

JANUARY 2020 NEWSLETTER

NETWORK NEWS

Francesca Re Manning would like to wish everyone a belated happy new year, with the hope that 2020 has started well, and that projects are progressing as planned. As the new [Programme Manager](#) of Cambridge Global Food Security, Francesca would like to use this year to reconnect and strengthen our network, creating new collaborations and research projects that can have a relevant and long-lasting impact on food security. As a global issue, it is paramount that global solutions are provided, and that is why the interdisciplinary aspect is so important. To ensure that everyone has enough food that is safe, nutritious, and sustainably grown, even stronger links with other interdisciplinary research centres and research groups, such as climate change and public health, will need to be forged. Additionally, continuous support to early career researchers should be provided to ensure that a new generation of academics can lead the way to find effective solutions.

We were pleased to run our [2019 Early Career Researcher Travel Fund](#), and sponsored 12 early career researchers (ECRs) with the help of the [Isaac Newton Trust](#). The recipients travelled both far and near, building and strengthening networks, gathering valuable information and skills, and preparing themselves for more brilliant academic output. [Sethlina Naa Dodua Aryee](#) travelled to Lagos, Nigeria, to attend the inaugural Nigerian Bioinformatics Conference; [Nick Fradgley](#) went to Addis Ababa in Ethiopia to network with researchers from various Ethiopian institutes working on different aspects of crop research; [Tarra Penney](#) went to Montreal, Canada, for the International Public Policy Conference; [Emily Stoakes](#) travelled to a *Campylobacter*, *Helicobacter* and related organism Conference in Belfast, Northern Ireland; [Warren Arinaitwe](#) gave a conference talk on virus-insect interactions in tomato at the British Society for Plant Pathology in Bristol, UK; [Dorien Braam](#) travelled to Sindh, Pakistan, where she conducted fieldwork for her PhD research on the risk of zoonotic diseases in disaster displaced human and animal populations; and [Chioma Achi](#) is completing a trip to Nigeria to collect data related to assessing the risk of acquiring antibiotic-resistant bacteria from poultry and pig slaughterhouses. This is just a selection of the research trips taken, and we hope that it inspires more ECRs at the University of Cambridge to apply for our next round of travel funding for their food security related research and practice.

We awarded Dorien Braam and Nick Fradgley with best presentation and best photography prizes respectively, at an event held on the 13th of December. Please find a selection of their travel images below. We will be interviewing Dorien and Nick on their travels, with more information about those interviews in our next newsletter.

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Dorien conducting interviews in Haji Abdullah Goto village.



Nick with a plant breeder at the Ethiopian Institute for Agricultural Research.

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Two of our members designed and led algal biotechnology workshops in December 2019 at the Department of Plant Sciences, University of Cambridge. Algae can be used as an ingredient for a large number of food products, and to help the industry grow, the Department provides professional development courses in algal biology, culturing, growth and subsequent metabolite analysis. These are held under laboratory and small scale pilot facilities, such as the Algal Innovation Centre at Cambridge. It is anticipated that both of these workshops will be held again in 2020.

A workshop titled "[Expressing transgenes in Chlamydomonas and Phaeodactylum - a guide to commonly used methods for transformation of their nuclear genomes](#)" was held on the 10th - 11th December. [Dr Payam Mehrshahi](#) and [Dr Katrin Geisler](#), who had previously designed and ran this workshop in 2017, secured funding from [EIT-Food](#) and [AlgaeUK](#) that enabled them to award travel grants to 14 delegates from the UK, Italy, Germany, Turkey, Philippines, Brazil, and Ghana. The funding also covered their administration and catering costs. The workshop provided hands-on training in use and application of the latest technologies and methodologies for transformation and engineering of the microalgae Chlamydomonas and Phaeodactylum through daily laboratory teaching sessions. The delegates were also introduced to the basics of advanced cloning strategies, including Golden Gate cloning, and adoption of the Modular Cloning (MoClo) syntax. The programme provided a great opportunity for postgraduate students and postdoctorate researchers to gain training in algal transformation techniques.



Payam, left, front row, and Katrin, third from right, back row, with workshop delegates and colleagues.

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Another EU funded EIT Food workshop on “[Algal Biotechnology - Techniques and opportunities for the sustainable bioeconomy](#)” was held on the 12th - 13th December. This was the second time this workshop was run, with over 30 delegates from the UK, Ghana, Switzerland, Latvia, Finland, Philippines, Estonia, Germany, Denmark and Turkey. They represented industry (from start-up companies to larger SME’s), networks, and academia (from MSc students to Directors). The 2 days were split between theory in the mornings - with lectures from leading scientists and industrialists in the algal biology sector, and practical sessions in the afternoon - with delegates learning how to identify, grow, analyse, and harvest algae. This workshop was designed and led by [Dr Matt Davey](#). Francesca, our Programme Manager, chaired one of the panel discussions, and complimented the well-designed course structure, the variation in talks that provided her with a balanced viewpoint of the algal industry, and the knowledgeable speakers presenting the courses.



Matt, right, demonstrating equipment used for algal metabolomics.

We also held a public event with EIT Food in December titled ‘[How sustainable is our diet?](#)’ It gave us a good opportunity engage with the public, using a series of apps and online games, to learn about the impact that food has on the environment, and the alternatives that we can all adopt to live more sustainably.

LISTINGS

UNIVERSITY OF CAMBRIDGE EVENTS

28 Jan. [The Royal Society Funding Visit.](#) The Royal Society Grants Team will be visiting the University of Cambridge, and will present on different funding options and how to apply for them. **Maxwell Centre, Cambridge.**

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13 Feb. [Delivering ODA research – a cross-sector interactive discussion](#). Jesus College, Cambridge.

EXTERNAL EVENTS

30 Jan. [Digital collaboration in the food and drink production supply chain](#). London, UK.

18 March. [Controlled Environment Agriculture – The Industry is Growing Up](#). Norwich, UK.

22-30 June. [Hands-On Plant Molecular Biology Laboratory Training and UK-Africa Food Security Symposium 2020 attendance](#). University of Abomey-Calavi, Benin Republic. Application deadline: 29 February.

PUBLICATIONS AND MEDIA

[Contact us](#) if you are an Initiative Member and would like support in promoting your new publication.

[Pond scum could feed the world, says Cambridge professor](#). Professor Alison Smith, Head of the Department of Plant Sciences at the University of Cambridge, on how microalgae can be used as a viable food source.

[What's your beef?](#) IRC member **Jacqueline Garget** discusses the issues behind the debate on eating less beef and lamb in the face of the climate impact of the meat industry. This article expands on the panel discussion held at our 2019 Cambridge Festival of Ideas event: '[Meat and Potatoes: changing diets for changing times?](#)'

The State of Food and Agriculture 2019 [report](#). FAO, United Nations. Focusing on actions to reduce food loss and food waste.

[Down the Hunger Spiral: Pathways to the Disintegration of the Global Food System](#), by IRC member **Dr Asaf Tzachor**, argues that for a precarious global agricultural system with powerful feedback loops, business as usual means widespread hunger and embedded systemic risk.

[Ecosystems Overload](#). To save millions of species, we have to change how we think about, and live off, and value our planet.

[How gardeners are reclaiming agriculture from industry, one seed at a time](#). IRC member **Dr Helen Anne Curry** from the University of Cambridge discusses the increases in the practice of seed saving in response to large scale commercialised seed production.

IRC member **Professor Giles Oldroyd** of the University of Cambridge hopes that his research in self-fertilising crops will [improve yields for farmers in the developing world](#).

Journal Papers

Please note that the *Nature Food* journal has published its first issue.

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Home-prepared food, dietary quality and socio-demographic factors: a cross-sectional analysis of the UK National Diet and nutrition survey 2008–16. *International Journal of Behavioral Nutrition and Physical Activity*. September 2019. Involving IRC members **Tarra Penney** and **Jean Adams**.

Maize phenylalanine ammonia-lyases contribute to resistance to Sugarcane mosaic virus infection, most likely through positive regulation of salicylic acid accumulation. *Molecular Plant Pathology*. October 2019. Involving IRC member **John Carr**.

Impacts of environmental and socio-economic factors on emergence and epidemic potential of Ebola in Africa. *Nat Commun*. October 2019. Involving IRC member **James Wood**.

Reference Genome Anchoring of High-Density Markers for Association Mapping and Genomic Prediction in European Winter Wheat. *Front. Plant Sci*. November 2019. Involving IRC member **Julian Hibberd**.

Gene Banks, Seed Libraries, and Vegetable Sanctuaries: The Cultivation and Conservation of Heritage Vegetables in Britain, 1970–1985. *Culture, Agriculture, Food and Environment*. November 2019. Involving IRC member **Helen Anne Curry**.

Coinfections by noninteracting pathogens are not independent and require new tests of interaction. *PLoS Bio*. December 2019. Involving IRC member **Nik Cuniffe**.

Chemical and microbial diversity covary in fresh water to influence ecosystem functioning. *PNAS*. December 2019. Involving IRC member **Andrew J. Tanentzap**.

Developing distributed manufacturing strategies from the perspective of a product-process matrix. *International Journal of Production Economics*. January 2020. Involving IRC members **Mukesh Kumar**, **Jagjit Singh Srail**, and **Naoum Tsolakis**.

Parents' and carers' awareness and perceptions of UK supermarket policies on less healthy food at checkouts: A qualitative study. *Appetite*. April 2020. Involving IRC member **Jean Adams**.

FUNDING OPPORTUNITIES

If you are a Cambridge researcher interested in putting together an interdisciplinary application and would like assistance in finding suitable collaborators/coordinating a group meeting, please [contact us](#).

Royal Society David Attenborough Award and Lecture. Awarded annually for outstanding public engagement with science. **Deadline: 3pm, 27 January.**

Michael Faraday Prize and Lecture. Awarded for exemplary science communication. **Deadline: 3pm, 27 January.**

University of Cambridge staff: Support for the preparation of large cross-School research funding bids is available. A central Administered Fund has been established under the stewardship of the Research Policy Committee (RPC) to consider requests for resources to enable the preparation of

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large collaborative bids. Applications must demonstrate strong academic leadership with clear goals, and involve researchers from at least two Schools.

[DELTA Africa Phase II Call for Applications](#). Applications invited for health-, social-, and sustainable development-focused, interdisciplinary and multidisciplinary scientific programmes. **Deadline: 28 February.**

OTHER OPPORTUNITIES

Applications to take part in [FameLab](#) are now open. FameLab is an international science competition designed to find, train and mentor scientists in communicating their science to the public. **Deadline: 28 February.**

Please note these free online resources here: [Trust in Our Food: Understanding Food Supply Systems](#) and [Evidence-based resources on sustainable food systems](#).