

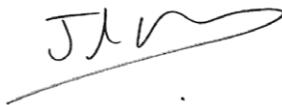
PUBLIC
ENGAGEMENT
PRIZES 2019

WELLCOME GENOME CAMPUS
CONNECTING
SCIENCE



FOREWORD

Connecting Science is delighted to support the Public Engagement Prizes 2019. The Wellcome Genome Campus is at the cutting edge of research, and the diverse mix of projects that comprise this year's winners makes it clear that the same mixture of innovation and dedication runs through our engagement activities. We are committed to ensuring that all our Campus colleagues have access to the tools, training and resources they need to support their engagement ambitions, and I am excited to see what has been built on the foundations which we provide. My deepest congratulations to all of this year's nominees and prize winners.



Julian Rayner
Director, Connecting Science

The Wellcome Genome Campus is a vibrant and diverse community of scientists, bioinformaticians and other professionals, and public engagement is a valued part of our culture. It is wonderful to recognise and celebrate staff and students from the Wellcome Sanger Institute and the EMBL-European Bioinformatics Institute who have led a broad range of activities to share genomics and biodata with the public over the past year. We would like to congratulate the nominees and winners, and thank everyone across campus who is involved in our public engagement endeavours.



Mike Stratton
Director,
Wellcome Sanger Institute



Ewan Birney
Director,
European Bioinformatics Institute



Rolf Apweiler
Director,
European Bioinformatics Institute

Connecting Science Public Engagement Prizes 2019

Supported by Wellcome and coordinated by Wellcome Genome Campus Connecting Science, whose mission is to enable everyone to explore genomic science and its impact on research, health and society.



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COMMITMENT TO PUBLIC ENGAGEMENT PRIZE

Celebrating staff or students who have demonstrated significant and longstanding commitment to public engagement.



Winner



Kim Judge

Senior Staff Scientist, Wellcome Sanger Institute
Winner, Commitment to Public Engagement Prize 2019

Kim combines her passions for genomics research and public engagement to excite young people about science and show them the available career options through an innovative programme that brings real-time DNA sequencing to schools.

Kim is a Senior Staff Scientist in the DNA Pipelines Research and Development team, where she has lots of experience with sequencing using a tiny DNA sequencer called a MinION. Kim realised that the size and portability of the MinION would allow her to visit schools with only a suitcase to share the heart of Wellcome Sanger Institute's science, DNA sequencing. Sequencing in a Suitcase is now a thriving and innovative project that has brought DNA sequencing to students in five countries, a shopping centre, a football stadium, a theme park and many schools.

Sequencing in a Suitcase uses state-of-the-art lab equipment to extract DNA so students

can experience first-hand how to read and assemble the DNA that makes up a genome, and how scientists use such data every day. Kim connects with schools who wouldn't normally get these opportunities, giving students practical skills in areas that they otherwise would only read or hear about. Kim's work has been praised by schools for being relevant to the curriculum, whilst also bringing new concepts to the classroom, including using professional lab grade equipment.

Several students have written about Sequencing in a Suitcase in their personal statements for applying to university, emphasising the value of the experience for them. In one case, a student changed her intended course of study at university following one of the sessions, and recently contacted Kim to discuss doing a summer laboratory placement at the Wellcome Sanger Institute linked to her biochemistry course.

The enthusiasm Kim has for genomics and public engagement has encouraged many other researchers to get involved. Sequencing in a Suitcase has given staff across Campus the chance to use and share technology that is very relevant to Campus science.

Furthermore, training in how to use MinION sequencers in schools has encouraged some researchers to explore the technology in their research. Kim's public engagement work has not only developed staff and students' skills in communication and public engagement, it has also had a direct impact on how Kim and her colleagues have approached their research at the Wellcome Sanger Institute.

Sequencing in a Suitcase continues to grow, encouraging other scientists to get involved and enthusing the next generation of genomics researchers.



Communicating science is non-negotiable. It is at the heart of what we do. We are here to contribute to society as a whole, and that means sharing what we learn."

Kim Judge



"Kim is consistently enthusiastic about public engagement, especially with the Sequencing in a Suitcase work she has been doing in schools. The example she has set has encouraged others to engage with the public through events such as science fairs."

Beth Flint, prize nominator

Nominees



Alex Cagan

Postdoctoral Researcher,
Wellcome Sanger Institute

Alex unites the arts and sciences to show how beautiful science can be. He has given presentations followed by workshops where people make prints in response to the science he has shared. He uses his own illustrations to humanise science and those involved in it, and builds connections with different audiences through live-sketching and interpretation. In 2018, Alex wrote and illustrated a book to celebrate the 25 Genomes Project and 25 years of the Wellcome Sanger Institute.



Frank Schwach

Senior Computer Biologist,
Wellcome Sanger Institute

Frank finds engaging with the public a great way to re-ignite his enthusiasm for his science. He has been a STEM ambassador since 2017, regularly participating in science festivals and schools visits across East Anglia. He is passionate about trying out new approaches to engagement whilst working in schools, and has modified existing outreach activities as well as devising entirely new ones.



Stephen Inglis

Senior Software Developer,
Wellcome Sanger Institute

Stephen founded a Code Club at a local primary school, where children can learn coding once a week during lunchtime. The skills nurtured in the children through the club are particularly vital for the rapidly growing area of genomics and biodata. Stephen provides advice, encouragement and support for groups of 10-12 children at a time, who learn coding through a variety of projects, quizzes and games. He is proud of the children and how hard they work, finding the excitement and enthusiasm they have for Code Club hugely rewarding.



Valerie Vancollie

Advanced Research Assistant,
Wellcome Sanger Institute

Valerie first got involved in public engagement 10 years ago by supporting the Campus at the Cambridge Science Festival, and has since taken part in a wide range of events. She is a regular contributor to Campus experiences for visiting groups. Valerie enjoys the interesting questions and discussions that come from her interactions with people of different ages, backgrounds and interests. She is currently working with a teacher in the USA to introduce genetics into their curriculum.

EARLY CAREER PRIZE

Celebrating staff or students at early career levels who have demonstrated proactivity and achievement in public engagement.



Winner



Hannah Currant

Predocctoral Fellow, European Bioinformatics Institute
Winner, Early Career Prize 2019

A chance encounter with computer science through friends at university led Hannah to teach herself to code and ultimately become a bioinformatician. She now makes sure that more young people who might otherwise overlook or have little access to it can discover computer science. Hannah believes in the importance of this happening when career paths, including routes to university, are still forming in young people's minds.

Hannah is passionate about engaging young people in a fun and approachable way. When she moved to Cambridge in 2016, Hannah found there was not an active CoderDojo group, so she set up her own, finding a venue, sponsors and mentors. CoderDojo is a global organisation that promotes free computer science education for young people through self-learning. The Cambridge group was so successful that it now runs monthly with around 25 children and their families attending each session.

Hannah is committed to encouraging young people from a range of backgrounds to attend the CoderDojo. The sessions run for three hours on weekend mornings and are open to people of all abilities aged 7 to 17 years, along with their families. Laptops are provided to anyone who may not have one. The sessions are volunteer-led and always free to attend.

Women are particularly underrepresented in computer science, and to help redress



I get huge enjoyment from my public engagement work. Progressing and expanding the club has been hugely rewarding, and it's a privilege to help young people with their projects and watch their confidence grow."

Hannah Currant

this imbalance, Hannah has focused on sourcing a gender-balanced set of mentors for regular clubs while offering a broad range of projects, from game building to creative arts and storytelling. The CoderDojo also offers women-only events, which have been so successful that the central CoderDojo organisation has taken Hannah's ideas and approaches to enhance clubs around the world. Closer to home, two 15-year-old girls have recently chosen Computer Science at A-level, influenced by their experiences at the club.

Organising a CoderDojo has also developed Hannah's skills in leadership and administration, which she believes will be integral to her future career as a bioinformatician. Teaching 7 to 17 year olds in

the same session has improved her ability to improvise and adapt her skills as an educator. She has also learned new coding skills and tricks through working with the young people on their projects, helping her own research at the European Bioinformatics Institute.

The CoderDojo has developed over time in partnership with the attendees, their parents and volunteer mentors to ensure the sessions work for everyone. Hannah plans to continue to grow the project with her team of mentors to develop more creative and meaningful ideas to support as many young people as they can to discover an excitement for computer science.



Hannah is sensitive to being inclusive in her engagement through targeted events including women-only sessions and promoting activities to a wide range of places and schools. It's great to read how her experience of engagement has informed and strengthened her scientific career."

Bella Starling, 2019 judge



Nominees



Monica Abrudan

Postdoctoral Fellow,
Wellcome Sanger Institute

Monica is a co-founder of the Romanian Society of Bioinformatics, which aims to build bioinformatics capacity in Eastern Europe. This includes familiarising the public with bioinformatics through Beer and Science, an event where scientists share their research with the public in pubs. She is also a science blogger and has translated over 50 Wikipedia pages into Romanian, including the Wellcome Sanger Institute's page.



Harriet Craven

Software Developer,
Wellcome Sanger Institute

Through coaching a weekly Code Club at a local primary school, Harriet has seen her understanding of software development and her confidence grow. She encourages the children to develop their imagination and creative skills in tandem with their coding ability to build software with personal meaning. She hopes her work will inspire children, especially girls, to become software developers in the future.



Tapoka Mkandawire

PhD Student,
Wellcome Sanger Institute

Tapoka aims to challenge the stereotypes of scientists and women. She regularly gives tours of the Campus to visiting groups and has been involved with many activities off Campus, including discussing her research on the human whipworm in schools. She has worked with a Scout group to help them complete their Global Issues Activity badge, and recently participated in a panel discussion at the Cambridge Festival of Ideas.



Gianmarco Raddi

MD-PhD Candidate,
Wellcome Sanger Institute

Gianmarco aims to foster a public discussion in science and health through his journalistic work. His articles are prompted by discussions between scientists and the public, and have been published in The Guardian, The Boston Globe and WIRED. The articles have led to flurries of online discussion and, in a recent case, the publication of response letters from readers, stimulating conversation still further.



Fiona Calvert

PhD Student,
Wellcome Sanger Institute

Fiona's involvement in a variety of public engagement events, including festivals and Campus experiences, has been a source of fun, inspiration and motivation for her research. She has recently developed a passion for storytelling, becoming a UK producer for The Story Collider. Through this, she reaches out to a wide variety of audiences, helping people to tell their own stories inspired by science.



Mallory Freeberg

Senior Bioinformatician,
European Bioinformatics Institute

Mallory is passionate about engaging with young people, particularly young women, to raise aspirations and show how becoming a scientist is a fun and rewarding goal. She encourages open conversations about data privacy issues, which are of particular relevance in her work. Mallory recently engaged on this subject with local residents in Peterborough during European Researchers' Night and also on Campus through a Scientist Speed Networking event.



Lindsay Pike

PhD Student,
Wellcome Sanger Institute

Lindsay describes public engagement as a stimulating aspect of research. Her award-winning poster for children called "The adventures of a poo scientist and SuperPoo!" is an example of the fun she has engaging even the very young with her work. Lindsay organised a celebration of World Microbiome Day on the Campus and has contributed to many public talks and local festivals where she discusses her own research, highlighting the unique setting of the Campus that makes it all possible.



Raghd Rostom

PhD Student,
Wellcome Sanger Institute

Raghd's public engagement work has helped her to think critically about her research. Conversations she has had with school students have given rise to new ideas. She was a radio host and writer for the Cambridge student-led science magazine BlueSci and has developed interactive sessions for school students that highlight the excitement of a career in science, inspired by her own research journey. Raghd has also written and performed science poetry at public events.

Nominees



Kärt Tomberg

Visiting Scientist,
Wellcome Sanger Institute

Kärt works to communicate scientific concepts clearly, with accessible words and concrete examples. She held a public How to Build a Protein workshop involving crafts for children and discussion starters for adults. Kärt also interacts with the Estonian anti-vaccination community via discussions on Facebook to understand their fears and concerns, and help with the interpretation of evidence and scientific information.



Lowri Williams

Visiting Researcher,
European Bioinformatics Institute

Lowri enjoys sharing her interest in science with others, and has found that it has increased her self-confidence and enthusiasm for research. She has designed and made a board game and a bacterial cell model that encourages discussion about her research. Lowri has successfully used these activities at science festivals and plans to take them to local festivals and schools over the next year.

SUPPORT FOR PUBLIC ENGAGEMENT PRIZE

Celebrating staff or students who have supported public engagement through leadership, guidance, or practical or emotional support.



Winner



Rich Livett

Senior Scientific Manager, Wellcome Sanger Institute
Winner, Support for Public Engagement Prize 2019

Rich believes that engaging with the public is important for building future talent in digital making. He has supported his team to participate in public engagement, helping to make their initiatives successful by providing time for them to organise and run activities, celebrating their achievements, promoting the benefits of engaging with the public, and demonstrating genuine enthusiasm and interest in the outcomes.

While volunteering at Cambridge Science Festival, Rich discussed public engagement with members of his team and realised the important role staff play as ambassadors in bringing science and computing to people, and encouraging dialogue and debate.

Rich supports his team to engage with the public in a variety of ways and ensures efforts are captured and celebrated in the context of team-wide objectives.

Two members of his team, Stephen Inglis and Harriet Craven, run a Code Club at a local primary school. With Rich's support, Stephen and Harriet visit the school on a weekly basis to run a 45-minute session. The Code Club has been a huge success, with students finding a talent for software development while also using their imagination, creativity, problem solving and team working skills. They aim to inspire future developers, specifically women, by coaching them through coding projects which are personalised for each and every child. The Code Club is one way of addressing the skills gap in software development in scientific and biodata research areas by engaging young people with coding at an early age.

The Wellcome Sanger Institute is a recognised centre of excellence in research and Rich sees the opportunity for the Institute to reflect the same reputational

ambition for IT and computing through public engagement. He views his team's involvement in public engagement as a way to raise their profile and forge relationships with colleagues across the Institute. He has seen the skills and confidence of his team grow through engagement work, particularly in explaining complex concepts in clear simple language – skills which are transferable back into professional settings.

Many members of Rich's team are enthusiastic about engaging the public with coding and commit time and energy to learning new skills to contribute to a variety of initiatives, including the Code Club. Without Rich's continued support, these initiatives would not have been as successful as they are. The team are excited to continue to develop their activities and inspire the next generation of software developers.



Rich has encouraged us throughout this process. He sees what we do as positive for the team and our own personal development. He is always on hand for support and advice, and is incredibly enthusiastic about what we are doing.”

Stephen Inglis, nominator



I choose to support public engagement through the team as it is a practical activity towards building future talent in digital making.”

Rich Livett



Nominees



Alex Bateman

Head of Protein Sequence Resources,
European Bioinformatics Institute
Highly Commended, Support for Public
Engagement Prize 2019

Alex has a long track record of novel engagement channels, originating the highly popular Origami DNA paper craft activity and more recently, developing paper elastic pop-up proteins. He has also been involved in a variety of public engagement events, including the Cambridge Science Festival, Café Scientifique and the Campus schools and community programme. He has actively supported public engagement training for PhD students and works with Wikipedia to encourage scientists to become editors to improve the accuracy of scientific information. He has acted as a supportive voice for public engagement activities at the European Bioinformatics Institute, and believes in the advocacy and influence that senior management can provide for staff and students. Alex has inspired members of his group to get involved in public engagement through his own enthusiasm and active involvement. He continues to encourage his team members to embed and plan for public engagement in the context of their research.

PUBLIC ENGAGEMENT PROJECT PRIZE

Celebrating a piece of planned work by a team or individual that demonstrates outstanding success in engaging external audiences with aspects of Wellcome Genome Campus science or research.





Last year, the Malaria teams at the Wellcome Sanger Institute brought a group of students to the Campus for a week-long, immersive research experience to explore how diverse scientific backgrounds come together to tackle antimalarial drug resistance.

A total of 12 students aged 16 to 18 years, who intended to study science or medicine at university, were invited to Campus for a week-long programme following a competitive selection process. To extend inclusion beyond the successful cohort, all students who applied were invited for a day experience of the Campus, themed around the Malaria teams' work.

The placement aimed to show how big biological problems in infectious diseases are approached by providing students with an immersive experience of genomics research that included a combination of field work, innovative lab experimentation, tours of Campus labs, and other education and engagement activities. By including ethical discussions within the placement programme, students were empowered to express their own opinions on the process and application of scientific discovery. Practical activities saw students diagnose parasitic infections, extract DNA and perform genome editing, before ending their week with a full day bioinformatics module.

The project was a collaborative effort across several teams at the Wellcome Sanger

Winner

Malaria Summer Placement Scheme

The Malaria teams, Wellcome Sanger Institute
Winner, Public Engagement Project Prize 2019



It is impressive to see the Malaria teams collaborating to create the programme for the students, and the push to show interdisciplinary science."

Becky Jones, 2019 Judge

Institute, involving members of staff and students from across the organisation at different levels. Many of the people involved in this project gained experience in public engagement for the first time. For those with previous engagement experience, it was the first time many had worked with young people of this age group. Taking part in organising and delivering placement activities increased the interest and confidence of researchers, with many having gone on to participate in further public engagement activities. During the week, members of the team also attended sessions outside their research focus, enabling them to learn new skills and experience different aspects of research done on Campus.

The students who attended gave the Malaria Summer Placement Scheme overwhelmingly

positive feedback. The teams will be repeating the scheme in 2019, and also aim to create a template for how similar experiences for students could be piloted in other areas and groups across Campus.



I learnt so much about malaria and about the work of the Institute and I really enjoyed being with such enthusiastic and welcoming people for the week. It was an amazing opportunity for me. It has also confirmed for me that I want to study biochemistry at university."

Malaria Summer Placement Scheme participant

Nominees



CGaP Public Engagement

Cellular Genetics and Phenotyping (CGaP), Wellcome Sanger Institute
Highly Commended, Public Engagement Project Prize 2019

The CGaP team of public engagement champions has worked to create fun and accessible activities based around their work. During the regional European Researchers' Night in 2018, the team were part of a mini-lab in Peterborough's Queensgate shopping centre to spark interest in lab techniques and the technical processes that underpin modern life sciences research. The group also created quizzes and interactive posters that were used at the event to showcase the scale and scope of their day-to-day work, reaching curious youngsters as well as intrigued adults. Closer to the Campus, the CGaP team have also enthusiastically hosted school groups, giving insights into lab life and catalysing discussions around subjects to study and careers to pursue. The team has dedicated time for engagement beyond the working week, most recently at Open Saturday, the Campus' monthly public visit opportunity, and plans to contribute even more regularly to this and other opportunities in public and schools engagement.



Cancer detectives

The Mutographs team, Wellcome Sanger Institute

The Mutographs team is supported by a major Grand Challenge award from Cancer Research UK. As part of a suite of engagement activities, the team developed Cancer Detectives to empower audiences to turn detective and analyse changes to DNA sequences to uncover causes of cancer. They successfully ran the activity in Cambridge's Grand Arcade shopping centre for European Researchers' Night in 2018 and more recently at this year's Cambridge Science Festival.



A levels and 'Sanger-style' science

Frank Schwach, Louise Aigrain and Alena Pance, Wellcome Sanger Institute

Working with the examinations body OCR, the team created a course as part of a new curriculum for A Level students that showcases state-of-the-art large scale science. The course includes videos that demonstrate the variety of work undertaken at the Wellcome Sanger Institute. There is a range of modules covering techniques used at the Institute, enabling students to learn more about subjects that spark their interest.



Scicling

Alejandro Marin-Menendez, Wellcome Sanger Institute

Scicling aims to bring science to secondary schools in Spanish-speaking countries. In April 2019, Alex cycled between rural schools in Lanzarote and Fuerteventura, delivering activities with students to highlight how science shapes our understanding of the world and impacts on our lives, as well as showcasing science as a career path. Alex hopes to use his bike in other countries to engage as many people as possible.

Nominees



Science for the people

Sara El-Gebali, Matt Jeffreys, Aleix Lafita, Piraveen Gopalasingam,
European Bioinformatics Institute

Mozfest, run by the Mozilla Foundation, is a hands-on festival dedicated to forging the future of the open web. The team created a workshop at Mozfest 2018 that involved people from diverse backgrounds and asked them to suggest ideas for stories, games or other ways to creatively communicate science. From this session, the team gained valuable insights into how best to engage with a wider community.



STEM Sushi

Sirarat Sarntivijai, European Bioinformatics Institute

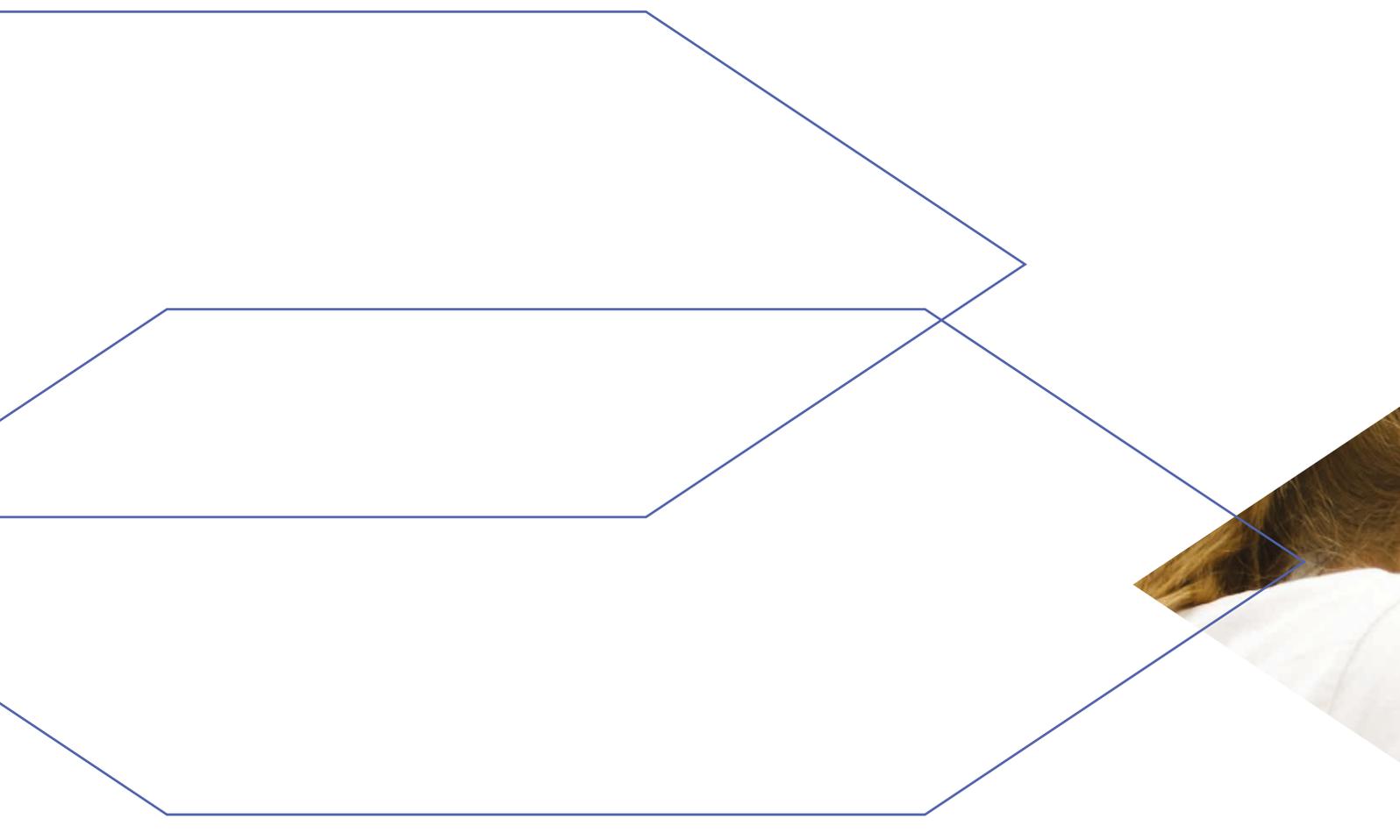
STEM Sushi engaged with families visiting Saffron Walden's Saturday morning market through an informal and relaxed mingle-and-nibble session. Local families had the chance to interact with researchers from the Wellcome Genome Campus and the University of Cambridge. STEM Sushi volunteers engaged with over 150 people in four hours and received praise for supporting the local community in an unusual and unexpected way.

Acknowledgements

The Connecting Science Public Engagement Prizes attracted a wide range of high-quality entries from across our Campus and we would like to take the opportunity to thank all the applicants and extend our congratulations on their rich and varied work.

We also thank our judging panel who had a difficult task in assessing the winners. They are:

Lindsey Crosswell, Head of External Relations, EMBL-European Bioinformatics Institute
Edward Duca, Innovation Communication Lecturer, University of Malta
Helen Featherstone, Head of Public Engagement, University of Bath
Becky Jones, Research and Engagement Relationships Manager, Public Engagement, Wellcome
Steve Palmer, Director of Communications, Wellcome Sanger Institute and Wellcome Genome Campus
Bella Starling, Wellcome Engagement Fellow and Director of Public Programmes at Manchester University NHS Trust



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