA, India, & Brazil. We have 676 followers on Twitter. To date, we have funded 5 Proof of Concept awards (POCs) and 2 Business Interaction Vouchers (BIVs).

## Network News

### Upcoming Network Event

The Carbon Recycling Network are hosting an event with the Nottingham [BBSRC/EPSRC Synthetic Biology Research Centre](#), the [ENGICOIN](#) project, and [the Institute for Science and](#)

[Society](#),

University

of

Nottingham:

## Responsible Innovation: Industrial Biotechnology and Engineering Biology

Online, 10:30-14:00 GMT, Monday 25 January 2021

The event is FREE to attend. [Register here](#)

This [free online event](#) brings together the [BBSRC Networks in Industrial Biotechnology and Bioenergy](#), the wider synthetic biology, industrial biotechnology and responsible innovation communities, and eminent speakers from across disciplines and sectors to explore current developments, challenges and opportunities for responsible innovation in industrial biotechnology and engineering biology.

Anyone with an interest in biotechnology, synthetic biology and the important role responsible innovation might play in their future development is welcome to attend!

**Speakers include:** [Phil Macnaghten](#) (Wageningen University); [Rowan McKibbin](#) (BBSRC); [Sean Simpson](#) (LanzaTech); [Joyce Tait](#) (University of Edinburgh); [Lionel Clarke](#) (Engineering Biology Leadership Council); [Susan Molyneux-Hodgson](#) (University of Exeter); [Neil Parry](#) (Unilever); [Lotte Asveld](#) (TU Delft); [Megan Palmer](#) (Stanford University); Directors of the six [BBSRC NIBBs](#); and more!

You can see the full programme [HERE](#) and register [HERE](#)



**Funding Calls**

**Industrial Biotechnology (IB) Funding round-up:**

KTN's IB team have compiled a list of the latest funding calls of relevance to Industrial Biotechnology:

<https://ktn-uk.co.uk/news/industrial-biotechnology-funding-round-up>

<https://ktn-uk.co.uk/news/chemicals-funding-round-up>

**UKRI: Funding round up:**

<https://www.ukri.org/opportunity/>

**IBioIC Innovation Funding:**

<https://www.ibioic.com/funding-calls-database/innovation-funding>

**European Horizon 2020 Open funding calls:**

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/h2020>

**BEIS consultation on Greenhouse Gas removal:**

BEIS and HM Treasury have launched a Call for Evidence on Greenhouse Gas Removals (GGRs). The Call for Evidence will be open for 12 weeks until Friday 26th February 2021

Click [Here](#) for more details

FEMS Research and Training Grants Deadline(s): 1 January 2021/ 1 July 2021

Leverhulme: Study Abroad Studentships: 11 January 2021

The Branco Weiss Fellowship – Society in Science: 15 January 2021

**Funding from other NIBBs****HVB:**

Business Interaction Vouchers (BIVs): 19 January 2021

Training Fund

**EBNET:**

Travel Bursary

## Network Engagement

### Net - Zero Live 2020

***November 10-12 saw members of The Carbon Recycling Network participate in “Net-Zero Live 2020” - “the biggest virtual event of its kind connecting thousands of energy, sustainability and resource efficiency professionals around a common purpose: to accelerate climate action and drive a green recovery.”***

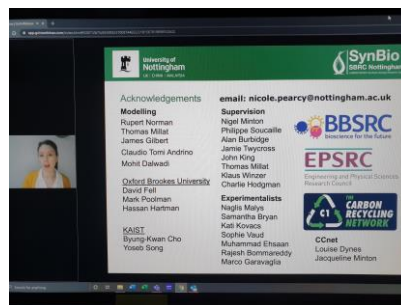
Taking place over three days in a virtual format, this event includes high-level keynote talks, interactive panel discussions, facilitated networking sessions and educational masterclasses, as well as virtual exhibition booths showcasing the cutting-edge net-zero technologies and services that will shape the decade ahead. At the booth, visitors could watch a video we had produced about the gas fermentation as well as talk to our experts. Around 300-400 visitors attended the event each of the 3 days. We had 23 visitors to our booth from Environmental products, Media, Government agencies, Health services and Energy generation. Our team spoke directly to around 9 attendees, mainly during the networking sessions. The Carbon Recycling Network acquired 6 new twitter followers and 2 new members.



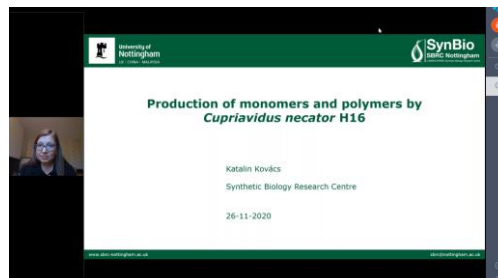
## Biochemistry Focus - Webinar Series

The Biochemical Society and Portland Press have collaborated to deliver a *Biochemistry Focus* webinar series. Network members: Dr Nicole Pearcy and Dr Katalin Kovacs both recently gave talks as part of the series.

Nicole gave a talk on developing genome scale metabolic models of industrial chassis engineered for the sustainable production of platform chemicals and biofuels. These models are invaluable tools for simulating a bacterium's metabolic behaviour at the systems level. Katalin's talk focused on the metabolic engineering of the chemolithoautotrophic bacteria *Cupriavidus necator* H16 for the sustainable production of monomers and biopolymers.



Katalin gave an overview of the SBRC - Nottingham's work to deliver polyhydroxyalkanoates through gas fermentation at the "Developments in Industrial Biotechnology" session.



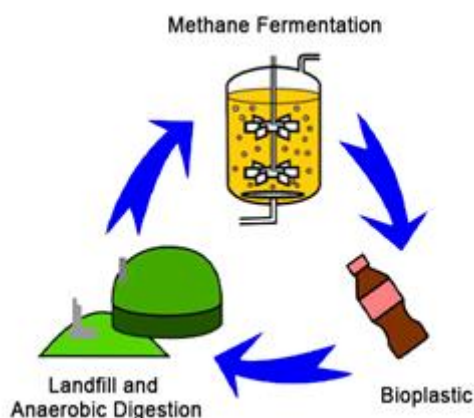
If you missed the webinars and would like to watch them, view the recordings: [HERE](#)

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## 'A Sustainable Future' Case Study - PHB Bioplastic Production from Waste Methane

Production of the bioplastic PHB from bacteria offers a green solution to the current plastic crisis. Methanotrophs which are capable of PHB production offer a unique way to tackle this combined

with utilising waste and low-quality methane containing biogas which would otherwise be wasted and contribute to greenhouse gas emissions. In a short case study for the Microbiology Society as part of their 75<sup>th</sup> Anniversary Sustainable Future Collection, we report some of the results of an upcoming paper from Network member; Ying Zhang's group on methane fermentation of PHB from real world biogas sources as well as an overview of the future of the technology and its potential as part of the circular economy aimed at the non-expert reader.



The full paper soon for publication in AMB Express is "Isolation and characterisation of *Methylocystis* spp. for poly-3-hydroxybutyrate production using waste methane feedstocks" Network Members - Bashir L. Rumah, Christopher E. Stead, Benedict H. Claxton Stevens, Nigel P. Minton, Alexander Grosse-Honebrink, and Ying Zhang.

[Read More Here](#)

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## Upcoming Events

### The Carbon Recycling Network Conference 2021

*April 2021 - date to be confirmed*

## Online

The conference will be taking place online and will be smaller than previous ones, with the hope to hold a larger scale, in person event towards the end of 2021.

We will be releasing a registration date very soon - **Watch this space!!**

### **Responsible innovation: from industrial biotechnology and synthetic biology to engineering biology**

Online, 10:30-14:00 GMT/UTC, Monday 25th January, 2021

Register [Here](#)

### **Other NIBB Events:**

**EBNET Webinar series:** Organohalide Bioremediation – Current Approaches in Environmental Biotech

12th January 2021 at 09:00 – 10:30

Register [Here](#)

### **E3B Metals in Biology seminar: Top tips for writing better manuscripts**

Tuesday, 19<sup>th</sup> January 2021, 10:00 – 11:30 via Zoom

Register [Here](#)

### **Other Events:**

[KTN Events](#) - Full Round up

### **[IBiolC's 7th Annual Conference - Towards Net Zero: Growing the Bioeconomy](#)**

10-11 February 2021, Online

## Responsible Research and Innovation Update

By **Eleanor Hadley Kershaw** (SBRC-Nottingham, Interdisciplinary Responsible Research and Innovation Group & Network Member)

## European Biotechnology and Society Seminar Series

Eleanor was invited to deliver a talk in the [European Biotechnology and Society Seminar Series](#), convened by the European Research Area Cofund on Biotechnologies (ERA CoBioTech) and colleagues at the Universities of Edinburgh and Durham. Together with Stevienna de Saille (University of Sheffield) and Carmen McLeod (Newcastle University, formerly SBRC-Nottingham), Eleanor presented 'RRI in ERA CoBioTech: Challenges and opportunities of using Lego Serious Play' on 14 October. The seminar was attended by 55 people and generated lively discussion on RRI methods, institutions and funding. Further information on the seminar series (including presentation slides) can be found [here](#).

## Recent Publications

The work of the [SBRC-Nottingham Interdisciplinary Responsible Research and Innovation Group](#) has resulted in two recent open access publications:

Hadley Kershaw, E., Hartley, S., McLeod, C., Polson, P. (2020) The Sustainable Path to a Circular Bioeconomy. *Trends in Biotechnology*. <https://doi.org/10.1016/j.tibtech.2020.10.015>  
This Science & Society article in the high impact journal *Trends in Biotechnology* explores the emergence and recent delineation of the 'circular bioeconomy'. The article argues that the circular bioeconomy is at risk of developing in narrow, unsustainable ways. A sustainable path to circular bioeconomies must embrace diverse expert and stakeholder input, multiple solutions, and noneconomic value. [Read more here](#).

McLeod, C., Hadley Kershaw, E., Nerlich, B. (2020) Fearful Intimacies: COVID-19 and the Reshaping of Human-Microbial Relations. *Anthropology in Action*, 27(2), 33-39. <https://doi.org/10.3167/aia.2020.270205>

This article draws on analysis of public health discourses and media sources to explore how COVID-19 could be reshaping human-microbial relations in and beyond the home. [Read more here](#).

## Other News

**Animal feed made from recycled carbon secures €2.5M funding**



Members of The Carbon Recycling Network – [Deep Branch Biotechnology](#), have secured further investment to scale up the sustainable generation of protein. Agile start-up company Deep Branch was formed by three former Synthetic Biology Research Centre – Nottingham (SBRC) PhD students, based on their training and experience in gas fermentation gained through their PhD studies. The company has secured significant grant and investment funding to scale-up gas fermentation technology for circular economy applications. This news is a great demonstration of the power and importance of PhD training in a well-funded laboratory which has a strong focus on applied as well as basic science.

Read the full story [HERE](#)



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## Spot Light on

### **Network Member receives Vice-Chancellor's Medal**

In August 2020, Network Member Ruth Cornock and SBRC-Nottingham colleague Michelle Kelly, were informed that they had been nominated for University of Nottingham's Vice-Chancellor's Medal: an annual award for which staff and students can be nominated, recognising exceptional service and achievements. Both were very surprised (in a good way!) and pleased to have been awarded the medal, having not known about the nomination, and which came after a challenging few months in which the University of Nottingham had been closed due to the Coronavirus pandemic. The award recognises the hard work and effort that both Ruth and Michelle have put into many outreach events, (both for C1net and The Carbon Recycling Network) most notably taking an exhibition stand to New Scientist Live (a four day science festival held each autumn at the ExCeL Exhibition Centre in London) for the past three years, to talk to members of the public about the gas fermentation research. Normally Vice Chancellor award ceremonies are an in-person event, however, the Coronavirus pandemic has made this impossible this year, and so medal nominees were invited to the inaugural virtual Vice Chancellor's medal ceremony, which

was held on 25th November. Ruth and Michelle would like to express thanks to Network members: Jacque and Nigel Minton for the nomination, to the office of the Vice Chancellor for the award and they look forward to receiving their medals in the new year.

***Many Congratulations to them both!***



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## Contact

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